DTV STAFF DISCUSSION DRAFT OF THE DTV TRANSITION ACT OF 2005

HEARING

BEFORE THE

SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

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DTV STAFF DISCUSSION DRAFT OF THE DTV TRANSITION ACT OF 2005

THURSDAY, MAY 26, 2005

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

The subcommittee met, pursuant to notice, at 11:40 a.m., in room 2123 of the Rayburn House Office Building, Hon. Fred Upton (chairman) presiding.

Members present: Representatives Upton, Stearns, Gillmor, Cubin, Shimkus, Pickering, Fossella, Radanovich, Bass, Walden, Terry, Ferguson, Sullivan, Blackburn, Barton (ex officio), Markey, Engel, Wynn, Gonzalez, Inslee, Boucher, Towns, Gordon, Rush, Eshoo, Stupak, and Dingell (ex officio).

Staff present: Howard Waltzman, chief counsel, telecommunications and the interet; Neil Fried, majority counsel; Kelly Cole, majority counsel; Will Norwind, policy coordinator; Jaylyn Jensen, senior legislative analyst; Anh Nguyen, legislative clerk; Johanna Shelton, minority counsel; Peter Filon, minority counsel; Turney Hall, staff assistant; and Alec Gerlach, staff assistant.

Mr. UPTON. I will note that a good number of my colleagues certainly on this subcommittee and the entire Congress are very interested in this hearing today, and we are in the middle of votes, and we are going to start now, just because I expect that this hearing will take a number of hours, and so we will get members as they come in for their opening statements before we start the hearing. But in an effort to be out of here by tomorrow, we will start today. And I appreciate all of those that have been waiting since yesterday to get into the room, as well. Some were lamenting the fact that there is a prohibition on earned income, and I guess line sitters would fit that test, as we have seen the last number of hours.

Good morning. Today, we are, in fact, examining a staff discussion draft of the Digital Transition Act of 2005, and if the only goal of the staff discussion draft was simply to promote discussion, then based on the number of witnesses in attendance at today's hearing, I would say that the staff has certainly succeeded. But of course, the goal of the draft is much more profound than that. After many hearings over the years, multiple DTV round tables, numerous FCC proceedings, billions of dollars invested by both consumers in various industries and digital technology and services, the goal of this draft was to help crystallize the subcommittee's position on a myriad of issues in this debate, so that we can, in fact, actually put

a bill together, move it through the legislative process in the coming weeks, and get it enacted into law as expeditiously as possible.

At its core, the draft would set December 31, 2008 as the hard date for the end of the transition. This, along with the draft's comprehensive consumer education provisions, will best ensure that consumers, public safety, and all affected industry players can adequately plan and complete the transition as seamlessly as possible.

The draft contains many other important elements, and I look forward to the input of the members on both sides of the aisle, and our witnesses, on those provisions. I want to commend somebody that is on his way back from the House floor, my chairman, Chairman Barton, for his leadership, his stewardship and commitment in getting us to where we are today.

I want to tip my hat, also, to good friends, Ranking Members Dingell and Markey, for the many hours of bipartisan and good faith negotiations, constructive all, which they have invested into this process thus far, and I look forward to continuing those negotiations with them and all members of this subcommittee, in the coming days and weeks, to achieve what I hope will be a broad, bipartisan consensus.

Failure to move or transition to a date certain, a digital world would be just that, a failure. Failure for the broadcasters, who have each invested millions of dollars to convert, failure for the manufacturers who have been encouraged to produce the sets, failure for those consumers expecting new advances and better quality to improve their lives, whether in new devices and technology or simply public safety. And failure for the taxpayers, expecting more than $10 billion for the sale of the analog spectrum. It would be a major setback. The stakes are high, but consumers will all benefit as we fully enter the digital age.

I am confident that at the end of the day, we will have a DTV bill that will deliver something of real value to American consumers throughout the Nation, and I will yield for an opening statement to my friend and colleague from Washington State, Mr. Inslee.

[The prepared statement of Hon. Fred Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON, CHAIRMAN, SUBCOMMITTEE ON TELECOMMUNICATIONS AND THE INTERNET

Good morning. Today we are examining a staff discussion draft of the Digital Transition Act of 2005. If the only goal of the staff discussion draft was simply to promote discussion, then—based on the number of witnesses and the attendance at today's hearing—I would say that the staff has succeeded.

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The stakes are high, but consumers will all benefit as we fully enter the digital age. I am confident that at the end of the day, we will have a DTV bill that will deliver something of real value to American consumers throughout the nation.

Mr. INSLEE. Thank you. Let me make a couple of small points and maybe a larger one.

The first point, on the broadcast flag issue that I think needs some discussion. This recent court decision could result in less digital broadcast content being made available to consumers, and as a result, this could actually slow the acquisition of digital television transition, and I hope Congress will work with all interested parties to examine the pending broadcast flag issues and provide the FCC with appropriate authority, and these powers must be limited, however, explicitly, not to slow or meddle with technological innovation.

Second point, I hope that we preserve unlicensed spectrum. WiFi has shown incredible scope and breadth and success, and I hope that we find a way to do that. But the third point that I wanted—that I suspect I will not be alone in making is the failure of at least the draft to address the issue of easing this transition. It seems to me that there is a new high tech principle that has been discovered, which is that you don't—there are certain things you don't do. You don't tug on Superman's cape, you don't spit into the wind, you don't pull the mask from the Lone Ranger. You don't take people's television away without dealing with a subsidy issue effectively. And we have a lot of work to do in this regard.

Now, I think if we do not provide Americans who are affected by this transition, we not only may not have a bill, ultimately, and we must have a bill, and the quicker, the better, but we will find a rebellion that makes the Whiskey Rebellion look like sort of a tea party, and maybe the Boston Tea Party.

We need to have a system that recognizes a principle that the first claim on auctioned spectrum of Americans should not be bridges in our respective districts, or deficit reduction, or tax cuts, but subsidizing the acquisition of costs to pay for this transition that Americans are going to experience. And I think that I heard one of my colleagues suggest that if the bill passed on Tuesday, we would all be impeached on Wednesday. That would lead—I may be offering an amendment to say that the transition will actually take place 6 months after the retirement of the last person on the committee. But I would like a little earlier date.

And I would hope that we would look for a direction to this bill as we work through this, have an earlier date and a larger subsidy, recognizing that the Americans who will be inconvenienced financially by this, all Americans, not just those of certain income groups, will have assistance for this, because those are the people

of all Americans that ought to have the first claim on the auction, and it is very clear that this auction will generate sufficient funds to accomplish that goal. If you do the math, I think we will find the good news is there will be a large pot of money available to accomplish this end, and I think that we need to look at this as a universal service for people who are inconvenienced by this financially, not just one based on means testing. I think a means testing approach to this would not only be a difficult in its application, but will miss the fact that a person who earns $50,000 a year who has this rug pulled out from under them on their television set will be just as angry as a person who earns $7,000 a year, and that is an anger that the U.S. Congress should not allow to fester. And I really believe this is an issue that is bigger than just this sort of digital TV transition. It is one that can get enough Americans angry at the Federal Government that it can affect their willingness to pay taxes, their willingness to look at democracy as a fair place where people are treated fairly.

I don't think we should understate the need to get this job done and done right, and thank goodness that we are going to have money available to do it. So I hope that, Mr. Chair, we are going to look for a way to get that, make sure the Americans who have to pay this are the ones who have first claim on this, and to the last dollar, and we find the best way to design a system to do that.

Thank you.

Mr. UPTON. Mr. Bass.

Mr. BASS. Thank you, Mr. Chairman, and I appreciate your allowing me to speak early on in this process, since I am sitting over here in Siberia for a reason. I have to preside over the military quality appropriations bill, which actually has already started, and so—but this is a very important hearing for me, and I wanted to be here just to give our witnesses today the benefit of a couple of observations.

First, I sure would like to see the final product, a bipartisan product, and I know the Members of Congress on both sides of the aisle have been working on this issue. We are not there yet, but we ought to keep the discussions underway. It is unfortunate we are not there yet. I also feel that a plan to implement subsidies is going to be difficult, complicated, and potentially unworkable, and I believe that the bill itself, by moving the date forward to December 31, 2008, and adding to it provisions that will provide mechanisms to warn consumers about what is pending will lessen the—considerably, the surprise that we will all want to avoid when the actual conversion occurs.

Absent being able to pass a bill with subsidies, or that has subsidies, I would be interested in the observations of our witnesses as to what kind of thought—what thoughts they might have on how we might create further incentives to get the industry itself to go through the conversion prior to December 31, 2008, so that we—even lessen the shock—what could we do legislatively on a policy level that would make that conversion occur sooner, without backing right up to the deadline? This is a great opportunity to begin this discussion with this discussion draft, and I look forward to working with all the parties involved in this very complicated but very important national issue.

Thank you, Mr. Chairman.

Mr. UPTON. I would recognize the ranking member of the subcommittee, Mr. Markey.

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

Today's hearing will focus upon draft legislation affecting digital television issued by the Republican committee staff. After several weeks of discussions involving Chairman Barton, Chairman Upton, Ranking Member Dingell, and myself, no agreement was reached on a consensus blueprint for the digital television era. We did, however, agree upon several items.

We agreed, for instance, on the desirability of bringing the digital television transition to a timely conclusion, and the setting of a date certain for the cessation of analog television broadcasting. We agreed upon the need to do so in order to assist public safety entities in obtaining much-needed cleared frequencies for their vital public safety mission, and to free up frequencies for other wireless uses, such as broadband wireless services.

We also agreed on the need for an effective consumer education campaign that includes public service announcements, consumer disclosure, and informational outreach, so that consumers are fully aware of the changes being wrought by this digital TV transition.

Notwithstanding our general accord on these issues, several areas remain without resolution. These areas include public interest obligations and multicast must-carry issues, the policies for down-converting digital broadcast signals on cable systems from analog form, addressing spectrum-related and competition-related issues, and the principles for treating consumers fairly when the government renders their analog TVs inoperable.

These areas of disagreement, while not insurmountable, are nonetheless significant. Constraining our ability to reach agreement is the fact that this legislation is intended to become part of the budget process, because of the revenue raising potential of the auctions of the frequencies the broadcasters relinquish. Many of us have criticized the fact, over several Congresses, and on both sides of the aisle, that unrelated budget priorities poison our ability to enact sound telecommunications policies. In the current instance, the implications of allowing budget policy to trump telecommunications policy are not academic. They could affect literally millions of American families. This is because when the date certain arise, on New Year's Day 2009, to turn off the analog TV signal, the Federal budget will still be in the red, even as consumer TVs go black. The core of any digital TV bill we approve should ensure that all affected consumers have some government backed remedy to restore the signals the government itself is ordering turned off.

Even today, across the country, Americans will be walking into retail outlets and buying analog only televisions. If there is no plan for such consumers, then consumers will be rightly angered that they must bear that costs, that $50 or $60 or $75, perhaps, to restore the TV pictures the government is shutting off per TV. Think about it. It would be as if the government turned off your phone or your computer, but offered to turn it back on if you sent in $50 or $60 or $75. What are we going to do for the American consumer, for the families who will be tuning in, expecting to watch a New Year's Day College Bowl in 2009, when the government reaches

into their homes and turns off the set. How will we respond to these consumers?

A digital TV tax will not go over very well with consumers, and the fact is that it is totally unnecessary, since the auction is expected to raise at least $10 billion. There are upwards estimates of $30 billion. There is more than enough money to make all affected consumers whole who are unfairly blacked out by this policy imposed from the top down. It is unacceptable that we have no plan to restore service to televisions that the Congress will render as inoperable, moreover, a plan which simply helps a few consumers, but leaves the vast majority with no remedy is not only challenging to implement, it is also unjust to the tens of millions of consumers who spent hard-earned money to buy a television set that they thought would work for decades.

So if you are one of the millions of consumers who has an analog TV clicker in one hand, you had better have your other hand on your wallet, because the government is coming for both, and we need to pass legislation that ensures that the consumer is protected. I hope that in the course of this process, we have the opportunity to rectify the omissions and shortcomings in this draft, because I think it is critical for every American family that we do so.

I thank you for holding this hearing, Mr. Chairman.

Mr. UPTON. Recognize Chairman Barton for an opening statement.

Chairman BARTON. Thank you, Mr. Chairman, and I want to apologize to our panelists. Mr. Upton likes to have one panel, and since we have so many of you, we have a very big one panel hearing, so we do—especially Mr. Pitsch, who will have to listen for an hour before he gets to give his 5 minutes of wisdom. Save the best for last, so to speak, maybe?

Anyway, thank you all for being here. This is a legislative hearing on a draft proposal. It doesn't have a bill number, because Mr. Upton and myself have been in serious negotiations with Mr. Dingell and Mr. Markey, and those have been very productive and cordial negotiations, that we could not reach agreement on some of the finer points of the proposed bill, and I have a little thing called reconciliation staring me in the face, which is not something that my friends on the minority side have to be as concerned about as those of us on the majority. So we wanted to go ahead and introduce a bill to begin the public discussion, and that is what this bill is. But it is an evolving document. We are not trying to say this is what the legislation is going to be, but hopefully, we are setting some parameters.

There is really only one principle that is not on the table, and that is that this date certain is going to become a date uncertain. I think the big failure in the current law is that the uncertainty, the December 21, 2006, or when 85 percent of a particular market, that or, in my opinion, is a fatal flaw, and if we don't eliminate that or, I am not sure this country is ever going to get the digital transition. So I would prefer that the date certain be December 31, 2006, but in discussions with Mr. Dingell and Mr. Markey, and in listening to stakeholders, it became apparent to me and Mr. Upton that we needed to give some more time, so we have extended that date in the draft 2 years, to December 31, 2008. I don't see that

that is going to change, so I would have to say that date is probably frozen, but we will certainly listen on that point.

There are some things that are not in the draft discussion. We have no subsidy, and obviously, we had discussed a subsidy. I myself would support a limited subsidy for low income households, means tested, at a reasonable cost to the Treasury. That is something that we will hear a lot of testimony on, and there will be a lot of negotiations on. The bill before us does not have a must-carry obligation. Obviously, in the analog world, we have must-carry, so that is something that would be worthy of discussion. Should there be must-carry, and if so, is it multicast must-carry? Is there a public interest component to any must-carry? We have our friends from the cable industry here. There is obviously going to be some discussion about down conversion at the head end, and we are interested to hear what our friends in the cable industry say about that.

So this is a beginning of a process. You know, we do want to produce a bill. We would like to do it at subcommittee, and then full committee, go through regular order, so that all members on the subcommittee and the full committee can have their input, pass the bill out, and then my intention at this point in time would be to use the bill that comes out of committee as part of our reconciliation package that we send to the Budget Committee in September, so that it would become law at the end of the year.

So we look forward to working together with all the stakeholders that are here today, perhaps some that were not able to testify, and the members on both sides of the aisle, so that at the appropriate time, we modify the bill and move forward in a bipartisan fashion.

With that, Mr. Chairman, I yield back. I thank you for your leadership on this. We couldn't have a better person chairing this particular hearing, and your knowledge on this issue is going to be very, very helpful, as we move toward a resolution of some of the outstanding issues.

[The prepared statement of Hon. Joe Barton follows:]

PREPARED STATEMENT OF HON. JOE BARTON, CHAIRMAN, COMMITTEE ON ENERGY AND COMMERCE

Thank you, Mr. Chairman, for holding this legislative hearing on the DTV hard-deadline staff discussion draft. As I have made clear, I believe the 85-percent penetration test in current law is delaying the DTV transition, making it harder for industry and consumers to prepare for the end of analog broadcasts, and preventing use of the spectrum for critical public safety and wireless broadband purposes. I think a hard deadline creates the certainty we need to resolve these issues.

While I prefer a December 31, 2006 hard deadline, I have listened to industry and my colleagues, and I am willing to wait until December 31, 2008, if it will make my colleagues less anxious about completing the consumer education and regulatory steps needed to achieve as smooth a transition as possible.

I have also said, in the context of a December 31, 2006 hard date, that I am willing to provide one, $50 rebate toward a digital-to-analog converter-box for each exclusively analog, over-the-air, low-income home. The need for a subsidy diminishes, however, if we move the hard date to December 31, 2008. By all accounts, the cost of digital-to-analog converter boxes will have more time to drop. The tuner mandate will also have more time to increase the number of digital, over-the-air tuners in consumers' homes, especially if we accelerate the tuner mandate deadline.

The labeling and consumer education provisions in the bill also will ensure that consumers understand their options, and understand that they will have more time to decide whether to buy a digital television or a converter box, or to sign up for cable or satellite service. Consumers also will have more time to save. If I start putting aside just 30 cents per week, I'll save more than $50 by the time a December

31, 2008 hard deadline rolls around. I've got a lot of television sets, so I'm going to take my own advice and start saving now.

But I am also here to listen. You all have before you a staff discussion draft. Tell me what you think works. Tell me how you think we can make it better. Chairman Upton and I intend to move a hard-deadline bill expeditiously. I hope we can build consensus toward bipartisan legislation.

I look forward to the testimony of our witnesses. I thank them for appearing, and yield back.

Mr. UPTON. I am just sure you want to hear when I praised you up and down as well, but I will make sure you get a copy of it for your district work period reading, and the same I said for Mr. Markey and Mr. Dingell. Mr. Towns.

Mr. TOWNS. Thank you very much, Mr. Chairman, for holding this hearing.

I am pleased that we are addressing the long-awaited tangible steps toward next generation television viewing. I am anxious to hear from our witnesses today, so therefore, I am going to be brief.

America is lagging behind in technological advances, and I am confident that the digital TV transition will lead to improved hardware, better delivery, and more choices for consumers.

Echoing many of my subcommittee's colleagues' sentiments, I feel that it is crucial for us to address the concerns of those who will be adversely affected by this transition, and we must be aware of their fears. I am certain that the subcommittee will perform the proper due diligence going forward, and I plan to raise our issues with my constituents in order to hear their thoughts. I was pleased to read about the educational initiatives proposed in the draft, and I look forward to working with the subcommittee on crafting a bill that leaves no stone unturned and no household left behind.

Let me consider all of the options as we deliberate further toward a comprehensive and fair bill. One issue that I would like to stress today is the overwhelming need for more spectrum by the law enforcement community. September 11, 2001 was a terrible day in the history of this country, and it was especially awful for Brooklyn. Mr. Chairman, I hope that as we move this bill forward, we emphasize the need for additional spectrum allocation to our cops, firefighters, and other first responders who desperately need it. We owe them everything, and this is a perfect way to continue repaying them for all they do for us.

Finally, another critical issue that needs to be addressed to ensure the success of the DTV transition is the protection of the free over the air digital broadcast content from unauthorized redistributions. Recently, the Federal Communications Commission addressed this issue in a broadcast flag ruling. Unfortunately, the United States Court of Appeals of the D.C. Circuit struck down this rule.

Congress needs to pass legislation as soon as possible to give the FCC the necessary authority to implement the broadcast flag rule, and I would encourage the ranking member and the chairman to include in the markup free and unauthorized distribution of content is detrimental to a large number of New Yorkers and other American citizens, and we should work to protect all aspects of intellectual property and the jobs and innovations that results from it.

So Mr. Chairman, I look forward to working very closely with you as we continue to develop this proposal, because I think that it is important that we make certain that we don't leave anybody behind.

Thank you so much. I yield back.

Mr. UPTON. Thank you. Mr. Terry.

Mr. TERRY. Thank you. I will, too, try and be brief. I just want to say that I appreciate this draft that you have supplied or helped draft here. I think the date is absolutely the right date. It is far enough out that the FCC can provide the rules and regulations for the auction, et cetera, that have a seamless transition at least from their aspect, far enough out that we can educate the consumer. We move up the time in here for the dual tuner in the TV sets.

Consumer electronic folks, I'd like to hear how you feel about that. I think that is a necessary component to this. To me, I think the one issue that is the most difficult to wrestle with is the subsidy issue, and I am open to some sort of subsidy. I have said at several of our hearings, though, I do think it needs to be limited to those folks that are the most affected by this transition, i.e., low income antenna users. And that we may have a response to those folks in particular. Therefore, a subsidy that is means-tested that helps those that are most in need is appropriate. Perhaps we can team up with the FCC and the State PSC's, PUC's on the lifeline, and use that as the mechanism or trigger mechanism, something that maybe we can explore here today.

So I just want to want to say I appreciate the hard work that has gone into this draft, and I appreciate all of our witnesses here today that will help us come up with the next draft. I yield back.

Mr. UPTON. Mr. Boucher.

Mr. BOUCHER. Thank you very much, Mr. Chairman. I want to commend both you and Chairman Barton for the thoughtful work that you have undertaken on this matter. I particularly appreciate your inclusion of our side of the aisle in the work that you have put forward to date, and I encourage you to wait for a markup on the bill until we have a bipartisan agreement on all of the elements, including the size and delivery mechanism of the converter box subsidy.

In many respects, the draft bill moves in the right direction. For example, it has a more realistic date for analog spectrum surrender of December 31, 2008, allowing sufficient time for the manufacture and the distribution to television set owners of digital to analog converter boxes. The bill also addresses the need for cable operators to continue to make analog feeds available, so that analog set owners in cabled households can continue to use their analog television sets. Some further modifications of that particular provision may well be in order. And the bill appropriately imposes further requirements that new TV sets contain digital tuners, but the draft bill does not contain a means of holding harmless the owners of the 73 million analog television sets that are over-the-air dependent. Without regard to income, these individuals should receive a free converter box. Restricting free boxes to low income individuals is unfair. It would also result, I believe, in a massive political backlash.

No one is going to be pleased if the Congress imposes a cost of $50 per television set on individuals of whatever means. And we don't have to take that step. A full $50 subsidy for each of the 73 million analog TV sets dependent on over-the-air signals would cost approximately $3.7 billion. The real cost would be somewhat less, as people decide to discard their older analog sets and purchase newer digital sets instead. But even at the $3.7 billion figure, the subsidy is clearly affordable. The latest estimate is that the analog spectrum auction will produce $28 billion. This committee's reconciliation obligation of $4.7 billion and the full subsidy of $3.7 billion would still leave a significant net contribution to the U.S. Treasury. Even the CBO estimate of $10 billion from the sale of the spectrum leaves ample room for both reconciliation and the full subsidy to the owners of all over-the-air dependent analog television sets.

So, Mr. Chairman, my advice is don't anger millions of Americans needlessly. There is no reason to be stingy with regard to this subsidy. Provide a full subsidy for the converter boxes, and all of these problems can be avoided. And then, we can report this bill with what will approach unanimous opinion from this subcommittee.

Mr. Chairman, I thank you for the work you have done to date, and I look forward to working with you in further steps of this process, and I yield back.

Mr. UPTON. Mr. Stearns.

Mr. STEARNS. Thank you, Mr. Chairman, and like my colleagues, let me congratulate you for this hearing, and also Chairman Barton and the ranking member, Mr. Markey, for what they are doing. I have great respect for my colleague, Mr. Boucher. I am not convinced the subsidy is absolutely necessary. If all the consumers knew about this requirement, $50, that is $0.14 a day, they would have to save for 1 year. If they knew about it today, and they saved over the next 3 years, that would be $0.035. The $3.7 billion to me is a lot of money, and I have some concern about setting up a government subsidy program, when we could have on the screens, notification at least 2 years out, that the analog set will not be able to take the digital, and you need to transition. So I am not sure that is—should be a key element of passing this bill is to have a large subsidy for the consumers. And I say that, knowing well that I have a Congressional district where there are parts of it that are quite rural. There is 40,000 of my constituents have the analog televisions, so they would be, obviously, affected. But in the end, I think a subsidy, if we give sufficient notice, is probably not necessary, and so I am hoping, Mr. Chairman, that we can work through this.

I do have another concern, and that is the must-carry that we passed for analog TV in the 1992 Cable Act. I think we need to continue to find a way to strike the proper balance between cable and broadcasters, and use, of course, every technological tool that is available to promote broadcast independence and localism. There has been some sort of compromise to help these entities have a place in the digital landscape.

In an ideal world, there would be a private and free negotiation between the interested parties, and I am hoping, Mr. Chairman, we

can do that, without some type of Constitutional question involved. I am also interested to learn whether the down conversion provision in the draft provides some sort of compromise. Although I understand both broadcasters, small broadcasters, and cable have some serious objection. I believe in the free negotiation of these parties, and so I am hopeful that during the continuing discussions and markup that we can work through this.

We have a lot of witnesses here, so, Mr. Chairman, with that, I yield back the balance of time, and commend you for this hearing.

[The prepared statement of Hon. Cliff Stearns follows:]

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

Thank you Mr. Chairman for holding this hearing today on the DTV staff discussion draft.

I commend you and Chairman Barton for bringing us to this point and everyone who helped work on the staff discussion draft that is the topic before us today, This is just a starting point, we have a ways to go but I hope that we can get where we're going in a timely fashion.

No one ever said that the transition to digital would be easy. We've had at least ten hearings on this issue since 2001, and we've heard from broadcasters, cable operators, consumer groups and retailers on the various challenges everyone will face.

There will be sacrifice and some uncertainty involved, but I think most everyone agrees that the transition offers its own reward: enhanced public safety services, new advanced wireless services for millions of Americans, auctioning of the spectrum, and of course vastly improved television viewing.

That's why it's imperative that we use this hearing, and what I'm sure will be more hearings to come, to work together and to make the digital transition a reality.

I believe that there are several highly useful provisions in the draft, particularly the parts about consumer education and accelerating the DTV tuner mandates. Hopefully these provisions and the certainty of a hard deadline will help Americans recognize the fact that this transition is indeed going to happen. There are still, at last count, about 15 million households who have only analog over-the-air sets, and that could be left in the dark even with the extended hard deadline. By one count, this includes approximately 40,000 of my own constituents.

Another concern of mine is that my rural and diverse district depends on local broadcast programming for news and information, weather, sports and public affairs programming. These broadcasters provide a valuable service, which is why I voted for "must carry" for analog TV in the 1992 Cable Act.

We should continue to try to find a way to strike the proper balance between cable and broadcasters and use every technological tool at our disposal in order to promote broadcast independence and localism. There has to be some sort of compromise to help these entities have a place in the digital television landscape.

In an ideal world, there would be private and free negotiations between the interested parties—why aren't these agreements being worked out so that the government doesn't have to act?

I am also interested to learn whether the "downconversion" provision in the draft provides some sort of compromise, although I understand both small broadcasters and cable have serious objections.

These are my main concerns about the transition, and of course my colleagues have their own questions. I guess that's why we have ten witnesses here today, to help us answer these questions.

I might also mention the broadcast flag issue, an issue that I have long supported and that seems especially relevant in the aftermath of the recent Appeals Court case. I see that such a provision is not included in this draft, and I understand that it may not make the final version, but this is an issue that we this subcommittee may want to take a look at, separately, after we take care of more prominent issues.

So with that, Mr. Chairman, I would yield back the balance of my time and ask for unanimous consent to put the rest of my statement in the record.

Mr. UPTON. Thank you. Mr. Wynn.

Mr. WYNN. Thank you, Mr. Chairman, for holding this very important hearing on how to best facilitate the transition to digital television.

I would like to first welcome Steve Souder from my district, who is here to explain the impact that this transition will have on public safety. Mr. Souder's comments are extremely important, because districts like mine that are high target areas for terrorist attacks desperately need the extra spectrum to adequately serve their constituents.

Additionally, since most individuals now turn first to their televisions in time of crisis, it is particularly important that we ensure that television sets do not go dark. This discussion draft is a good start to expedite the digital television transition. I support the hard deadline and the provisions that require public safety announcements on broadcast TV, notification in cable bills, the public education program by the FCC, and labeling on analog-only TVs, although I believe the language should be more consumer friendly.

However, the draft obviously does not include provisions on the critical question of subsidizing those who are adversely affected by the bill. The draft does not begin to address how to best subsidize those individuals who, by no fault of their own, have bought and continue to buy analog-only TV sets that will not work after the transition. I believe that Congress should, at the very least, support the more than 21 million homes that solely rely on over-the-air television to ensure that their televisions do not go dark.

I know this is critical. I think there are several approaches that we could consider in this regard, but I think it is without question a case in which government is imposing a burden on consumers, and government has a responsibility to alleviate at least some of that burden. Thank you, Mr. Chairman, again for allowing us to have this discussion. Thank you for the draft, and thank you for holding this hearing.

Mr. UPTON. Mr. Radanovich.

Mr. RADANOVICH. Thank you, Mr. Chairman. I will be brief, but just want to say thank you for the work that you have put on this draft legislation, and I appreciate the process that you are laying out, so that we can have a collaborative effect on putting a bill, I think, that works best for the consumers and the industries. I appreciate the fact that it has been laid out that way, and I appreciate the work of Chairman Barton on this as well. Thank you.

Mr. UPTON. Mr. Gordon.

Mr. GORDON. I ask that my remarks be made a part of the record, and move on.

Mr. UPTON. Mr. Rush, extra 3 minutes for Mr. Gordon.

Mr. RUSH. Thank you, Mr. Chairman. I wish I could be as gracious as my colleague from Tennessee, but I have to—a couple things I want to say.

First of all, Mr. Chairman, I want to let you know how much I appreciate both you, the ranking member, and also, the ranking member, the chairman and the ranking member of the full committee, for the work that you have done on this particular bill.

In this draft version of the—of this bill takes a step in the right direction, and I am extremely pleased that the draft includes a consumer education component provision, and I want to thank you and also the others who I have mentioned previously for your work on including this consumer education component provision.

As I stated many times at our hearing, warning labels should be required on analog-only sets, so as to alert consumers to the limited use of their television sets, and for that, I thank you, again, you, for providing that provision. However, Mr. Chairman, I am disappointed that the bill does not include a subsidy for some 21 percent of the population that will be disenfranchised, because they rely solely on analog over-the-air broadcasts, and cannot afford to buy set top boxes. That said, I am confident that we will have a subsidy program in the final draft of this legislation, or else the legislation, in my opinion, would be DOA, dead on arrival.

The question for discussion is not simply whether we would have a subsidy, but who would qualify for the subsidy, and what form will the subsidy take. For example, are we talking about a rebate, a voucher, or a government tax credit? Whatever form of subsidy we choose, we must ensure that low income households are, indeed, covered. As for the other provisions in the draft, I am concerned that the auction of spectrum would not be fair and balanced. As you know, the broadcasters will have to give back at least one third of their frequencies, and there are many interested entities clamoring for these beachfront frequencies. I would hope that this committee will ensure that these spectrums are available to public interest groups and economically disadvantaged small business entities.

Before I end my statement, I want to—last comment, I want to remind this subcommittee that this legislation is one of the most important pieces of telecom legislation that we will work in, and it has the potential to be disastrous if it is not done right. One thing I have learned as a politician is that you do not mess with America's car or America's TV. Let us face it. We live in a society where the American person is more versed on who won American Idol than who is their Member of Congress, and I believe that if this transition, digital transition is done wrong, some of our brightly lit Congressional careers will suddenly go dark.

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

Mr. UPTON. We look forward to making it the Rush Bill.

Mr. RUSH. Only if it is good.

Mr. UPTON. Mr. Walden.

Mr. WALDEN. Mr. Chairman, I will yield in exchange for the additional 3 minutes of questioning.

Mr. UPTON. Ms. Cubin.

Ms. CUBIN. Thank you, Mr. Chairman, and I will be very brief. I would like to associate myself with the concerns that have been expressed here today about people having to pay for their own TV set boxes.

I can tell you for sure single moms and senior citizens have more pressing needs. I don't—I think even if you aren't at the poverty level or near it, that forcing people to spend extra money for their television set just isn't a good way to go. I am also concerned very much that when this spectrum auction occurs, that the geographic areas that are covered by the auction will be beneficial to rural America. For example, if Wyoming, Colorado, and Utah are all auctioned together, then where will the investment go. It will go to Denver and it will go to Salt Lake, and how far behind will Wyo-

ming be? So I think that those, the division has to be very clear, so that rural America isn't disadvantaged once again.

I will close my remarks with that. I look forward to the testimony, and I thank everyone for being here today.

Mr. UPTON. Ms. Eshoo.

Ms. ESHOO. Thank you, Mr. Chairman, for holding this hearing, and welcome to all of our witnesses, and I am just about on that side of the table, we are so close this time. So I am glad we have a table long enough to fit you all in.

I am pleased to see that we are making some tangible progress toward completing the digital television transition, which in my view, and I have expressed this many times, has really dragged on for far too long. I am eager to work with the chairman and members of the committee to accelerate the process, so that we can deliver more innovative programming and services to consumers, and free up valuable spectrum for other purposes.

I think the staff discussion draft is a start, but I think that there is obviously more work to be done. The omission of a subsidy program for analog converters, and I think that this has been mentioned by several members of the committee, is a glaring omission, and this is something that we can and we should do, for a whole of variety of reasons that I am not going to go into now.

I would also like to pursue an earlier date. I started out by saying this has dragged on for a very long time, and I think that there is evidence emerging that we can accelerate the process without disenfranchising consumers, and without exacerbating our budget problems. I also think we have to devote greater attention to the spectrum auction process, which has really largely been ignored. Why? Because I think it presents such an enormous opportunity for our country. The analog spectrum which will become available can be used for advanced communication services, such as wireless broadband, and if it is managed properly, it really could create vigorous competition with new entrants into the high-speed Internet access marketplace.

I think that we always have to be mindful of budget considerations, but with all due respect to the CBO, they are really not in charge of competition, and I think if we don't start looking after competition in this country, innovation and competition, in a very broad way, that we are really headed for an iceberg. When you see where we are in terms of broadband in our country, we place something like 16th in the world. You ask people in this country if they want to be a member of a C minus team, and they are insulted. So I think that this committee has to take into very, very high consideration competition, and what the opportunities are for us. The 700 megahertz band offers a historic opportunity to provide the equivalent of a third wire into the home, an alternative to telephone or cable broadband access.

Without thoughtful spectrum management policies, what I call this new beachfront spectrum property could become the new wing of the mega-hotels that already dominate this shoreline, and I think that that is really where we have to focus a lot of attention. If the bulk of the spectrum that becomes available is purchased by the existing duopolies, we will have lost a once in a lifetime oppor-

tunity to create new competition and incentives for new entrants, innovation, and broader service offerings.

So it is with all of this in mind, I think it is critical for this committee to establish a spectrum policy for these auctions that favors new entrants and competitive services. How we utilize the valuable resource made available by this extraordinary event, I think is going to shape the telecommunications landscape for decades to come.

So thank you for holding the hearing, Mr. Chairman, and I look forward to the testimony and the debate that is going to ensue.

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

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

With the impending acquisition of the two largest long-distance phone companies by the two largest Bell operating companies, it's clear that the telecom wars surrounding the 1996 Telecommunications Act are drawing to a close. Last year's decision by the D.C. Circuit to remand local loop access rules back to the FCC, and the Bush Administration's decision not to appeal it, effectively ended the prospect of local wireline telephone competition. The mergers are regrettable, but they are just the final shovels of dirt on the efforts of Congress to engender local telephone competition in the "96 Act. As one leading telecom analyst said, "This is the end of World War I—the Bells vs. AT&T and MCI. Now, World War II, among the phone, cable, and tech companies, is about to begin."

Upon completion of these acquisitions, SBC and Verizon will together control more than half of the national wireline business market. The mergers also guarantee these companies access to the large swaths of the vital Internet backbone now controlled by AT&T and MCI. While the Bells are likely to become increasingly competitive with cable companies, that industry is also highly concentrated within regional markets, and most consumers are able to choose only a single cable provider. Eventually, technologies such as broadband over power lines or satellite may offer high-speed Internet access alternatives to the cable and Bell duopoly, but these technologies are not mature and do not yet have a foothold in most markets. For the foreseeable future, most consumers will only have two wires coming into their homes, and these two wires will usually be the only reliable means of reaching the Internet and advanced telecommunications services.

However, a fortuitous development in the broadcast television industry will soon offer policymakers a unique opportunity to provide businesses and consumers additional choices for robust broadband access. In the next few years, analog television broadcast spectrum will be available for advanced communications services such as wireless broadband, and if properly managed could create vigorous competition and new entrants in the high-speed Internet access marketplace. It's essential for Congress and the FCC to develop policies that will encourage innovation, foster competition, and promote the deployment of new services.

For almost twenty years, policymakers, industry leaders, and others have developed a strategy for moving American television broadcasts from the existing analog system to an advanced digital format. Digital television allows for better reception, greater picture quality, and additional services for viewers. To allow for this transition, the "96 Telecom Act granted existing analog broadcast licensees spectrum for an additional broadcast channel to provide over-the-air digital programming. The 1997 Balanced Budget Act established a deadline of December 31, 2006 for broadcasters to relinquish their existing analog channels, but this deadline was subject to several conditions, the most important of which specifies that 85% of viewers in the broadcaster's market have televisions capable of receiving the digital signal. Since the 85% requirement has proved unworkable, the House Energy & Commerce Committee is now considering legislation that would establish a new deadline with transitional measures to accommodate viewers that do not have digital-ready televisions.

Ensuring a smooth transition that will not disenfranchise television viewers and will treat broadcasters, cable, and satellite providers fairly will undoubtedly prove to be a difficult task, but Members on both sides of the aisle are committed to achieving a swift, efficient move to digital TV. Achieving this transition will not be easy, but decades from now it will almost certainly be no more significant than the switch from black-and-white to color television.

Of far greater significance will be the manner in which we distribute the valuable 108 MHz of communications spectrum that will be relinquished by television broadcasters. This spectrum in the 700 MHz band is considered "beachfront" property by telecommunications carriers because wireless signals at this frequency range pass easily through buildings, trees, and other interference. Many policymakers are understandably preoccupied with the billions of dollars that auctions of this spectrum are likely to bring into the U.S. Treasury to offset our massive budget deficits. Our nation's fiscal situation is bleak, but this doesn't mean that we should disregard the long-term implications of this extensive redistribution of public communications spectrum.

The 700 MHz band offers a historic opportunity to provide the equivalent of a "third wire" into the home—an alternative to telephone or cable broadband access. Many Americans will be able to access the Internet through unlicensed spectrum and wireless community broadband services. However, the lion's share of investment capital and innovation will likely be dedicated to services offered over licensed spectrum controlled by commercial license holders. For most businesses and many consumers, the certainty, service, and reliability offered by a licensed provider will be preferable to relying on an unlicensed service.

We should be very concerned, however, that this new beachfront spectrum property doesn't become the new wing of the mega-hotels that already dominate the shoreline. If the bulk of the spectrum that becomes available is purchased by the existing cable or telephone duopolies, we will have lost a once-in-a-lifetime opportunity to create new competition and incentives for new entrants, innovation, and broader service offerings. It's critical for Congress to establish a spectrum policy for these auctions that favors new entrants and competitive services.

We must also keep our commitment to our country's police, fire, and rescue workers and provide the 24 MHz of spectrum allocated to them as part of the digital TV transition. First responders will be able to use this spectrum to employ advanced telecommunications services and address critical interoperability and capacity issues. We should also ensure that a portion of this spectrum is reserved for public or "unlicensed" use. Already, thousands of government and non-profit organizations provide Internet access through unlicensed portions of the spectrum through services such as community Wi-Fi. Reserving a meaningful portion of the 700 MHz band for services such as these will facilitate innovative services and technology, and also help advance our country toward universal broadband access.

Nearly all of our efforts in the digital television transition thus far have been dedicated to resolving the very difficult issues necessary to move television broadcasts from analog to digital, but the transition does not end when the analog broadcast stations go dark. How we utilize the valuable resource made available by this extraordinary event will shape the telecommunications landscape for decades to come.

Mr. UPTON. Mr. Pickering.

Mr. PICKERING. Mr. Chairman, just real quickly, thank you for this hearing. Thank you for your work, and the ranking member, and Chairman Barton. I believe it is a good beginning.

My only message today is that this is going to happen. The numbers for the committee and the fact that we have reconciliation means that no one can avoid this or escape this, and so we should all come to the table, reach an agreement, and just realize that if you don't come to the table, then it is not going to go away. It will happen, and I think that we can find an agreement with the broad consensus of all parties, and now is the time to begin.

With that, Mr. Chairman, thank you.

Mr. UPTON. Mr. Dingell.

Mr. DINGELL. Mr. Chairman, thank you. Thank you, Mr. Chairman, for holding this hearing. The transition to digital television is a complex undertaking. It has profound implications.

Mr. UPTON. Mr. Dingell, is your mic on?

Mr. DINGELL. I keep pushing this button, but nothing keeps happening. And worthy of careful review and consideration by this committee.

As today's witnesses will describe, there is much for this country to gain if the transition is done correctly. But there is much to lose if it is not. Although well intentioned, the draft legislation does not take steps necessary to ensure a consumer friendly transition. It raises several telecommunications policy issues of significant concern.

Including this legislation in the bipartisan reconciliation effort causes other problems. Given the stakes involved—the television sets that Americans depend upon every day for news, weather, and entertainment—it is of the utmost importance that this complex legislation receives the process that is due. We should not rush a bill through this committee simply because of budget or other artificial pressures. It is because of the budget pressures in 1997 that we are struggling to complete the digital transition the right way, and why we have wasted and lost a lot of money, and seen resources poorly applied.

Sound telecommunications policy cannot be achieved when a bill is being crafted for budget purposes, and I think that the history I have referred to again proves this to be so. Most, if not all, of us support a hard date to end the analog broadcasting so that we can return this valuable spectrum for public safety and new wireless uses, and to maximize the auction proceeds for the Treasury. I am sure we all want, as well, to see a hard date established in a way that will focus consumers' attention, and complete the analog to digital transition in as fast and least disruptive manner as possible. But we must also recognize that a hard date could have the very opposite effect. It could prolong the transition if it is not accompanied by a proper program to educate and equip the consumers, so that they are not disenfranchised by the actions of their government.

The Government Accountability Office estimates that almost 21 million households in America, disproportionately low income, nonwhite and Hispanic, rely exclusively on over-the-air broadcasting for their television viewing. Millions more may subscribe to satellite service, yet continue to receive their local stations using over-the-air antennas. Countless others have chosen to subscribe to cable or satellite for some television sets in their home, yet rely on over-the-air broadcasting for other sets. All told, it is estimated that if the government shut off analog broadcasting today, 73 million television sets would go dark.

This draft legislation does nothing to provide members of this committee any assurance that the transition will be smooth, and that it will be easy for millions of our constituents. This is primarily because the draft bill does not provide a well thought out program to help affected consumers to obtain the necessary equipment for their TVs in order to continue receiving television signals. Without such a program, the draft legislation imposes an unnecessary, and I predict, an enormously unpopular burden on millions of Americans, who will be forced to locate and purchase converter units at $50 to $70 per television set to keep their televisions working. I wonder how many of my colleagues will enjoy the mail and the phone calls that come to their office when this transpires.

The proper action for this committee to take, then, would be to agree that if we want a hard date to maximize the auction reve-

nues, we must be prepared to protect all affected consumers. The Congressional Budget Office estimates that the auction for the returned analog television spectrum and other provisions in this bill should raise $10 billion. Other private sector estimates show upwards of $28 billion. We should try for the higher number for the benefit of our taxpayers and constituents. These double digit figures deserve some serious dialog about how the committee, and how the leadership of the committee and the Congress, especially my Republican friends, will use that money. Will the proceeds from selling off the public airwaves be used only to cover transition expenses imposed on ordinary citizens, or will the proceeds help to pay for the $107 billion in new tax cuts for the well-to-do included in the Republican budget?

In conclusion, two fundamental questions must be answered. Why should ordinary citizens pay more because of a governmental decision that makes their television sets obsolete? And why can't the proceeds from the sale of the spectrum, which is a public good, be used to reimburse the citizens for their transition costs because of the actions of their government, and for other important telecommunications and public safety needs?

I look forward to the testimony today, and to addressing these and other questions as we consider the legislation. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Shimkus.

Mr. SHIMKUS. I will pass, Mr. Chairman.

Mr. UPTON. Mr. Engel.

Mr. ENGEL. Well, thank you, Mr. Chairman. Let me first say to the 11 witnesses about to testify. Your giving testimony before this subcommittee isn't the most difficult thing you have to do today, but listening to all of our opening statements certainly is.

I have long been saying that if our constituents turned their TV sets on and find no signal on a premature date certain, we can guarantee that our political careers will be ended on a premature date certain as well, so I think that we have to get this right. In that regard, I am glad that the date has been moved from December 2006 to December 2008, but there are still many questions.

As written, this bill does very little to protect consumers who are going to be impacted. The bill provides no subsidy to the people who rely on free, over-the-air TV. Why should they be put at a disadvantage because the Federal Government has made an industrial policy decision? The fact is, most over-the-air families are low income, and are predominantly minority. Considering this bill is estimated to raise $10 billion for the United States, we certainly will have the resources to help all affected Americans.

Let me also say, as a New York Member of Congress, I am disappointed that there is no flexibility in this bill for New York City. On September 11, most of our broadcasters lost their transmitters. They are now using the Empire State Building temporarily while waiting for the Freedom Tower to be constructed, but that will not be ready by the end of 2008. If broadcasters must upgrade Empire State to meet the deadline, it will cost approximately $40 million. Broadcasters, having spent that, will most likely stay on the Empire State Building, which is much shorter than the World Trade Center or the Freedom Tower will be. This will cause the New York

media market to shrink. There must be something in the bill that addresses this.

The bill also lacks any remedy to protect content in the digital age. The courts have thrown out the FCC's broadcast flag. Last week, many of us went to see the new Star Wars film. The next day, it was a preview. The next day, it was available on the Internet, and you could buy a DVD of it on the streets of Manhattan. That wasn't even broadcast. This isn't just about movie studio or record company profits. It is about the Nashville songwriters and the carpenters and cameramen keeping a paycheck coming in.

The truth, I am most disappointed about this, is that this is really a budget bill, not telecom policy bill. The rush to include it in the annual budget reconciliation bill, because it will help the Federal Government's bottom line, is frustrating. After years of cutting taxes and increasing spending, the budget deficit has ballooned. Our committee has fought to keep its jurisdiction. We should not be making massive changes to policy to cover years of bad budget and tax policy.

Mr. Chairman, this bill needs a lot of work. I hope we will resume bipartisan talks to do so. I look forward to the testimony today, and as always, I look forward to working with all of my colleagues. Thank you.

Mr. UPTON. I want to thank all members, and would make a unanimous consent request that members that are not here at the moment may be able to offer their statements as part of the record.

[Additional statements submitted for the record follows:]

PREPARED STATEMENT OF HON. PAUL GILLMOR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. Chairman, first, I want to thank you for holding this very important hearing and welcome the distinguished witnesses that have joined us today to discuss this pressing issue.

As we begin taking a serious look into the matter of completely shifting from an analog to a digital broadcast signal it will be important for us to take all viewpoints into consideration. This will allow for a truly comprehensive piece of legislation that once enacted into law will be unambiguous to industry members, provide certainty to our first responders and other government programs, and—most importantly—ensure that the American public is properly educated about the forthcoming changes.

After reviewing the staff draft, I was pleased to see that we now had a strong foundation from which to build a comprehensive piece of legislation. However, there is much work to be done. In my rural Ohio district, I have many constituents still reliant upon over-the-air broadcasts and have nothing more than a simple analog television. To ensure that rural America and those reliant upon a fixed income—such as our country's over 35 million senior citizens—are not cut off from television broadcasts, I believe that it will be necessary to have some form of a subsidy program in place to offset the cost of a set-top box converter that can cost anywhere from $50 to $100.

As the manufacturing sector of our economy continues to fight for survival in the world marketplace, we must not impose regulations upon those producing televisions and set-top boxes that make it more difficult and costly for them to bring a reliable and low-cost product to market. Finally, as Co-Chairman of the Public Broadcasting Caucus, I feel that it is incumbent upon this committee to find a way to integrate public broadcasters, and their important resources, into any DTV Transition legislation that passes the United States Congress.

Mr. Chairman, I look forward to hearing from our panel of expert witnesses, and to working with you, and all the members of this subcommittee, so that we might be able to craft a comprehensive and commonsense digital transition bill.

I yield back the balance of my time.

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

Thank you Mr. Chairman for a hearing on this legislation. I support this legislation, but also feel that there are a number of issues that need to still be addressed. I hope the Committee can try to address these issues, either in this legislation or in other legislation to come before the Committee this year.

First, I think it is important that we find a way to make sure consumers can receive a digital signal, whether it be through a direct subsidy or some other way.

I believe there needs to be some language dealing with "multi-cast must carry". I don't think we need to go as far as giving every broadcaster 6 digital stations that must be carried, but I do believe there is an answer out there that will allow the must carry of some digital signals, especially those that are in the public good.

I would also hope at some point that the Committee can address the issue of "retransmission consent". While the cable industry should be congratulated for their efforts to educate parents on how to control what their children view, I believe more needs to be done. I voted against a la carte language because I think it would have resulted in higher prices and less choice for consumers. I realize extending indecency standards to cable and DBS would not survive a legal challenge. But I believe opening up how retransmission consent agreements are negotiated, will shed light on this issue and allow communities to better decide what kind of content is showing in their areas.

It is also important that the Committee address the broadcast flag issue in some way. The Courts held that the FCC did not have the authority under current law to adopt the rule, but did NOT dispute the merits of the Broadcast Flag.

In the end, the winners in this debate need to be the public safety community and the consumers. I believe this draft legislation starts us down that path.

PREPARED STATEMENT OF HON. MIKE FERGUSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

I would like to congratulate Chairmen Barton and Upton for providing a solid starting point for American consumers to make a full transition to digital television.

This discussion draft moves the transition forward significantly, most importantly setting a definitive hard date of December 31, 2008. This date, which is fair will provide long-needed certainty to all industries affected, and most importantly to the American consumer.

To that effect, this draft places a premium on consumer education, placing the responsibility squarely on industry, retailers, manufacturers and government for preparing our constituents for the transition from analog to digital broadcasts. And the hard date established will provide ample time for this Committee to implement a thoughtful, fiscally responsible set top box subsidy program.

As we move forward, we need to ensure that consumers are not unnecessarily inconvenienced during the transition, making sure that no televisions "go dark" after the transition. However, this needs to be done in a way that provides industry with the flexibility it needs to make certain that all consumers continue to enjoy the same programming the day after the DTV transition as the day before without displacing other valuable programming that they want.

Most importantly Mr. Chairman, this legislation sets a definitive date for making spectrum available for our first responders. The new spectrum will help our firefighters, police officers and other first responders to achieve communications interoperability, and better respond to the safety needs of my constituents in the 7th district of New Jersey and across this nation.

One additional point I would like to make is an item not included in this draft, but nevertheless is an important part of the digital transition—the Broadcast Flag rule that was recently vacated on jurisdictional grounds by the DC Circuit. Ensuring that content is protected from piracy is not something we will consider today, but is an issue our subcommittee should deal with in a timely way.

Again, thank you to Chairmen Barton and Upton for putting forward a thoughtful proposal for the digital transition. I look forward to hearing the views of the many witnesses present here today.

PREPARED STATEMENT OF HON. JOHN SULLIVAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OKLAHOMA

Thank you, Chairman Upton, for calling this hearing. I look forward to hearing from each of our witnesses today.

We live in an interconnected world, and this debate is further proof of the responsibilities citizens of a democracy hold to one another. While the details of this draft may be contentious, the fact is that both Democrats and Republicans support the existence of a hard date for broadcasters to return their analog spectrum. This has been a goal for the industry for nearly ten years. Without a hard date, we could very well be waiting for another ten years, or longer, to achieve this goal. The overall social goal here is to provide additional spectrum for law enforcement and to further our nation's economy through advanced commercial services by the auction of the returned spectrum. We must bring clarity to the marketplace so that consumers, industry and government can plan. The public safety, technological, and economic benefits of completing the DTV transition can wait no longer.

The flip side of this debate is the subsidy for set top boxes for those Americans who only receive over-the-air signals. Given the government mandate of the digital transition, Congress must respect the taxpayer's pocketbook and enact only the most minimal federal subsidy possible. Those who are truly in need should receive help; those who can provide for themselves should do so.

Let us not forget the reasons why the hard date is so important. Twenty-four megahertz of the spectrum the broadcasters return has been earmarked for public safety use. In a post-9/11 world, this is a critically important national security goal. Another 60 MHz will be available for auction for advanced commercial services, such as wireless broadband. Since the U.S. is 13th worldwide in broadband deployment, this will be of great benefit to the U.S. in catching up with countries such as Korea, Canada, Germany, Sweden, Belgium and Italy.

Again, Chairman Barton and Chairman Upton, thank you for your leadership on this issue.

PREPARED STATEMENT OF HON. BART STUPAK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Thank you, Mr. Chairman, for your work on the difficult issue of the digital television transition and for holding this hearing on a "discussion draft" before legislation is introduced.

This is high stakes legislation. We are talking about people's televisions. I think every member of Congress knows that people are passionate about their television programming and television sets.

If we thought the public's uproar about indecency after the Super Bowl was loud, just imagine what will happen if Americans in 21 million households wake up on January 1, 2009, and find they can't watch their college bowl games because their televisions don't work.

I have a very rural, low-to-middle income district, and I am worried that once my constituents hear they have to purchase set-top boxes—at $50 or more a pop—they'll be throwing their set top boxes at me.

Consumers didn't ask for this transition, for these added costs, or for their televisions to be made obsolete. Unless we want those set top boxes thrown at us, Congress had better meet its obligation to consumers and make the transition as inexpensive and least burdensome to consumers as possible.

While I am encouraged by the consumer education provisions in this legislation, I am disappointed that there is absolutely no mention of help for consumers who get their television over-the-air. These households are more likely to be low-income (household income below $30,000). Many of these households are in my district!

Congress can't just tell over the air viewers to go out and get cable or satellite. 41% of over-the-air viewers can't afford to buy cable or satellite. And many households in rural America don't have access to cable.

The fact is that Congress has a tall order ahead of itself to even convince consumers that this transition is good thing. I know for certain that a bill that places the financial burden of the transition, which consumers never asked for, squarely on consumers is never going "to fly" with in my district.

As Members of this committee, we need to recognize the challenges we face. There are great opportunities to be realized if and when we can meet these challenges correctly and speed the transition. Giving back the spectrum will yield great benefits for public safety and for rural America. Wireless broadband holds great promise for rural America. That promise is beginning to be realized in my district where wi-fi projects are popping up all over.

I am interested in hearing from the witnesses about ways we can best speed the deployment of wireless broadband to rural America.

Important public safety opportunities are also at stake. As a former law enforcement officer, I have long held concerns about the ability of our nations' first responders to communicate.

Public safety interoperability is critical: the inability of first responders from different agencies to talk to one another was a key factor in the deaths of at least 121 fire fighters on September 11th.

The bottom line is that today's first responders need both more spectrum and more money to become fully interoperable. This transition could help public safety officials accomplish both those goals.

The opportunities are great, but the challenges are greater. We need to meet those challenges head on, with meaningful solutions and actual dollars, if we ever have a hope for the American public to buy-into the benefits of the transition: wireless broadband and public safety communications interoperability.

Mr. UPTON. And we are now prepared to listen to our panel, and I did choose to have one panel, so that we would have only one round of opening statements, and we would be able to bounce our questions and answers off all of you, and not put some of you at a disadvantage by not being here.

So we are joined on my far left by Mr. Rick Chessen, Chair of the DTV Task Force, from the Federal Communications Commission; Mr. Mark Goldstein, Director of the Physical Infrastructure Team of the Government Accountability Office, the GAO; Mr. Gary Shapiro, President and CEO of the Consumer Electronics Association; Mr. James Yager, CEO of Barrington Broadcasting Company, on behalf of the National Association of Broadcasters; Mr. Kyle McSlarrow, President and CEO of National Cable & Telecommunications Association; Mr. Manuel Abud, Vice President and General Manager of Telemundo in Los Angeles; Mr. Alan McCollough, Chairman and CEO of Circuit City, on behalf of the Consumer Electronics Retailers Coalition; Mr. Patrick Knorr, Vice Chairman of Sunflower Broadband, on behalf of the American Cable Association; Mr. Steve Souder, Director of the Montgomery County, Maryland 911 Emergency Communications Center; Mr. Gene Kimmelman, Senior Director of Public Policy from the Consumers Union; and last but not least, Mr. Peter Pitsch, Communications Policy Director of Intel Government Affairs, here in Washington, DC.

Gentlemen, your statements have been made part of the record in their entirety, and we would like to do is limit your remarks to no more than 5 minutes, and I don't know if here is a little clock on the table. Is that on from your side? It is not on. Well, we will—while you are speaking, we will get someone to turn it on, and Mr. Chessen, we will start with you. Welcome.

STATEMENTS OF RICK CHESSEN, CHAIR, DTV TASK FORCE, FEDERAL COMMUNICATIONS COMMISSION; MARK L. GOLDSTEIN, DIRECTOR, PHYSICAL INFRASTRUCTURE TEAM, GOVERNMENT ACCOUNTABILITY OFFICE; GARY J. SHAPIRO, PRESIDENT AND CHIEF EXECTUIVE OFFICER, CONSUMER ELECTRONICS ASSOCIATION; K. JAMES YAGER, CHIEF EXECUTIVE OFFICER, BARRINGTON BROADCASTING COMPANY, LLC, ON BEHALF OF NATIONAL ASSOCIATION OF BROADCASTERS; KYLE E. MCSLARROW, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION; MANUEL ABUD, VICE PRESIDENT AND GENERAL MANAGER, TELEMUNDO LOS ANGELES; W. ALAN MCCOLLOUGH, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, CIRCUIT CITY STORES, INC., ON BEHALF OF CONSUMER ELECTRONICS RETAILERS COALITION; PATRICK KNORR, VICE CHAIRMAN, SUNFLOWER BROADBAND, ON BEHALF OF AMERICAN CABLE ASSOCIATION; STEVE SOUDER, DIRECTOR, MONTGOMERY COUNTY, MARYLAND 911 EMERGENCY COMMUNICATIONS CENTER; GENE KIMMELMAN, SENIOR DIRECTOR OF PUBLIC POLICY, CONSUMERS UNION; AND PETER K. PITSCH, COMMUNICATIONS POLICY DIRECTOR, INTEL GOVERNMENT AFFAIRS

Mr. CHESSEN. Thank you. Chairman Upton, Ranking Member Markey, and members of the subcommittee, I am pleased to be here today.

I am the Chair of the FCC's DTV Task Force, and have been since its inception in October 2001. At the time, the transition was still in its early stages and struggling to take off. Indeed, some openly wondered whether the transition would ever happen at all.

As today's hearing indicates, times have changed, and we are no longer discussing whether the transition will end but when and how it will end as quickly and smoothly as possible for the American public.

There is plenty of credit to go around. Each of the affected industries, many of whom are at this table with me today, deserve some of the credit for bringing us to this point. They developed the business plans, invested the capital, and are bringing the benefits of digital television to the American consumer.

The government has been working hard as well. Over the past few years, both Congress and the FCC have demonstrated a renewed sense of urgency, doing whatever was needed to get the transition moving. Often informal tools were used, like the industry roundtable discussions convened by this committee that helped define and focus the issues. When necessary, the FCC used more formal regulatory tools, such as the DTV tuner mandate, rules for plug and play television sets, and penalties for broadcasters that failed to meet their build-out obligations.

But we still have much work to do. At the FCC, we have begun the extremely complicated task of developing a Final Table of DTV channel allotments. That process is currently scheduled to be completed by mid 2007. We are also working on, among other things, digital must-carry rules for cable and satellite providers, overseeing deadlines for the DTV tuner mandate, and for broadcasters to build

out to full power, and assisting low power and TV translator stations in their own transition to digital.

Even with much to do, it is not too early to begin planning for the end of the transition. The more certainty we can provide, and the sooner we can provide it, the smoother the eventual switchover will be for consumers and industry alike, and the more efficiently public safety officials and advanced wireless service providers will be able to make use of the reclaimed broadcast spectrum.

At the FCC, we stand ready to assist in any way we can. The draft legislation is another important step in addressing some of the outstanding issues before us, particularly on the issues of setting a hard date, and educating the public about how to prepare itself for the switchover. We look forward to working with this committee as we continue to make progress toward bringing the DTV transition to a speedy and successful conclusion, and I would be happy to answer any questions you might have.

Thank you.

[The prepared statement of Rick Chessen follows:]

PREPARED STATEMENT OF RICK CHESSEN, CHAIR, DTV TASK FORCE, FEDERAL COMMUNICATIONS COMMISSION

Chairman Upton, Ranking Member Markey, and members of the Subcommittee, I am pleased to appear before you today as you consider potential changes to the statutory framework for the digital television transition.

My name is Rick Chessen. I am Chair of the FCC's DTV Task Force, and have been since its inception in October 2001. At the time, the transition was still in its early stages, and struggling to take off. Indeed, some openly wondered whether the transition would ever happen at all.

As today's hearing indicates, times have changed. We're no longer discussing whether the transition will end but *when* and *how* to end the transition as quickly and smoothly as possible for the American public.

There is plenty of credit to go around. Each of the affected industries—broadcasters, cable and satellite operators, content providers, consumer electronics manufacturers and retailers—deserve some credit for bringing us to this point. They developed the business plans, invested the capital, and are bringing the benefits of digital television to American consumers.

Government deserves some of the credit as well. Over the past few years, both Congress and the FCC have demonstrated a renewed sense of urgency, doing whatever was needed to get the transition moving. Often informal tools were used, like the industry roundtable discussions convened by this Committee that helped define and focus the issues. When necessary, the FCC used more formal regulatory tools, such as the DTV tuner mandate, rules for "plug and play" television sets, and penalties for broadcasters that failed to meet their build-out obligations.

But we still have much work to do. My statement will outline some of the steps that the FCC has taken to further the transition, as well as provide a status update on several of the pending proceedings

FIRST DTV PERIODIC REVIEW

One of the first major actions the Commission took after formation of the DTV Task Force was to reconsider some decisions made in the First DTV Periodic Review. These "mid-course adjustments" were necessary in order to maximize the number of DTV stations on the air and to provide incentives for consumers to purchase DTV equipment. In that Reconsideration Order, adopted November 8, 2001, the Commission permitted stations to initially build lower-powered—and less expensive—DTV facilities, while retaining the right to expand coverage as the transition progressed. The Commission deferred replication and/or maximization requirements on stations, and also deferred requirements regarding the channel election process. However, the Commission declined to modify the deadlines for stations to be on the air with a digital signal, and refused to issue a blanket extension of remaining DTV construction deadlines. The result was that many more commercial and non-commercial stations were on the air with a digital signal (whether it was at licensed facilities or pursuant to a special temporary authority) by the May 1, 2002 and May

1, 2003 deadlines, respectively. From there, the number of stations on the air has continued to grow. As of April 7, 2005, 1,497 (or 87%) of the TV stations (both commercial and noncommercial) were on-the-air either with licensed DTV facilities or with special temporary authority.

SECOND DTV PERIODIC REVIEW

The Commission adopted the Second DTV Periodic Review Report and Order on August 4, 2004. Among other things, the Order: (1) established firm deadlines for digital stations to increase their power levels to either replicate or maximize their service areas, or lose the interference protection for those unserved areas; (2) required PSIP information in digital broadcast signals in order to promote closed captioning, v-chip, channel numbering and other functionality; and (3) established a channel election process that will result in a Final DTV Table of Allotments.

CHANNEL ELECTION PROCESS

On February 10, 2005, nearly all TV broadcasters filed an election for their channel preference for final DTV operations. In this first round of elections, most stations chose to operate on their existing DTV channel. Several hundred chose to operate on their existing NTSC channel. Fifty stations chose to defer their decision to the second round of elections. Twenty stations did not participate because both of their allotments were out of the "core" DTV spectrum (i.e. TV channels 2—51). These stations will elect in the second round as well.

The Commission's goal is to complete the required interference analysis of these first round elections and issue tentative channel designations by the end of this summer, and have the second round of elections in the fall. Round three elections would occur in early 2006, with a Notice of Proposed Rulemaking proposing a new DTV Table of Allotments by August 2006.

The channel election process is a complex undertaking involving not only domestic interference analysis for all stations, but also requires international coordination for those stations in the Northern and Southern border zones. At this point, the FCC's International Bureau currently is working on existing international coordination issues. There likely will be additional coordination necessary for a number of stations in the border zones that elected to retain their NTSC channels or those that elected to participate in round two elections, as well as the border zone stations that have both allotments out of core. It is anticipated that international coordination for those stations will begin as soon as the FCC's Media Bureau has cleared them domestically and issued tentative channel designations.

DIGITAL CARRIAGE ISSUES

One of the most important issues regarding the DTV transition is how over-the-air broadcast stations are carried on multichannel video program distributors ("MVPDs"). A substantial majority of television households in most markets subscribe to either cable or satellite service. Thus, resolving the carriage issues will help facilitate the overall transition. The Commission recently issued a decision regarding dual carriage and multicast carriage issues as they relate to cable operators. In that decision, the Commission determined that the record did not support establishing either dual carriage obligations during the transition or multicast carriage requirements on cable operators. Several Petitions for Reconsideration were filed after the release of the Report and Order. The Commission still needs to address several issues related to cable carriage, including what constitutes material degradation of the broadcaster's signal. Additionally, the Commission is still considering how to define the digital carriage obligations for satellite carriers.

LOW POWER TELEVISION, TV TRANSLATORS, AND CLASS A STATIONS

There are approximately 2,100 LPTV stations and 4,700 TV translators operating in analog today. These LPTV stations and translators are secondary services to full-power stations and other primary services. Thus, these types of stations, which do not operate on channels in an allotment table, can continue operating as long as they do not cause interference to full-power stations or other primary service operations.

The first step in the digital transition for analog TV translator and LPTV stations was taken in the adoption of the LPTV Digital Order on September 9, 2004. In that Order, the Commission outlined the existing options for translator stations to make the transition. As option one, any station on any channel may "flashcut" to digital on its analog channel at any time without waiting for the full power elections. Further, stations proposing to "flashcut" on channels 63, 64, 68, or 69 (the public safety

channels) must secure a "coordinated use" agreement with state and regional public safety representatives. By law, however, stations operating on channels 60-69 must vacate these channels by the end of the full service transition, and find another channel to operate on.

As option two, any station licensee or permittee may apply for a digital "companion" channel in a window to be opened in the future, but may not apply for a companion channel in the 60-69 channel band. Any station proposing digital operations on channels 52-69 must notify potentially affected 700 MHz commercial wireless and public safety licensees before filing their application.

There are approximately 600 Class A stations with enhanced spectrum rights. In an earlier proceeding that created the Class A service, these stations were permitted to "flashcut" to digital. They will also be eligible to apply for a digital companion channel.

The Commission has recognized that it may not be possible for many of these low power stations to find companion channels until the end of the full-power transition, and thus, that the transition for these stations may extend beyond the end date for the full-power transition. The final transition date of low power stations will be considered in the Commission's Third DTV Periodic Review.

DTV TUNER MANDATE

On August 8, 2002, the Commission adopted an Order that required digital TV tuners to be included in nearly all new TV sets by July 1, 2007. The Commission's mandate, and its authority under the 1962 All Channel Receiver Act, was upheld by the Court of Appeals for the D.C. Circuit.

The mandate required that all TV receivers with screen sizes greater than 13 inches and all television receiving equipment such as video cassette recorders (VCRs) and digital versatile disk (DVD) players/recorders, have DTV reception capability as of July 1, 2007. The mandate adopted a phased-in schedule, starting with the largest sets in an effort to minimize the costs for equipment manufacturers and consumers. Currently, the FCC has a pending Notice of Proposed Rule Making seeking comment on whether to modify the schedule and is poised to take action in this proceeding in the near term.

CABLE "PLUG AND PLAY" RULES

On September 10, 2003, the Commission adopted rules for "one-way" digital "plug and play" cable compatibility. The rules enable consumers to purchase DTV sets that allow them to receive on-way cable programming without the need for a set-top box. Consumers must obtain a security card from their local cable operator to be inserted in the TV set to view scrambled programming. Currently, industry negotiations are on-going regarding "two-way"/interactive plug and play receivers.

BROADCAST FLAG

On November 4, 2003, the Commission adopted the redistribution control mechanism known as the "broadcast flag." The goal was to foster the digital transition by preventing mass redistribution of broadcast content over platforms like the Internet, while ensuring that consumers' ability to make copies of such content was not affected. If broadcast content could not be protected from mass redistribution over the Internet, the FCC recognized that high-value digital content would migrate to distribution systems like cable and satellite, where it could be protected. However, the FCC's decision was overturned by the Court of Appeals for the D.C. Circuit on May 6, 2005. The court determined that the Commission lacked the statutory authority to impose the regulations.

CHILDREN'S PROGRAMMING OBLIGATIONS

On September 9, 2004, the Commission adopted rules regarding broadcasters' children's programming obligations in the digital world. Among other things, the Order addresses how the current three-hour children's core educational programming processing guideline should apply to a DTV broadcaster that chooses to multicast. The Order increases the amount of the core programming guideline proportionally to the increase in free video programming offered by the broadcaster on multicast channels. The revised guideline provides flexibility to broadcasters that multicast by permitting them the choice whether to air core programming on a single or multiple channels, provided that at least three hours per week are shown on their main channel. The new guidelines will become effective after a one year phase-in period. The Order also applies the same commercial time limits placed on digital

children's television programming that exist for analog children's television programming.

CONSUMER EDUCATION

The FCC's Consumer and Governmental Affairs Bureau is actively engaged in a consumer outreach campaign designed to educate the public on the digital television transition. The Commission has established a special webpage (www.dtv.gov) that provides detailed information on the transition itself, including a Tip Sheet that was designed in coordination with the Consumer Electronics Association ("CEA") and Consumer Electronics Retailers Coalition ("CERC"). Several major retailers are making this tip sheet available in their stores and on their web sites. The Bureau will continue to do outreach to all segments of the population to help ensure that the public is aware of the digital transition and how to prepare themselves for the end of analog broadcasting.

It is not too early to begin planning for the end of the transition. The more certainty we can provide—and the sooner we can provide it—the smoother the eventual switch-over will be for consumers and industry alike, and the more efficiently public safety officials and advanced wireless service providers will be able to make use of the reclaimed broadcast spectrum.

At the FCC, we stand ready to assist in any way we can. The draft legislation is another important step in addressing some of the outstanding issues before us, particularly on the issues of setting a hard date and educating the public about how to prepare itself for the switch-over. We look forward to working with this Committee as we continue to make progress toward bringing the DTV transition to a speedy and successful conclusion. I am happy to answer any questions you may have.

Mr. UPTON. Wow. Two and a half minutes. And that is with the clock not working. Maybe we should do this more often.

Mr. Goldstein.

STATEMENT OF MARK L. GOLDSTEIN

Mr. GOLDSTEIN. Thank you, Mr. Chairman, and members of the subcommittee.

I am pleased to be here today to report on our work on the challenges to and the options for a DTV equipment subsidy program to accelerate the DTV transition. Because the transition's end is, in part, dictated by consumers' adoption of digital television equipment, encouraging households' purchase of this equipment could help to speed the recapture of highly valued spectrum. While the purchase of digital televisions is steadily increasing, it nevertheless appears unlikely that a sufficient proportion of households will have digital television equipment in place by the end of 2006, the date originally set by Congress as a goal for the transition's end.

Those households relying exclusively on over-the-air television signals may be the most vulnerable to the loss of television service, because they must have certain equipment in place to be able to view digital broadcast signals, whereas cable or satellite subscribers will not necessarily need to take immediate action, depending on how the provider transmits those television signals. Some have suggested that the government provide a subsidy to certain households to purchase set-top boxes that can receive digital broadcast television signals and convert them into analog signals, so that they can be displayed on existing analog television sets.

Today, we will discuss challenges to and options for administering a subsidy program for DTV equipment, examples of rebate and voucher programs, and other efforts necessary for the completion of the DTV transition. As we developed this work, no specific option for administering a DTV subsidy was formed, and as such, our work focused on the possible challenges to a hypothetical pro-

gram. As in our previous work, we take no position on whether a subsidy should be implemented or not, or whether, if a subsidy program is established, it should be implemented in any particular way.

In summary, we found that several administrative challenges might arise in implementing a subsidy for DTV equipment, including making determinations about which Federal entity would administer a subsidy program, whether rulemaking process would be necessary to fully determine and stipulate how the subsidy program will be structured, who would be eligible to receive a subsidy, what equipment would be covered, how information about the subsidy would be communicated to consumers and industry, and what measures, if any, would be taken to limit fraud. Some of these issues could be particularly difficult to address.

Several administrative options could be used to provide a government to help households obtain DTV equipment. The four options for administering a DTV subsidy that we have reviewed are a refundable tax credit, government distribution of equipment, a voucher program, and a rebate program. We found that the suitability of any of these methods depends on aspects of the subsidy's design, such as which entity is most appropriate to administer the subsidy, and who would be eligible to receive the benefit. For example, if the DTV subsidy were only available to low-income households, a voucher might be a possible method to deliver the subsidy. Alternatively, if the subsidy is more widely available, a rebate might provide a good delivery mechanism.

Various government programs make use of rebates or vouchers to subsidize consumers' purchase of equipment and products. We reviewed three local government rebate programs and three voucher programs. For the programs we reviewed, we found differences existed between the rebates and vouchers programs that might provide insight for development of the DTV subsidy. Regarding eligibility determinations, we observed that eligibility for the voucher programs was specifically defined, and the benefits were targeted to low-income individuals, whereas eligibility for the rebate programs was not based on income. Overall, however, we found that these programs differed substantially with respect to what might be undertaken for a DTV subsidy.

There are other aspects of the DTV transition, not related to the implementation of a possible subsidy program, that are ongoing, and will take time to complete, or may pose their own challenges. For example, the channel election process, which will determine the channel placement for each television station's digital signal, is ongoing. According to FCC, all stations' final selections will not be set until some time in 2007. Another example of an issue that may arise, with DTV transition progresses related—relates to antennas used to receive digital broadcast signals. While many stakeholders we interviewed told us that antennas used for analog over-the-air reception should work well for the digital broadcast signal, a few stakeholders told us that reception will depend on geographic and topographic factors, and that some people may need new antennas or adjustment of existing antennas.

In conclusion, many aspects of a potential DTV subsidy program need consideration, and various determinations about its design

will affect the suitability of the administrative method used to deliver the subsidy. Given the importance of the DTV transition, it appears essential for knowledgeable officials from government and industry to work together to find the best means to address any issues that might impede progress in completing the DTV transition, and the associated reclamation of valuable radiofrequency spectrum.

Our work on the DTV transition continues for this committee, and we will provide more information in a report later this year.

Mr. Chairman, this concludes my prepared statement.

[The prepared statement of Mark L. Goldstein follows:]

PREPARED STATEMENT OF MARK L. GOLDSTEIN, DIRECTOR, PHYSICAL INFRASTRUCTURE ISSUES, UNITED STATES GOVERNMENT ACCOUNTABILITY OFFICE

Mr. Chairman and Members of the Subcommittee: I am pleased to be here today to report on our work on the challenges to and the administrative options for implementing a subsidy program for consumers to purchase digital television (DTV) equipment. As you know, the return of radiofrequency spectrum used for analog broadcast television at the end of the DTV transition will provide many benefits to society, such as easing the spectrum scarcity facing public safety first responders, engendering economic growth and consumer value from spectrum redeployed to wireless services, and affording the federal government revenues from the proceeds of a spectrum auction. Under the law, the transition's end is, in part, dictated by consumers' adoption of digital television equipment. While the purchase of digital televisions is steadily increasing, it nevertheless appears unlikely that a sufficient proportion of households will have digital television equipment in place by the end of 2006—the date originally set by Congress as a goal for the transition's end.

Households viewing television solely through the reception of over-the-air signals must take action to ensure that they have the necessary equipment to be able to view digital broadcast signals before the transition occurs and analog broadcast signals are shut off. If they do not take such action, they will lose television service. Consequently, the DTV transition imposes costs on some American households, assuming those households purchase equipment capable of receiving digital television signals to avoid the loss of television service. In February we reported to this Subcommittee that of the roughly 21 million households in the United States that rely exclusively on over-the-air television, nearly half have incomes under $30,000. Cable and satellite subscribers might also, at some point, need to upgrade their equipment—and thus incur costs related to the DTV transition—in order to be able to continue to receive broadcasters' digital signals through their subscription providers.

In order to spur households' adoption of the digital equipment necessary for the transition, some have suggested that the government provide a subsidy to certain households to purchase a device, known as a set-top box, that can receive digital broadcast television signals and convert them into analog signals so that they can be displayed on existing analog television sets. This device—which several manufacturers have stated could sell for as little as $50[1] once they are produced in high volume—would enable the household to view digital broadcast signals without purchasing a digital television set.[2] To the extent a subsidy facilitates the DTV transition, it might be advantageous for several reasons, such as (1) promoting a more rapid reclamation of valuable radiofrequency spectrum for other uses, which could spur economic growth and improve public safety, (2) possibly increasing government revenues from spectrum auctions by ensuring that companies that bid on spectrum can more quickly and with greater assuredness claim unencumbered spectrum, and (3) minimizing any loss in television service that households might suffer because they have not yet obtained necessary equipment for receiving digital broadcasts. At the same time, policymakers might consider these benefits in relation to other contexts in which policy decisions of the federal government have imposed costs and burdens on Americans *without* compensation. We believe while it is difficult to measure the specific benefits and costs of undertaking a specific DTV subsidy program, it is also difficult to evaluate the suitability of subsidizing the costs imposed

[1] Set-top boxes that have enhanced features, such as digital video recorders and output of high definition signals, would be more costly.

[2] Viewers using such a set-top box would not actually be viewing the channels digitally, but would be viewing the broadcasters' digital signals after they have been downconverted to analog.

by this particular government policy relative to other policies that have also imposed costs on citizens.

While there may be other policy options to spur the DTV transition, my testimony today only will focus on the use of a DTV equipment subsidy program. In particular, I will discuss the challenges to and several administrative options for a possible subsidy program. As we developed this work, no specific option for administering a DTV subsidy was formed, and as such, our work focused on the possible challenges to a hypothetical program. As in our previous work, we take no position on whether a subsidy should be implemented or not, or whether, if a subsidy program is established, it should be implemented in any particular way.

In February we testified before this Subcommittee and provided estimates of the cost of a subsidy for set-top boxes using data on household television characteristics and expected set-top box costs. Today we will discuss (1) some challenges to administering a subsidy program for DTV equipment, (2) some administrative options for implementing a DTV subsidy, (3) examples of government programs that make use of rebates and vouchers to provide subsidies, and (4) some other efforts necessary for the completion of the DTV transition. In addition to information provided in this testimony, we will provide a more detailed study on these and other issues related to the DTV transition for the Committee later this year.

To address the issues we will discuss today, we interviewed federal and state government officials who have experience in providing assistance to individuals or households through various subsidy programs. The agencies we contacted include the Department of the Treasury, the Department of Agriculture's Food and Nutrition Service, the Department of Health and Human Services, and state social service agencies from Alabama, Illinois, Maryland, and Texas. These states were chosen to represent varied demographic and geographic characteristics. We also spoke with companies in several key industry segments including nine electronics manufacturers, four electronics retailers, and a rebate fulfillment house (a company that processes rebates for manufacturers and retailers). Additionally, we interviewed a rebate and retail promotion expert, an academic who has studied consumer rebate redemption behavior, and representatives from the Promotion Marketing Association. We also contacted a company that provides identification and credential verification services. For general information about the DTV transition, we spoke with seven broadcasters, three cable and satellite companies, and five television station owners. We also had several meetings with Federal Communications Commission (FCC) staff and various industry trade groups, such as the National Cable & Telecommunications Association, the Satellite Broadcasting and Communications Association, the Consumer Electronics Association, the National Association of Broadcasters, and the American Cable Association. We obtained information on government programs that used rebates or vouchers from program administrators and other sources. We contacted the National Telecommunications and Information Administration (NTIA) to ask questions about their views on the administration of a DTV subsidy program, but an agency official stated that they had no official comment.

We conducted our work from August 2004 to May 2005 in accordance with generally accepted government auditing standards. We discussed this testimony with FCC officials to obtain their comments. FCC provided technical corrections that we incorporated where appropriate.

In summary:

• We found that several administrative challenges might arise in implementing a subsidy for DTV equipment. Key issues we identified include challenges related to making determinations about (1) which federal entity would administer a subsidy program, (2) whether a rulemaking process would be necessary to fully determine and stipulate how the subsidy program will be structured, (3) who would be eligible to receive a subsidy, (4) what equipment would be covered, (5) how information about the subsidy would be communicated to consumers and industry, and (6) what measures, if any, would be taken to limit fraud. Some of these issues could be particularly difficult to address. For example:

• If the subsidy were only available to low-income households, a possible method of identifying these households would be to use receipt of some other low-income assistance—such as food stamps—to identify those eligible for the DTV subsidy. A drawback to this approach, however, is that agencies overseeing such programs may not be allowed to release lists of their recipients to others. If the subsidy is only provided to households that rely exclusively on over-the-air television, the identification of these households may be difficult because no list of such households exists, and information on the inverse—those households that subscribe to cable or satellite service—is dispersed across hundreds of providers in the country, and these providers may also face limitations on the release of their subscribers' lists to others.

• Another key challenge would be to make sure that eligible recipients understand that a subsidy is available to them, how they can obtain it, which equipment the subsidy can be used for, and where they can obtain the equipment. Effectively communicating this information would likely first require that information about the broader DTV transition is effectively communicated to the public. Three years ago we found that many Americans did not have an awareness of the DTV transition. Recently, the Consumer Electronics Association reported that knowledge of DTV is increasing. Our interviews with several retailers and manufacturers, indicated, however, that while consumers are more familiar with the concept of high-definition television, many are still confused or unaware that at some point in the future analog television will cease operation and analog televisions sets will not be able to receive digital over-the-air television signals.

• Several administrative options could be used to provide a government subsidy to help households obtain DTV equipment. The four options for administering a DTV subsidy that we reviewed are a refundable tax credit, government distribution of equipment, a voucher program, and a rebate program. We found that the suitability of any of these methods depends on aspects of the subsidy's design, such as which entity is most appropriate to administer the subsidy and who would be eligible to receive the benefit. For example, if the DTV subsidy were only available to low-income households, a voucher might be a possible method to deliver the subsidy. Alternatively, if the subsidy is more widely available, a rebate might be a good delivery mechanism.

• Various government programs make use of rebates or vouchers to subsidize consumers' purchase of products. We reviewed three local government rebate programs that provide incentives for furthering environmental policy goals and three voucher programs, including one state program that subsidizes equipment for deaf and hard of hearing individuals and two federal programs that provide assistance to needy households to purchase food. For the programs we reviewed, we found differences existed between the rebates and vouchers programs that might provide insight for the development of DTV subsidy. Regarding eligibility determinations, we observed that eligibility for the voucher programs was specifically defined and the benefits were targeted to low-income individuals, whereas eligibility for the rebate programs was not based on income. Overall, however, we found these programs differed with respect to what might be undertaken for a DTV subsidy. Further, choosing not to participate in any of the programs we reviewed would not cause a household to lose any existing service or functionality. In contrast, if a household relying exclusively on over-the-air television chose not to take advantage of a DTV subsidy for which it is qualified, and then did not obtain the necessary equipment to receive broadcast digital signals, the household would lose access to broadcast television signals when the transition occurs.

• If a subsidy program is implemented, it will pose many challenges for the implementing agency and industry. However, there are other aspects of the DTV transition not related to the implementation of possible subsidy program that are ongoing and will take time to complete or may pose their own challenges. For example, the channel election process, which will determine the channel placement for each television station's digital signal, is ongoing. Because a proposed rulemaking will follow the end of this selection process (scheduled to be completed in August 2006), all stations' final selections will not be set until sometime in 2007, according to an FCC official. Another example of an issue that may arise as the DTV transition progresses relates to antennas used to receive digital broadcast signals. While many stakeholders we interviewed told us that antennas used for analog over-the-air reception should work well for the digital broadcast signal, a few stakeholders (including an antenna manufacturer, a broadcaster, and a retailer) told us that reception will depend on geographic and topographic factors and that some people may need new antennas or adjustment of existing antennas.

BACKGROUND

The United States is currently undergoing a transition from analog to digital broadcast television. With traditional analog technology, pictures and sounds are converted into "waveform" electrical signals for transmission through the radio-frequency spectrum, while digital technology converts these pictures and sounds into a stream of digits consisting of zeros and ones for transmission. Digital transmission of television signals provides several advantages compared to analog transmission, such as enabling better quality picture and sound reception as well as using the radiofrequency spectrum more efficiently than analog transmission.

A primary goal of the DTV transition is for the federal government to reclaim spectrum that broadcasters currently use to provide analog television signals. The

radiofrequency spectrum is a medium that enables many forms of wireless communications, such as mobile telephone, paging, broadcast television and radio, private radio systems, and satellite services. Because of the virtual explosion of wireless applications in recent years, there is considerable concern that future spectrum needs—both for commercial as well as for varied government purposes—will not be met. The spectrum that will be cleared at the end of the DTV transition is considered highly valuable spectrum—sometimes called "beachfront spectrum"—because of its particular technical properties. In all, the DTV transition will clear 108 MHz of spectrum—a fairly significant amount. In the Balanced Budget Act of 1997, the Congress directed FCC to reallocate 24 MHz of the reclaimed spectrum to public safety uses. Since the terrorist attacks of September 11, 2001, there has been a greater sense of urgency to free spectrum for public safety purposes. The remaining returned spectrum will be auctioned for use in advanced wireless services, such as wireless high-speed Internet access.[3]

To implement the DTV transition, television stations must provide a digital signal, which requires them to upgrade their transmission facilities, such as transmission lines, antennas, and digital transmitters and encoders. Depending on each individual station's tower configuration, the digital conversion may require new towers or upgrades to existing towers. Most television stations throughout the country are now providing a digital broadcast signal in addition to their analog signal. After 2006, the transition will end in each market—that is, analog broadcast signals will no longer be provided—when at least 85 percent of households in a given market have the ability to receive digital broadcast signals.

SEVERAL CHALLENGES MIGHT ARISE THAT REQUIRE CONSIDERATION IN ADMINISTERING A SUBSIDY PROGRAM FOR DTV EQUIPMENT

During the course of our review, we identified several administrative challenges to implementing a subsidy for DTV equipment. For example, prior to implementing a subsidy program, various determinations need to be made, including (1) which federal entity will administer a subsidy program, (2) whether a rulemaking process is necessary to fully determine and stipulate how the subsidy program will be structured, (3) who will be eligible to receive a subsidy, (4) what equipment will be covered, (5) how information about the subsidy will be communicated to consumers and industry, and (6) what measures, if any, will be taken to limit fraud.

It is Unclear What Entity Would Be Best Suited to Administer the Subsidy Program

One challenge to the DTV subsidy that we identified is determining which entity should administer the subsidy program. An industry representative told us that the implementing agency should have some level of telecommunications expertise in order to be able to set appropriate standards for the equipment being subsidized and to effectively educate consumers about the DTV transition. In our opinion, policymakers might also consider if the entity has experience administering a household assistance program.

Based on our discussions with government officials, it appears that no single entity has the combined technical knowledge and subsidy administration expertise that might be necessary to successfully implement a DTV subsidy. For example, while FCC and NTIA have telecommunications knowledge and are responsible for managing the use of the radiofrequency spectrum, neither has experience administering a federal subsidy program of this kind. We asked these agencies about their ability, based on their experience, to administer a DTV subsidy. NTIA had no official comment. FCC officials told us they believe the Commission could have some role, such as defining which equipment would be eligible for the subsidy, but did not believe FCC was best suited to administer the entire subsidy program. Further, an FCC official said it might be advantageous for the administering entity to leverage the expertise of state government agencies to assist with delivering the subsidy to low-income households.

We also asked two agencies that have experience administering federal assistance programs, the Department of Health and Human Services and the Department of Agriculture's Food and Nutrition Service, about their ability to implement a DTV subsidy.[4] Although these agencies have experience with subsidy programs, they do not have expertise in telecommunications. Officials from the Department of Health

[3] In addition to the 24 MHz that is allocated to public safety, another 24 MHz has already been auctioned.

[4] The Department of Heath and Human Services administers a number of programs, including Temporary Assistance for Needy Families. The Food and Nutrition Service also administers various programs, including the nation's Food Stamp Program and the Special Supplemental Nutrition Program for Women, Infants, and Children, better known as WIC.

and Human Services told us the agency would not be well suited to administer a DTV subsidy because their programs, such as Temporary Assistance for Needy Families, are narrowly defined—a household must have children to be eligible for Temporary Assistance for Needy Families—and would not offer broad enough coverage for a DTV subsidy. Similarly, officials from the Food and Nutrition Service said they did not believe their agency would be the best entity to administer the subsidy. However, after we asked whether the state agencies that administer food stamps could provide a DTV subsidy to their recipients, Food and Nutrition Service officials said that this might be possible under certain conditions, but that an agreement would most likely have to be reached with each state and, in their view, the states should be paid for the costs they incur in doing so.

When we contacted four state heath and human services agencies that administer various assistance programs on behalf of the federal government, such as food stamps, all four indicated that it might be possible for the states to provide the DTV subsidy to the low-income individuals who already receive assistance from one or more programs they administer. However, they told us there would be costs associated with implementing a subsidy program, such as staff time, programming costs, postage, and envelopes. One state we contacted estimated that it would cost approximately $552,000 to mail vouchers to the approximately 1.5 million households that receive food stamps, Medicaid, and Temporary Assistance for Needy Families within the state. However, two states told us that if the program ran over a period of time it would be difficult to track which households already received the DTV subsidy as people go on and off of assistance over time, so some households could receive duplicate benefits. Further, three of the four states told us that such a program would be burdensome on their limited staff resources.

Implementing a Subsidy Program May Require a Rulemaking Process

A rulemaking process might be required to implement a DTV subsidy, and if so, this would likely have implications for how quickly a subsidy program could be established. While legislation could broadly define the parameters of the subsidy program and may even prescribe specific elements of the programs' structure and administration, it is not uncommon for a federal agency to determine that a rulemaking process is necessary to more fully detail how a program will be implemented. Through a rulemaking, the agency would finalize the rules of the program that were not specifically addressed in the legislation. FCC told us that if the legislation is very specific a rulemaking process may not be necessary for a DTV subsidy. However, FCC did note that rulemakings have been used in the past after legislation enacted new programs. For example, rulemaking processes have been undertaken several times to make adjustments to the Lifeline Assistance Program since it was established in 1985.[5]

The rulemaking process generally takes time because it requires a wide range of procedural, consultative, and analytical actions on the part the agencies. Sometimes agencies take years to develop final rules. Among other things, the rulemaking process generally requires agencies to (1) publish a notice of proposed rulemaking in the Federal Register; (2) allow interested parties an opportunity to participate in the rulemaking process by providing written data, views, or arguments; (3) review the comments received and make any changes to the rule that it believes are necessary to respond to those comments; and (4) publish the final rule at least 30 days before it becomes effective. Further, the Office of Management and Budget reviews significant proposed and final rules initiated by executive branch agencies other than independent regulatory agencies before those rules are published in the Federal Register.[6] A former official from the Department of Health and Human Services told us that industry participants, interest groups, or other stakeholders can challenge a proposed rulemaking, which can delay the process further. He said that in order to avoid such challenges, it is essential to have the key stakeholders involved early in the process. That is, if the key stakeholders have the opportunity to provide input prior to the development of the rulemaking and are satisfied that their concerns are addressed, they will be less likely to file a challenge to the proposed rulemaking.

Eligibility Criteria Pose Challenges to the Administration of a DTV Subsidy Program

Determining who would be eligible to receive the subsidy could present an administrative challenge to developing a subsidy program. If the government decides not to provide a DTV subsidy to all households, it would need to establish criteria to

[5] The Lifeline program, created in 1985, provides a discount on local telephone bills for certain low-income customers so that basic local phone service is more affordable.

[6] The Office of Management and Budget does not review rules of independent regulatory agencies, such as FCC.

determine who is eligible. For example, a means test could be imposed to restrict eligibility to low-income households determined to be in financial need of the subsidy. The subsidy could also be limited to only those households relying on over-the-air television signals, on the grounds that these households are likely to be the most adversely affected by the DTV transition.

Eligibility for Low-Income Households: If it is determined that a DTV subsidy will only be made available to low-income households, a means test of some kind would need to be used to identify the appropriate target households. Officials from the Department of Health and Human Services told us that using the income-based eligibility criteria of existing social service programs to define eligibility for a DTV subsidy program would be the most efficient way to employ a means test. That is, by using the receipt of an existing program benefit that is means tested, a new program could be effectively implemented without developing a means test specifically for that program. However, we were also told that one of the drawbacks to using these existing programs is that not all who are eligible for any particular program actually choose to apply for and receive benefits. This would mean that by only providing a DTV subsidy to those already receiving other assistance, some people who would be eligible for the subsidy based on their underlying income would not qualify for the subsidy because they have chosen not to receive another form of assistance. Officials from the Food and Nutrition Service told us that for the Food Stamp Program, approximately 54 percent of those who would be eligible for the program receive the benefit nationwide. It was thus suggested to us that if recipient lists from social assistance programs were used in developing eligibility determinations for a DTV subsidy, it might be beneficial to use more than one program. By combining the participants of several programs, a DTV subsidy for low-income households would target a higher percentage of needy households than if only one program was used to establish eligibility. For example, FCC told us that the Lifeline Assistance Program uses receipt of any of seven social assistance programs, including food stamps and Medicaid, as an eligibility requirement.[7]

Privacy concerns could, however, be a limitation of using existing social welfare programs to develop eligibility for a DTV subsidy because the agencies administering these programs may be prohibited from providing the list of recipients to any outside entity. Under current law for example, food stamp recipient information might not be available to other federal agencies or to any private party or outside entity that might be involved in the administering the subsidy. Another limitation in using these data is that there is continuous change in recipient rolls because of people entering and leaving the program. Those implementing a DTV subsidy program would need to take into account the volatility of recipient rolls in deciding how this information could be used.

Eligibility for Over-the-Air Households: Some stakeholders we contacted indicated that a DTV subsidy should be focused on or limited to only those households that rely exclusively on over-the-air television. Because no list of these households exists, limiting a subsidy in this manner will require determining who the over-the-air households are—a task that could pose administrative challenges. One possible approach to identifying over-the-air households is to first identify cable and satellite[8] subscribers. A combined list of all cable and satellite subscribers could be used as a mechanism to check whether those applying for a DTV subsidy are not qualified for the subsidy.

The process of combining cable and satellite subscriber information into a comprehensive list could be a highly challenging task. First, cable industry officials we interviewed expressed concern over providing their subscriber lists to a government agency or another entity. Cable officials told us that under current law, they could not turn over subscriber information to the government without prior permission from subscribers unless they were under a court order.[9] Cable industry officials also told us that any change in current legislation would need to include liability protection for cable and satellite companies because their subscriber lists—which include personal information provided to these companies from subscribers—would be outside their control. An industry official said that even more stringent safeguards would need to be in place if the information were provided to an outside entity—such as a contractor—rather than to a government agency. One cable company offi-

[7] Consumers can receive assistance if they participate in Medicaid, the Food Stamp Program, Supplemental Security Income, Federal Public Housing Assistance (Section 8), the Low Income Home Energy Assistance Program, the National School Lunch Program's free lunch program, or Temporary Assistance for Needy Families.

[8] For satellite subscribers, we are referring to those that subscribe to a direct broadcast satellite (DBS) service, such as DIRECTV or DISH Network.

[9] 47 U.S.C. §§338(i) and 551.

cial stated that even if the law were changed to allow the company to provide its subscriber lists, it would be placed in the awkward situation of having to inform their subscribers that their names were provided to the government to help administer a subsidy that the cable subscribers are not eligible to receive. The cable company official also stated that subscribers would be sensitive to their information being used in this manner, especially in light of recent security issues related to personal information.

A second challenge to developing a national list of all cable and satellite subscribers is the difficulty of merging this information across all cable and satellite companies. Currently, there are over 1,100 cable and satellite companies operating throughout the country, with a total of nearly 90 million subscribers. Information from these companies, which is maintained in various formats, would have to be collected and combined into a comprehensive list of subscribers. Cable industry officials stated that the process of merging and maintaining a list of nearly 90 million subscribers would not be an easy undertaking. For example, one cable industry official estimated that the process of working through all the technical logistics for establishing a list could take 6 to 12 months. Additionally, cable industry officials stated that there is significant "churn" (i.e., the number of people moving on and off subscriber lists) in the industry. For example, one cable company official stated that churn can be as high as 10 percent of subscribers from month to month. Another cable industry official told us that a significant level of resources would be needed to keep such a combined subscriber list up to date.

Another possible, albeit difficult, way to determine who the over-the-air households are would be to send queries to cable and satellite providers to ask if particular people who have applied for the DTV subsidy are, in fact, already subscribing to cable or satellite. For cable customers, a database would need to be developed to direct the queries to the applicable provider. According to FCC, the Commission maintains a master data base with information on all franchised cable areas—of which there are over 30,000. The most identifiable geographic information in that database is the name of county where each cable franchise is located. If an applicant for the DTV subsidy provided a county of residence, a query could be sent to all the franchised cable areas in that county. However, an FCC official told us that in many counties there are multiple cable franchises operating. Moreover, the FCC official stated that even though there is a contact name for each franchise area, in many cases, the contact was someone at a corporate headquarters of the cable company. Thus, we believe that to contact the local cable franchise directly, the database would need to be further developed to include information—perhaps an e-mail address at the local franchise level—to which the query could be sent. This process could be time consuming for both the entity processing the subsidy applications and the cable providers. On the satellite side, we believe querying the satellite providers might not be too difficult because there are only two primary providers. However, people may object to their personal information being sent to the satellite providers as well as the cable providers in their area. Another option might be to use information maintained by companies that perform subscriber billing for cable and satellite companies. We were told that about six large billing companies provide billing services for a substantial majority of the cable and satellite companies. Representatives from a company that provides identification and credential verification services told us they could verify that individuals applying for a DTV subsidy do not subscribe to a cable or satellite service by checking the applicant's address against the addresses maintained by the cable and satellite providers' billing companies. To protect the privacy of subsidy applicants, the identification and verification services company told us such queries should be based on an individual's address rather than name or Social Security number. Company officials also told us that it would likely take a few months to develop this checking process.

Congress and Implementing Agency Must Determine What Specific Equipment Would Be Subsidized

One of the administrative elements of a subsidy program that would likely need to be determined is exactly what equipment will be subsidized. In making this determination, policymakers might consider both policy issues as well as issues related to the ability of the program to be implemented and managed.

From a policy perspective, several of the manufacturers and retailers we contacted told us that they believe it would be most beneficial to consumers if the program did not put highly specific limits on the type of equipment they could buy with the subsidy. In particular, some stakeholders generally believed that eligible consumers should not only be allowed to apply the subsidy toward a basic set-top box, but should also be allowed to apply that amount toward enhanced set-top boxes (those with upgraded features or functions) or digital televisions capable of receiving and

displaying digital broadcast signals. Several stakeholders noted that any product that enables consumers to receive digital broadcast signals does the job of ensuring that there is no loss in television service when the transition occurs. Moreover, some said a wide application of the subsidy provides consumers the most choice and promotes the adoption of digital television. An opposing view is that a subsidy should only be designed to ensure that there is no loss of television service when the DTV transition is completed, and therefore the subsidy should only be applicable to a set-top box.

From the perspective of administering the program, determining what items the subsidy can be applied towards is critical for communicating to manufacturers, retailers, and consumers a key parameter of the program. Some stakeholders noted that either the Congress or the administering agency would need to identify the products that would be subsidized so that manufacturers produce the appropriate equipment. If the intent is to subsidize only simple set-top boxes, FCC officials told us that the subsidy would cover boxes that have only analog outputs. If the Congress or the implementing agency determines that the subsidy will be more broadly applicable, the particular parameters of the program would need to be communicated to the manufacturing industry so that their business plans can proceed.

There would also likely be some process by which specific items meeting the parameters of the subsidy program are approved and flagged as eligible for the subsidy. Manufacturers need certainty about what items are approved for the subsidy if they are to place a rebate coupon on or inside of the equipment boxes, along with any related information. Specific identification of subsidized items will also be important for retailers as they make inventory decisions and train staff about how to guide consumers' purchasing decisions. Also, if retailers are asked to play a part in the administration of the program, such as by accepting vouchers or printing rebate coupons at the time of sale, it will be critical for them to have validation of items that are eligible for the subsidy. And, clearly, consumers need to understand which items they can purchase using the subsidy.

Some industry representatives we contacted also expressed concern about the interface between industry and the government in the design of the subsidy program. In particular, industry representatives said that the government should work with industry as the subsidy program is developed to ensure that the program is designed in a manner that will provide incentives for manufacturers and retailers to participate. Additionally, some companies noted that the government would need to provide industry with information on the expected scope of the program in order to avoid shortages of equipment at retail. In general, some companies told us that industry should be involved in the development of the program to help ensure that it is designed and implemented efficiently.

A Successful Subsidy Program Will Require an Effective Information Campaign about the DTV Transition and Subsidy

To successfully implement a DTV subsidy program, eligible recipients will need to understand that a subsidy is available, how to obtain it, which equipment the subsidy can be used for, and where they can obtain the equipment. Thus the agency responsible for implementing the program would need to undertake a communication campaign. At the same time, it could be difficult to provide information about the parameters of the subsidy program if there is not a general understanding about the broader DTV transition. As such, it appears that an information campaign regarding the availability of a subsidy for DTV equipment might need to be coordinated with a more general information campaign about the transition and its ramifications for American households.

Three years ago we found that many Americans did not have significant awareness of the DTV transition, and we recommended that FCC explore options to raise public awareness about the transition and the impact it will have on consumers.[10] Since that time, FCC and industry have undertaken efforts to better inform the public about the transition. In March of this year, the Consumer Electronics Association, an association of electronics manufacturers, reported that consumers' understanding of digital television has improved. This association surveyed individuals and found that, compared to past years, there has been an increase in consumer familiarity and understanding of DTV, as well as an increase in the likelihood of over-the-air households to take action to avoid losing television service.

Based on our interviews with several stakeholders, it appears that despite these findings many consumers—particularly those who may be the most affected by the transition—may still be unaware or confused about the DTV transition. Several of

[10] See GAO, *Telecommunications: Additional Federal Efforts Could Help Advance Digital Television Transition,* GAO037 (Washington, D.C.: Nov. 8, 2002).

the company representatives with whom we spoke told us that while consumers are more familiar with the concept of high-definition television, they are still unaware or confused about other aspects of the DTV transition. Some told us that few consumers understand that at some point analog television will cease operation and analog television sets will be unable to receive digital over-the-air signals. We were told that it is especially difficult to provide consumers with a better understanding of this in the absence of a hard transition date. Additionally, some populations might be difficult to reach because English may not be their primary language or because they only receive television over-the-air and have no business relationship with a subscription television provider that would likely provide them with information about the transition.

Minimizing Fraud Might Be a Consideration in the Development of a Subsidy Program

Depending on how a subsidy program is structured and implemented, there may be opportunities for people to defraud the government. For example, one official familiar with government subsidy programs noted that if everyone were eligible for the subsidy, the opportunities for fraud would decline. For this reason, the more restrictive the eligibility requirements, the greater may be the chances for fraud. In terms of reducing fraud, those familiar with rebates noted that the more requirements for rebate redemption—that is, the more documentation the consumer must provide to redeem the rebate—the fewer problems with fraud there are likely to be. However, we were also told that increased requirements would tend to reduce the number of people who attempt to redeem the rebate. An additional consideration regarding fraud is the cost of fraud mitigation. A former official from the Department of Health and Human Services told us that while minimizing fraud should be considered in developing a subsidy program, the cost-effectiveness of these efforts should also be measured. For example, we were told that administering systems to mitigate and prevent fraud may be costly and may not be worthwhile, especially if the value of the subsidy is low.

A Variety of Options Exist for Administering a DTV Subsidy, Each with Unique Challenges

While a government subsidy for consumers to purchase DTV equipment could be administered in several ways, each of the subsidy options we examined had advantages and disadvantages. Following is a description of and stakeholders' views on four DTV subsidy options: a refundable tax credit, government distribution of equipment, a voucher program, and a rebate program. As we noted above, we take no position on whether a subsidy should be implemented, or whether, if a subsidy program is established, it should be implemented in any particular way.

Refundable Tax Credit Program: One method that could be used to administer a subsidy program for DTV equipment would be a refundable tax credit, administered as part of the federal individual income tax. A refundable tax credit could be designed to provide qualifying taxpayers a refund greater than the amount of their tax liability before credits. Based on the manner in which tax credits work, we believe that a tax credit for DTV equipment would likely be structured such that consumers purchase an eligible set-top box, maintain required information on their purchase, and seek reimbursement for all or some portion of the cost from the federal government for the equipment when they file their federal income taxes. Based on discussions with an official from the Department of the Treasury, it does not appear that this method would be well suited for a DTV subsidy. The Treasury official told us that considerable administrative burdens would be imposed on the Internal Revenue Service (IRS) to administer a refundable tax credit for a one-time subsidy. This official noted that implementation of a new tax credit would require the IRS to change tax forms, as well as instructions, for the years that the program would be in operation. Changing tax forms imposes administrative costs, particularly if tax laws are changed after forms have been developed for a given tax year. Additionally, he noted that IRS Form 1040 is currently completely full, so that any new credit could require the form to be lengthened from two pages to three pages, which would be costly and burdensome. The official also noted that the availability of the tax credit may cause some individuals who otherwise would not file a tax form to do so, which would increase IRS administrative burdens. The Treasury official also noted that there could be compliance problems with a tax credit approach. Because of the small amount of the credit—likely about $50—it would not be cost-effective for the IRS to assign resources to check compliance, thus it would be very difficult to minimize fraudulent use of the credit. In fact, IRS has had difficulty assuring compliance for a refundable tax credit. In particular, for the Earned Income Tax Credit, IRS estimated that roughly 30 percent of the dollars claimed was erroneous.

We heard from stakeholders that a tax credit for DTV equipment might not be the most helpful to low-income Americans because individuals would have to purchase the equipment with their own money and file—possibly many months later—for a tax refund. Also, we were told some low-income Americans do not file tax returns. We believe the additional costs and burdens for such individuals to file taxes for the purpose of obtaining a tax credit may exceed the value of the credit.

Government Distribution: With government distribution, the government provides certain goods for needy citizens. One example of government distribution is the Emergency Food Assistance Program whereby the government provides food, such as dried fruit, non-fat dry milk, and peanut butter, to states for distribution to selected local agencies—usually food banks—which, in turn, distribute the food to soup kitchens and food pantries that serve the public directly.

For the DTV transition, the government could directly provide the necessary equipment to individuals, but we found there would be a number of challenges to implementing and administering such a program, and, based on discussions with state social service agencies, it appears that this would be an unwieldy way to administer a DTV subsidy. One challenge would be finding locations for distributing the equipment. We heard from several officials whose state agencies administer benefit programs that using local social services offices as a distribution point would not be feasible. These officials cited the lack of space and staff resources to store, secure, and distribute equipment as reasons why local offices could not be used to administer such a program. Further, stakeholders told us that government distribution does not take advantage of existing retail supply chains that already move large quantities of goods to stores throughout the country.

While a government distribution program would not require households to pay for equipment in advance of receiving the subsidy, which would be beneficial to low-income households, the program could present other challenges to those eligible to participate. For example, stakeholders we interviewed told us that a distribution program limits consumers' choices and provides no mechanism for consumers to obtain support if the equipment does not work properly. Additionally, officials from one state agency told us that people obtaining equipment at local offices would have to wait in long lines, which could be problematic for those with physical limitations, such as the disabled and the elderly.

Voucher Program: Another mechanism to subsidize DTV equipment could be through a voucher program. A voucher—which is a coupon or electronic benefit card, similar to a credit card, which provides purchasing power for a restricted set of goods or services—could be provided to households that qualify for a DTV subsidy. The federal government has used vouchers to provide a variety of assistance to households, such as food stamps and housing subsidies. Also, vouchers have been used on a limited basis to provide benefits to consumers for the changeover of certain technology. For example, the Colorado Department of Human Services provided a voucher to individuals who qualified as hard of hearing to purchase text telephones and other specialized telecommunications equipment.

For a DTV equipment subsidy using a voucher system, various administrative steps would be necessary to design and implement an effective program. After decisions were made about the specific equipment to be covered, vouchers would need to be distributed to eligible households. Several of those we contacted noted that if the program is to be means tested, state agencies—such as those that administer the Food Stamp Program—might be able to mail vouchers to their existing recipients.[11] Additionally, with a voucher program, several administrative steps involving the retail industry would be required. Participating retailers would have to know how the program is structured, which specific items were covered by the subsidy, approximately how many pieces of DTV equipment were expected to be subsidized in a particular area, and how the mechanism for retailer reimbursement would operate.

Overall, using vouchers to administer a DTV subsidy might be beneficial for low-income households because such households would not be required to pay for the DTV equipment in advance and then wait to be reimbursed. However, stakeholders told us that this type of program could create a burden on retailers because they must determine the authenticity of the vouchers. Also, stakeholders mentioned that it might be more challenging to include smaller and independent retailers in a subsidy program that uses vouchers.

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[11] State agencies we contacted suggested that mailing a paper voucher to recipients would be the least difficult and most effective way of distributing a voucher for a potential DTV subsidy. While food stamp benefits are provided to recipients electronically (through an Electronic Benefit Transfer (EBT) card), the state agencies told us it would be costly and time-consuming to add the DTV subsidy to these electronic cards.

Rebate Program: A rebate program could also be used to administer a DTV subsidy. Rebates generally require consumers to pay the full cost of an item at the time of purchase and then send documentation to an address specified by the manufacturer or retailer to receive a rebate by mail. The documentation required generally includes the original sales receipt, the UPC code from the product packaging, a rebate slip, and the customer's name, address, and telephone number. In most cases, this paperwork must be sent within 30 days of the purchase, and consumers generally receive their rebates up to 12 weeks later. According to the three rebate experts we interviewed, only about 30 percent of rebates are ever redeemed. While two rebate experts said that redemption rates would likely rise with a larger rebate, such as might be provided with a DTV subsidy, none of the three we spoke with believed that the redemption rate would rise above 50 percent. Also we were told that depending on the type of rebate, on average 1 percent to 20 percent of rebate applications are rejected based on the lack of proper documentation.

Typically, a variety of decisions are made in developing a rebate program. For example, as we discussed these decisions with stakeholders, various methods of implementing a rebate were highlighted, including placing the rebate coupon inside the equipment box, affixing it to the outside of the box, or printing a coupon at the cash register at the time of sale. The method used would, in part, determine which entities have some administrative responsibility for the rebate program. If a DTV subsidy program were designed to have a rebate coupon placed in or on the box, it would be the responsibility of the manufacturer to do so, while if it were designed to have a rebate coupon generated at the cash register, the retailer would be responsible for managing this process. A consensus on the best rebate method did not emerge from our interviews with industry experts.

One of the most difficult elements associated with using a rebate for a DTV subsidy would be applying eligibility requirements. As previously discussed, information about over-the-air and low-income eligibility is not readily available to the rebate fulfillment houses—which are the entities that process rebates for manufacturers and retailers—and there are legal obstacles to the government collecting and providing that information to them. Another downside of rebates is that consumers generally pay the full cost of an item at the time of purchase, which could create a hardship for low-income households. Furthermore, one rebate fulfillment center representative told us that low-income individuals are less likely to redeem rebates than other segments of the population. Similarly, an official from a state agency told us that based on her experience a rebate program is not a good choice if the subsidy is supposed to target low-income individuals because many low-income individuals are not comfortable with rebates and will not redeem them. If eligibility for the subsidy is not restricted, a rebate might provide a good delivery mechanism. A benefit of using a rebate program for a DTV subsidy is that this method could take advantage of the relationships that already exist between retailers, manufacturers, and the rebate fulfillment industry.

Several Government Programs Have Employed Rebates or Vouchers to Provide Subsidies

We identified several government programs that have used or are using rebates or vouchers to subsidize consumers' purchase of products. While aspects of these programs might provide insight into the establishment of a DTV subsidy, we found, overall, that the programs we reviewed differed in many respects from what might be undertaken for a DTV subsidy. We reviewed three rebate programs that were implemented by local governments to provide incentives for furthering a policy goal, such as clean air, water conservation, and the use of energy-efficient appliances. We also reviewed three voucher programs, including one state program that subsidizes equipment for deaf and hard of hearing citizens and two federal programs that provide assistance to needy households to purchase food. See table 1 for key information about the six programs we reviewed.

We believe some aspects of the programs' implementation, such as the time required to develop a program and the manner in which program information was disseminated, might have relevance to the establishment of a DTV subsidy. For example, for two of the rebate programs, we learned that it took several months to develop and implement the programs, with one rebate program taking 12 months and another taking 18 months to implement. In reviewing various other aspects of the programs, such as eligibility determinations and what products were subsidized, we found that differences existed between the voucher and rebate programs that might also provide some insight for a DTV subsidy. For example, for all of the voucher programs we reviewed, benefits were targeted to low-income individuals, and eligibility was specifically defined. In contrast, eligibility for the rebate programs not based on income; rather, a person only had to reside in the location where the sub-

sidy was being offered or be a water or power customer to be eligible. We also found differences in the types of products subsidized for the rebate and voucher programs that we reviewed. Whereas the rebates subsidized items in an effort to further a policy goal (generally environmental protection), the voucher programs provided recipients with items for their basic needs.

Overall, however, we observed that aspects of these programs' implementation are dissimilar to what might be undertaken for a DTV subsidy. First, choosing not to participate in any of the programs we reviewed would not cause a household to lose any existing service or functionality. In contrast, if a household chose not to take advantage of a DTV subsidy for which is was qualified, and then did not obtain the necessary equipment to receive broadcast digital signals, the household might lose access to broadcast television signals when the transition occurs. Additionally, none of the rebate programs we reviewed are comparable to the size of a potential DTV subsidy in terms of number of people served. While the national voucher programs serve millions of households, they are unlike the DTV subsidy in that they are long-established programs with an entire infrastructure designed to provide benefits to recipients on a recurring monthly basis. Due to differences in the scope of the rebate and voucher programs we reviewed and a potential DTV subsidy, it is not clear how applicable the administrative costs of these programs are to estimating the costs of a DTV subsidy.

Other Efforts Necessary for the Completion of the DTV Transition Are Ongoing

If a subsidy program is implemented, it will pose many challenges for the implementing agency and industry. However, there are other aspects of the DTV transition not related to the implementation of possible subsidy program that are ongoing and will take time to complete or may pose their own challenges. For example:

- Under current FCC time frames, the final process for television stations to select their permanent channel placement for their digital signals is ongoing. Broadcast stations began the process of choosing their final DTV channel in February 2005.[12] In August 2006, FCC expects to issue a Notice of Proposed Rulemaking that includes a tentative DTV Table of Allotments once the channel election process is finished. FCC will seek comment on the proposed Table and then issue an order with a Final DTV Table of Allotments, which, at a minimum, would take several months. An FCC official told us that it would likely be sometime in 2007 before all the allotments are finalized. In order for the DTV Table of Allotments to be finalized by the end of 2006, FCC officials told us that they would need to shorten the channel election process time frames that they currently have in place. We were told that once stations know their final channel assignments, they might need to make adjustments to certain equipment. Therefore, we found that for stations that do not have certainty on their assignments until sometime in 2007, equipment modifications will be undertaken well into that year.
- Currently, a small number of television stations are not yet broadcasting digital signals. FCC told us that issues of technical interference and the permitting process for locating and constructing broadcast towers are the primary reasons these stations are not yet online with a digital broadcast signal. For example, for any station located within 200 miles of the Canadian border, coordination and approval from the Canadian government is required, in accordance with international treaties.
- At present, no requirements for the application of the Emergency Alert System (EAS) apply to stations' digital broadcast signals. FCC is now considering how requirements will be set. An FCC official told us that rules for EAS on DTV stations that are similar to requirements for analog stations should be developed within a few months, but additional work will look at whether there will be expanded functionality required in the digital environment. According to FCC, the equipment that stations will be required to purchase to meet the basic requirements that are likely to be set before the end of 2005 is not very expensive. Because the requirements for expanded functionality are not yet set, an FCC official told us that it is not clear what the cost of any additional equipment will be.
- Another challenge that may be posed by the DTV transition relates to antenna reception of digital over-the-air broadcast signals. Many stakeholders said that antennas currently used to view analog over-the-air signals will be sufficient to

[12] *In the Matter of Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, MB Docket No. 03-15, Report and Order,* FCC 04-192, released September 7, 2004, FCC established a multistep channel election and repacking process through which broadcast licensees will select their ultimate DTV channel (i.e., channels 2-51).

receive DTV signals and an FCC official told us that many viewers will have improved picture quality with digital signals. However, a few indicated that improved antenna technology may be needed for some households. An antenna manufacturer, a broadcaster, a retailer, and other stakeholders said that the ability to receive digital over-the-air signals is variable and contingent on each household's geography, among other things, and that some people may need new antennas or adjustment of existing antennas. In particular, we were told that adjusting the antenna to receive digital broadcast signals can be more difficult than analog signals because if the antenna is not aimed correctly, the television may not be able to display any signal. Also, while interference from trees, buildings, and other structures can distort an analog picture, this type of interference can cause a complete loss of digital signals.

- Ensuring that households understand the transition and how they will be affected is critical to a smooth transition. Any household that does not understand what will occur could be adversely affected. Over-the-air households are the most likely to be impacted by the transition because, to whatever extent cable subscribers will be affected, they will likely have support and information provided by their subscription video providers. Based on our work, other specific populations might also be more difficult to reach with needed information about the transition, including low-income households and those who do not speak English as a first language. The consequences of any information gaps are serious because households could lose their access to television signals. During our work on the transition to DTV in Berlin, Germany, we found that an extensive information campaign was widely viewed as critical to the success of the transition.

CONCLUDING OBSERVATIONS

There are many difficult decisions and determinations that will likely be considered if a subsidy program for DTV equipment is developed. In addition, there are unique interfaces between the challenges we identified and the administrative method used to deliver the subsidy that will require careful consideration. For example, if such a program were developed and eligibility were limited to only low-income individuals, it might be advantageous to leverage the infrastructure and expertise that state social service agencies have in providing assistance to needy households. But to utilize the state agencies, the subsidy might need to be provided in the form of a voucher because the state agencies have experience mailing information and could mail a voucher to the low-income recipients of other assistance. In contrast, if there were no eligibility restrictions applied to the subsidy, a rebate might be a good method for administering the subsidy because it would draw on the existing relationships between manufacturers, retailers, and rebate fulfillment companies, all of whom have extensive knowledge and experience in developing, advertising, and implementing rebates. However, such a design might render the subsidy less usable by low-income Americans.

The return of the spectrum for public safety and commercial purposes is a critical goal for the United States. Implementing a subsidy program for DTV equipment poses a variety of difficult challenges and may not be the only policy option that could help advance the overall goal of reclaiming spectrum. Given the importance of this transition, it seems critical for knowledgeable officials in government and in industry to work together to find the best means to address any issues that may impede progress in completing the DTV transition—and the associated reclamation of valuable radiofrequency spectrum.

Mr. Chairman, this concludes my prepared statement. I would be happy to respond to any questions you or other Members of the Committee may have at this time.

Table 1: Information on Rebate and Voucher Programs GAO Reviewed

Program name	Subsidy type and amount	Administering entity	Item/commodity subsidized	Eligibility requirements	Total budget	Percent of budget allocated to administrative costs	Number of persons served	Time required to develop and implement program	Length of program existence	Information dissemination
Santa Cruz County Electric Bike Commuter Incentive Program	Rebate; maximum rebate is $375	Ecology Action, Inc. on behalf of Santa Cruz County, California	Electric-powered bicycles	Must be a resident of Santa Cruz County, also must attend a safety training class	$1 million	Start up administrative costs were 26.4 percent; once the program was established, administrative costs were 14 percent	879	About 12 months total; 6 months to design the program and 6 months to secure funding	August 2000 through June 2006	The program was launched with a high profile press conference attended by regional and national press; then used main stream media to promote the program
Sacramento County Water Agency Ultra-low Flow Toilet Rebate Program	Rebate; rebates vary from $75 to $125 per rebate	County of Sacramento, California	Ultra-low flush toilets (that use only 1.6 gallons of water per flush)	Must be a Sacramento County Water Agency customer (with a high flow toilet)	$45,000 in 2004 and 2005	Administrative costs not separated out from general agency costs.	142 in 2004	About 18 months to implement; majority of this time was spent coordinating with the various water agencies that were participating in the program.	Ongoing; started in 2003	Advertised in water bills and newsletters; allowed installers to advertise program's availability

Program name	Subsidy type and amount	Administering entity	Item/commodity subsidized	Eligibility requirements	Total budget	Percent of budget allocated to administrative costs	Number of persons served	Time required to develop and implement program	Length of program existence	Information dissemination
Consumer Rebate Program (for Energy Efficient Products)	Rebate	Los Angeles Dept. of Water and Power (LADWP), California	Energy efficient appliances, lighting, and windows	Must be a LADWP customer	$3 million	Approximately $1.18 million, or 39 percent of the total budget, is for labor, marketing and materials.	Approximately 6,000 per year	Original program development was lengthy. Program implemented in 3 months once contractor was hired.	Ongoing; started in 2002.	Provided handouts at retail stores and LADWP branch offices, advertised on radio, placed inserts in all residential utility bills, created special page on LADWP web site, had kick-off event at Home Depot that was carried on local news stations
Colorado Telecommunications Equipment Distribution Program	Voucher	Colorado Commission for the Deaf and Hard of Hearing	Text telephones, printing text telephones, phone signalers, and amplifiers.	Medically certified as deaf or hard of hearing and low income, defined as 185 percent of the federal poverty level	$650,000	Not available	260	Not available	Ongoing; started in 2003	Worked with rehab and independent living centers, advocacy groups, subscriber based emails, and newsletters for groups representing the deaf and hard of hearing. Also did a one-time stuffer in phone bills

Program name	Subsidy type and amount	Administering entity	Item/commodity subsidized	Eligibility requirements	Total budget	Percent of budget allocated to administrative costs	Number of persons served	Time required to develop and implement program	Length of program existence	Information dissemination
Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)	Voucher [a]	Department of Agriculture, Food and Nutrition Service	Food	185 percent of federal poverty guideline, among other criteria	$4.5 billion in fiscal year 2003	About 28 percent, includes nutrition services as well	7.6 million in fiscal year 2003	[c]	Ongoing; started in 1974	[c]
Food Stamp Program	Voucher [b]	Department of Agriculture, Food and Nutrition Service	Food	130 percent of federal poverty guideline, among other criteria	$23.9 billion in fiscal year 2003	About 10 percent	21.3 million in fiscal year 2003	[c]	Ongoing; started in 1964	[c]

Source: GAO analysis.

[a]Most state agencies distribute WIC benefits through checks or vouchers that enable recipients to purchase specific foods each month. A few state agencies distribute WIC foods through warehouses or deliver the foods to participants' homes.

[b]The Food Stamp Program provides low-income households with coupons or electronic benefits that recipients use as cash at most grocery stores.

[c]For long-standing programs, we did not obtain information on time required to develop and implement the program and to disseminate information to eligible participants.

Mr. UPTON. Thank you. Mr. Shapiro.

STATEMENT OF GARY J. SHAPIRO

Mr. SHAPIRO. Mr. Chairman, Mr. Markey, members of the subcommittee, thank you.

This committee has actually led the way, starting with you, Congressman Markey, at the first hearing a long time ago, and continued with even the consensus I heard today, in the year 2008.

That is a remarkable achievement. The fact is, the U.S. leads the world in the DTV transition. Japan started with analog, stuttered, had to recall the sets. Europe has not gone to HDTV. The U.S., through the government-industry partnership, this committee's oversight, the FCC, many of the industries represented in this panel, consumer groups, we have done it right, quite frankly.

It is been a phenomenal success, and I don't want to be Pollyanna-ish, but this is the last big step, and I hear consensus on almost every major element. What we are talking about here is some of the details. And I would like to shed some light on that, if I may. The reality is is that DTV is selling phenomenally. We do not need any more government action to sell digital television sets. They are selling fine at this point, given the fact that we have come so far.

The first 4 months of 2005, we have the greatest volume of DTV sets ever, 2.3 million products sold. That is a 36 percent increase in unit sales from the same time period last year. And Americans have already invested $25 billion in DTV products. Prices are 75 percent lower than they were 5 years ago, and they are declining by about 15 percent a year. And consumers can now choose from 200 television models that include over-the-air ATSC tuners. We believe that 9 million DTVs with tuners will be sold this year alone. If Congress sets a hard deadline this year, and if the FCC acts on CEA's petition, we expect 16.7 million DTVs with tuners will be sold in 2006, 27 million in 2007, and 33 million in 2008. And by 2009, we will have sold 97 million DTV tuners, and we estimate that digital over-the-air tuners will then be found in 86 percent of American homes.

Analog sales are going down radically, 36 percent next year, 53 percent in another year. And we are succeeding because consumers are learning. We have a whole range of promotional materials that we have done separately, with other industries, with the FCC. We just received an award for alerting consumers. Most consumers in the country know about HDTV. We have done a phenomenal amount of research about this, and I think we are safe in saying that this is a successful transition, and with a hard date set, soon, that we could start putting labels on sets, just as you have proposed. We do need 180 days or so from the manufacturers' perspective to get the labels, and could put them in the right place, and we have some comments about that, on some of the technical details. But we are ready to go forward, if you set the hard date, and that will allow us to promote even more.

Well, one of the questions is the perspective—and just to give you some facts, the reality is that most Americans today receive local and network broadcast signals over cable and satellite, and if there is any doubt about that, consider the fact that something which would have been big a few years ago, Monday Night Foot-

ball, will no longer be an over-the-air broadcast. It is only going to be on cable and satellite. And yet, no one has said a word about it. So of the nearly 110 million American homes with a TV set, 87 percent, and that is a hard number, 87 percent receive cable or satellite, and you can look at DirecTV, EchoStar numbers, the NCTA numbers. We have done three surveys, as well as Nielsen has done a survey, and many broadcasters themselves. So that 87 percent is a very hard number. So that means that if today, we cutoff analog, that is 13 percent of the population of 110 million households would be denied access to a broadcast signal. Now, we asked those people, we actually surveyed last week, and we will release the details next week, we went to those people that don't have cable or satellite, we asked them what would you do if the government cuts off the analog signal? Over three quarters of them said they would do one of three things, they would buy a 50 percent D to A transformers, they would get cable or satellite, or they would buy a new set. Only 22 percent said they wouldn't do anything. And as cable and satellite penetration goes, this problem will diminish. So the simple fact is that while an analog broadcasting cutoff is important for our Nation, it will only have a very small impact on the viewing habits of a very small number of people, and that is a very important population. And I appreciate the fact that you are trying to deal with it.

We do recommend the following. The draft does require the FCC to move up the deadline for the inclusion of over the air tuners for 13 to 24 inch sets from 2007 to 2006. That is a full year between what our manufacturers and retailers have planned upon, and that is nearly 2.5 years before the 2008 hard deadline. We are pretty concerned about that, because such a requirement would severely reduce the retail market for these sets. Now, the analog, on the other hand, is $100 set for the most part, is just a feature. It is a feature that is barely used. In fact, it is a feature that is not even used in four out of five of the sets where this cable or satellite. So your second, third, or fourth set is already hooked up to cable or satellite, and that is what you are buying these sets for. So it is a low market, it is in the market, but it is an important market.

The fact is, manufacturers have these sets on the planning board, they are already starting to go. Manufacturers have an 18 to 24 month cycle for new equipment. So the accelerated mandate is a little bit problematic, quite frankly, and it would hit lower income consumers hard.

We also ask you to look at the broadcasters' obligation to educate their viewers on the DTV transition. We think it is very marginal. At this point, we have spent millions of dollars. We have a website, we have brochures, we do road shows. We do everything to educate the Americans about the DTV transition. To our knowledge, although local broadcasters have done a good job and networks have done a good job, the reality is that the national organizations for broadcasters have done almost nothing to talk about free, over-the-air television, and that is what this is about. It is free, over-the-air television.

So we commend you for taking it this far, and we ask you to keep going, set that date this Congress, and get us over the finish line here.

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

PREPARED STATEMENT OF GARY J. SHAPIRO, PRESIDENT AND CEO, CONSUMER ELECTRONICS ASSOCIATION

Mr. Chairman and Members of the Subcommittee: Thank you for inviting me to discuss our nation's progress in the transition to digital television (DTV), and the steps that should be taken to conclude the transition in the most beneficial and understandable manner.

I represent the Consumer Electronics Association (CEA), the principal U.S. trade association of the consumer electronics and information technology industries. CEA's 2,000 members include virtually every DTV manufacturer. Our members invented DTV, and we are thrilled by its astounding marketplace success. CEA also represents the cutting-edge information technology companies who will use the recovered analog broadcast spectrum to provide all Americans with innovative new wireless products and services.

CEA strongly supports the enactment of a hard deadline for the end of analog broadcasting. A hard deadline will bring certainty to the DTV transition. It will provide a "win-win" scenario for all stakeholders, while fostering innovation and strengthening our national security. We commend you for including a hard analog cutoff date in this draft legislation.

DTV SALES CONTINUE TO RAPIDLY INCREASE

Our most recent sales figures show that the first four months of 2005 brought the greatest volume of DTV sales ever recorded, with 2.3 million DTV products accounting for $2.95 billion of consumer investment. This is a remarkable 36 percent increase in unit sales from the same time period in 2004.

More than 17 million DTV products have been sold since the first HDTV sets hit the market in the fourth quarter of 1998. Americans already have invested an astonishing $25 billion in DTV products. HDTV is the driver behind these phenomenal sales figures, with high-definition displays and receivers representing 85 percent of the DTV products sold to date.

Sales are being driven by the rapid price declines that are typical of our industry. DTV prices are 75 percent lower than they were five years ago and are still declining by approximately 15 percent each year. Today there are numerous DTV options under the $700 mark and even some expected soon for as low as $400.

Meanwhile, DTV products have spread from specialty retailers and major consumer electronics chains into warehouse clubs, mass merchants, and now discount stores like Wal-Mart and Target.

When consumers walk into retail stores, they now enjoy an unprecedented variety of DTV products to meet their needs and budgets. Buyers can choose from a vast array of compelling displays from traditional CRT sets to cutting-edge new technologies like plasma, LCD, DLP, and LCoS.

Most important to the current debate is the fact that consumers now can choose from 200 "integrated" models that include over-the-air ATSC tuners.

To put this in perspective, digital television has been adopted twice as quickly as color television. While it took color television ten years to achieve 5% penetration from introduction, digital television products are already in 16 million American homes!

Indeed, overall revenues from digital TV now outpace those from analog TV. Television manufacturing is now a digital industry.

As impressive as those numbers sound, we are only beginning to move up the "hockey stick curve" of sales, especially with respect to integrated DTV sets equipped with digital over the air (ATSC) tuners. CEA forecasts that 9 million integrated DTVs will be sold this year, 16.7 million in 2006, 27 million in 2007 and 33 million in 2008.

Including set-top boxes, by 2009 we will have sold 97 million DTV tuners, and we estimate that over the air tuners will be found in 86 percent of American homes.

At the same time, sales of analog sets are declining precipitously. We project sales to decline 36 percent in 2006, and an additional 53 percent in 2007. The current tuner mandate schedule established by the FCC is working.

CEA IS THE LEADER IN DTV CONSUMER EDUCATION

The CE industry has every business incentive to educate consumers about the qualities and features of the DTV they want to purchase. That is why CEA runs an extraordinary educational effort to ensure that consumers are fully informed about their DTV options.

Indeed, last week the National Association of Consumer Agency Administrators (NACAA) presented CEA and the FCC with the Achievement in Consumer Education from for our joint work in informing consumers about the transition to DTV, and helping consumers make the digital choices that are right for them.

As the primary conduit to consumers, and it is critical that retail floor staff is properly equipped to provide accurate and easy-to-understand information.

CEA aggressively responded to this challenge and created a comprehensive DTV retailer-training program called CEKnowHow (it can be viewed online at www.ceknowhow.com). This program is available to all retailers over the Internet. It equips them with the most up-to-date online training for sales associates, so that they can effectively respond to consumer inquiries on DTV and HDTV.

CEA also designed, printed, and made available to retailers a "tip sheet" that explains the DTV transition and basic DTV terms and technology. In late 2004, CEA partnered with the FCC and the Consumer Electronics Retailers Coalition (CERC) to distribute to literally hundreds of thousands of copies of the tip sheet to consumers, retailers, and professional home theater installers.

Over the last year, CEA also visited with major consumer electronics buying groups and talked to more than 2,000 dealers to bring them the latest information on the DTV transition. We have collaborated with Comcast on an educational DVD that covers DTV information ranging from basic definitions to the equipment required to receive and view HDTV content via antenna, satellite or cable delivery.

CEA also is making every effort to reach out directly to consumers. Millions of readers across the country saw our inserts in TV Guide and Sports Illustrated magazines explaining the basics of DTV, how to get a signal, what product choices are available, and so on. We also have showcased HDTV before hundreds of thousands of consumers through exhibits at home design shows and trade exhibitions and viewing parties in public venues across the nation.

CEA exposes millions of consumers to HDTV through our nationally pre-packaged video and news releases, as well as our national CEA media tour. And our quarterly HDTV Guide is the single most authoritative list of the DTV products and programming currently available.

Meanwhile, CEA has taken the lead in promoting consumer awareness and use of over-the-air digital television reception. Through our AntennaWeb program, consumers can visit a website (www.antennaweb.org), enter their home address, and find the optimal outdoor television antenna for their specific location. This site receives approximately 100,000 hits per month.

We also see it as our obligation to recognize those who are going above and beyond the call of duty in furthering the DTV transition. Every year, our Academy of DTV Pioneers honors the best of the best in HDTV programming, reporting and retailing. And, as it should be, every year the categories get more crowded and competitive.

This is just a sampling of CEA's strong commitment to educating consumers and retailers about the DTV transition.

In short, for the DTV transition, everything is moving rapidly in the right direction. Product sales continue to rise, as prices decline. The amount and variety of HDTV programming continue to increase. Content delivery industries are increasingly jumping onto the HD bandwagon. Exciting new products are rolling into the marketplace. Consumer and retailer education is advancing. By almost any measure, digital television is a marketplace success.

Now is the appropriate time to take the next step and bring the broadcast digital transition to a successful conclusion, just as envisioned by this Committee when the Congress loaned public spectrum to the broadcasters for the DTV transition a decade ago.

THE TIME FOR A HARD DEADLINE IS NOW

The 700 MHz band currently occupied by analog broadcasters is beachfront property on the spectrum landscape. The prompt recovery of this spectrum by Congress will produce immense public interest and economic benefits while fostering innovation and protecting our national security.

First, the analog TV broadcast spectrum is ideal for advanced wireless broadband applications. A hard date will spur innovators to develop a broad range of new wireless technologies and services. These new wireless services will offer unprecedented access to rural and underserved areas, while creating competition that drive down prices for all wireless consumers.

A hard date also will fundamentally change and accelerate the DTV marketplace. With the certainty of a hard deadline, stations will know what to broadcast, manufacturers will know what to make, retailers will know what to stock, and consumers

will know what to buy. With the completion of the digital transition now an imminent reality, all affected industries will shift our consumer education efforts into an even higher gear.

But the rationale for a hard date goes deeper than promoting new technologies and broadband access. As reinforced by this month's evacuation of the White House and this Capitol, the gravest threat to our safety is another national calamity like we suffered on September 11, 2001. It is now more apparent than ever that the 700 MHz band held by broadcasters is essential to the swift and effective response of Homeland Security, police, firefighters, and other first responders.

That is why, in a recent letter to Chairman Barton, the Association of Public Safety Communications Officials implored you to set an analog broadcasting cutoff date, stating that "the security of our homeland and the lives and property of our citizens as well as our responders are at stake".

The key to unleashing these benefits is for a hard date to be set, and set now. Fortunately, the video marketplace has now evolved to the point where an analog cutoff can be managed to cause the most minimal consumer disruption.

THE VAST MAJORITY OF AMERICANS NOW CHOOSE CABLE OR SATELLITE TO PROVIDE THEIR TELEVISION PROGRAMMING

Americans now have more ways to receive video programming than ever before. The vast majority of Americans receive local and network broadcast signals via cable and satellite (and will soon have these services available via telephone, mobile and wireless broadband). Meanwhile, the statistics show that a small and declining number of households rely exclusively on a free over the air broadcast signal.

If there is any doubt about this, consider the total lack of public outcry over the recent announcement that Monday Night Football, long a staple of broadcast TV, will soon be available only to satellite and cable households.

Of the nearly 110 million American homes with at least one TV, 68 percent receive a cable signal and 22 percent receive a DBS signal. Our research shows that roughly 2% receive both cable and DBS. In total, approximately 87 percent of American homes will have access to cable or satellite (and thus network and local broadcast feeds).

This means that if the analog cut off occurred today, less than 13% of the population of 110 million TV households would not have access to a broadcast signal through cable or satellite.

And this number is shrinking significantly every year. Cable and satellite penetration continues to grow by about one to two percentage points annually. What's more, the market research firm Sanford Bernstein has just concluded that cable and satellite subscribers are growing 3.6 percent annually.

Further, the number of over-the-air homes will become less relevant as broadband penetration grows. Broadcasters are increasingly providing their content through other means including the Internet and mobile phones. Just recently, Verizon announced that a deal where it would provide NBC's feed over its fiber network.

With respect to consumers with neither cable nor satellite, our research shows that this population's decision not to subscribe generally is not solely for economic reasons. Indeed, our data shows that 52 percent choose not to subscribe for a reason other than cost—with almost a third reporting that they do not subscribe because they "don't watch that much TV."

Those who do not subscribe to cable or satellite watch, on average 30% less television per week than cable and satellite subscribers. Nearly six of ten say television simply is not a high priority for them. Fewer than three in ten indicate that insufficient funds play a role in their decisions not to subscribe to cable or satellite television.

Some opponents of a hard deadline raise concern about the unconnected analog TV sets in households that subscribe to satellite or cable TV, and claim that most of these sets are used with antennas for watching over the air analog signals. In fact, primary viewing most often occurs on the TV that is connected to pay services. More often, the unconnected TVs are shunted to a less used room and hooked up with a DVD, VCR, or video game. Indeed, our research shows these sets are used at least half the time for one of these many alternate uses. In addition, as many cable companies no longer have a monthly charge for additional outlets, this issue has become increasingly irrelevant for cable homes.

In households utilizing an antenna, TVs connected to the antenna are often used for an activity other than watching broadcast television. In these households the TV connected to an antenna is used approximately 40 percent of the time for watching pre-recorded content, playing video games, and other non-broadcast uses.

At the same time, we must acknowledge that some consumers may be adversely impacted by a hard date. That's why we respect and understand the interest of some members in creating a program whereby those viewers would have access to low cost digital to analog converters. In the past, our members have testified that, with economies of scale, converter prices will be in the fifty dollar range by the time of the proposed cut-off date. The only development that could interfere with this projection would be the imposition of state or national energy usage mandates on converters, which would adversely impact converter price and availability.

By the time of a year-end 2008 cut-off—combining present adoption trends for cable and satellite and forecasts for uptake of recently announced TV services from telcos like Verizon and SBC, as well as the jump in purchases likely to occur with a hard cut off date—the number of American homes that would lose their primary video signal should be far less than 13%. The simple fact is that, while an analog broadcasting cut-off is important for our nation, it will have only small practical impact on the viewing habits of the vast majority of Americans, and we believe the types of education and public awareness steps included in the draft legislation can effectively address the needs of those who wish to rely only on broadcast television.

CEA ENDORSES THE DISCUSSION DRAFT'S HARD DEADLINE, AND OFFERS SUGGESTIONS TO BRING ABOUT A MORE EXPEDITIOUS TRANSITION

In the United States, the transition to digital television has always been envisioned as having two purposes. The first was to bring the wonders of digital and especially high-definition TV to American consumers. The second was to capture the public interest and economic benefits of the return of the analog spectrum.

We are now well on our way toward accomplishing the first objective and it is appropriate that we turn our attention to the second.

CEA unequivocally endorses the Staff Draft's establishment of December 31 2008 for the recovery of the analog spectrum. The setting of a date certain will benefit consumers as spectrum is reallocated for purposes ranging from public safety communications to exciting new services such as wireless networking and Internet access.

The Staff Draft also contains a number of other provisions intended to help hasten the digital transition. CEA offers a number of suggestions that will help this Committee craft legislation that will ensure the most expeditious, practical, and consumer friendly result.

Specifically, we recommend the following:

1. Tuner Mandate acceleration: The staff draft requires the FCC to move up the deadline for the inclusion of over the air tuners in 13 to 24-inch sets from July 1 of 2007 to July 1 of 2006—a full year before the original deadline and nearly 2.5 years before the 2008 hard deadline.

We are concerned that, if implemented, such a requirement would severely reduce the retail market for these sets.

Manufacturers need a minimum of 18 to 24 months to plan, develop and deploy new equipment. An accelerated tuner mandate could force some manufacturers who determine that meeting the new regulations is not feasible (and fear inability to comply with the FCC's regulations) to move to tunerless sets or to stop manufacturing altogether the TV models which cannot be fitted with digital tuners—which many manufacturers are reluctant to do and which would defeat the purpose of the tuner mandate itself.

Even if manufacturers were able to meet such a severely foreshortened production schedule, a July 2006 date could result in cost increases that the marketplace cannot sustain. Pushing up the tuner deadline for 13 to 26 inch sets to 2006 would double the development costs for manufacturers, as well as double the price of a typical 13 inch television to consumers. If the product is rejected by lower income and other consumers because the price exceeds their budget, it will not be carried by retailers and, eventually, not produced by manufacturers.

The unfortunate result of accelerating the tuner mandate deadlines would be to decrease the number of DTV tuners in the marketplace, which clearly does not serve the transition. By contrast, the current and anticipated July 2007 date allows time for economies of scale to fully develop. This will lessen the "sticker shock" for consumers, allowing these products a chance to compete against less expensive, tunerless alternatives. In sum, the current tuner mandate is working and should be left as is. Forcing the market could have unintended consequences for consumers, manufacturers, and the DTV transition.

2. Digital Carriage and Non-Degradation: We appreciate that the Draft addresses the important issue of signal degradation, and ensuring that a digital signal is carried under all circumstances. It is fundamental that when cable operators are

carrying broadcast signals digitally, they should not be allowed to reduce the sound or picture quality. American households—most of whom are cable customers—have invested more than $25 billion dollars in high-definition televisions. If a broadcaster is providing HDTV programming and Dolby Digital surround sound, then that is what HDTV owners who subscribe to cable should see and hear.

3. Television Labeling: CEA fully supports educational labels on analog televisions when paired with the certainty of a hard date. However, manufacturers will need a minimum 120 days to include the labels or label text on the outside of the product packaging and on or near the television itself. In order to prevent screen damage upon removal by a consumer or retailer, consideration should be given regarding the necessity of placing the label "on the screen" so long as it is attached to the product as shipped.

CEA urges that any label language should be concise or consumers may not read or understand it. CEA and CERC recommend the following language:

> "This TV has only an 'analog' broadcast tuner so will require a converter box after [date] to receive over-the-air broadcasts with an antenna, because of the transition to digital broadcasting on that date. (It should continue to work as before with cable and satellite TV systems, gaming consoles, VCRs, DVD players, and similar products.)

4. Channel allotments: CEA supports the Draft's proposed timetable of December 31 2006 as the final date for the FCC to issue final broadcaster channel allotments, and an additional seven months to conclude any reconsideration of such allotments. We urge the Committee not to extend the reconsideration period beyond seven months, as this could cause the final end date for analog broadcasting to slip to 2010.

5. Broadcaster Disclosures: In light of our own aggressive consumer education efforts, CEA has been disappointed with the paltry level of DTV consumer education offered by the broadcasters to date, especially the almost complete lack of broadcaster-sponsored public service announcements (PSAs). We commend the Committee for addressing this issue, and we urge that the legislation require increased broadcaster consumer education activities. Specifically, the Committee should consider starting the required announcements at least one year before analog shut-off, and increasing the number of ads from two per day—at least in months closest to the analog shut-off—and imposing separate educational requirements on networks as well as local broadcasters. This makes sense because broadcasters are the ones with the vested interest in transitioning the remaining over-the-air viewers to digital. Broadcastering is a powerful and effective communications medium, and it is essential that the broadcasters themselves step up and do their part to educate the nation about the transition to digital television.

CONCLUSION

Setting a realistic date certain for the end of analog broadcasting and the recovery of the analog spectrum for new purposes is the right thing to do. It is right for consumers, it is right for innovation, and it is right for America's national security. A hard deadline will help foster the creation of new, high-skill jobs, and it will promote America's technology leadership in an increasingly competitive world.

We commend the staff draft as a critical step towards bringing the broadcast DTV transition to a successful and timely conclusion. Meanwhile we will continue our efforts to educate consumers about digital television. I pledge CEA's continuing commitment to working with this committee and other stakeholders to ensure the most timely and consumer friendly transition, and a prompt return of the analog broadcast spectrum.

Mr. UPTON. Thank you. Mr. Yager.

STATEMENT OF K. JAMES YAGER

Mr. YAGER. Thank you, Mr. Chairman, Mr. Markey, members of the subcommittee. I am Jim Yager, Chief Executive Officer of Barrington Broadcasting, which owns and operates four television stations in Michigan, Illinois, and Missouri.

Today, there are nearly 1,500 local television stations on air in digital. Let me be very clear. All broadcasters, large and small, network, non-network, want to see the DTV transition brought to a successful conclusion. As an industry, we have consistently said

that this transition is, first and foremost, about consumers, your constituents, our viewers.

Many good things can be said about the Staff Draft in this regard. For instance, labeling as soon to be obsolete the 20 million analog-only sets that manufacturers plan to sell this year is the right thing to do for consumers. Accelerating the FCC tuner integration deadline is a good thing, again, for consumers. Whether discussing the benefits of DTV, talking about cable carriage, or discussing over-the-air TV sets, the central piece of the equation must always come back to the consumer.

In that vein, let me recommend a few modifications to the Staff Draft that would better protect consumer interests. First and foremost, protecting over the air viewers must be a priority. The GAO has said that there are 21 million households in this country that rely exclusively upon over-the-air reception. That is more homes than are located in the states of Texas, Michigan, Massachusetts, Mississippi, Nebraska, New Mexico, Oregon, Tennessee, and Wyoming combined. Under the draft's hard date, viewers will either lose their television service or have to pay for converter boxes, or even worse, subscribe to pay TV, all just to keep something they currently get for free. Many of these viewers are among society's most economically vulnerable demographics. Low-income senior citizens are disproportionately dependent upon off-the-air reception. African-American households are 22 more likely to rely exclusively on over-the-air reception; 43 percent of Spanish language only households rely solely on over-the-air television. Moreover, when you count the second and third sets in the bedrooms and kitchens of cable and satellite homes, there are 73 million sets in this country that risk being rendered obsolete by a premature hard date.

Some of this committee have recognized that turning off these TV sets will create a firestorm of consumer outrage, and I agree. But even setting aside the political considerations, all of us here share an obligation to protect over-the-air television viewers. Local television broadcasters are ready to work with you to achieve that goal. Consumer interests should also drive the cable carriage discussion. Broadcasters commend the draft's authors for trying to tackle down conversion. The draft will allow cable subscribers with digital sets to enjoy the benefits of DTV. That is good for consumers. Allowing the cable systems to down-convert, as long as they also carry digital signals, will mean that subscribers with analog-only sets won't be cutoff, and that is also good for consumers.

Under the current language, all must-carry stations in the market would be treated the same in terms of down conversion, and that is good for consumers, but the draft leaves room for a scenario in which paid TV services could essentially withhold smaller stations, religious stations, Spanish language only stations, from consumers who have not yet purchased DTV equipment. We see great promise in this section of the draft. However, it does require modest modification, so that all stations in America, large and small, are treated equally with regard to down conversion.

Finally, let me touch briefly on multicast cable carriage. Today, 540 local television stations are using DTV to multicast and better serve the communities with enhanced programming options. These

free services are the beginning of a whole series of new offerings that will evolve to the benefit of consumers, but only if cable does not withhold them. Should cable operators block consumers from receiving this programming, it will be difficult for stations to justify the risks and costs of developing these services, and the potentials of multicasting will not be realized.

This is not a capacity issue. Cable carriage of these stations would occupy no more capacity than carrying a single high definition digital channel. Under the laws of physics, after all, 6 megahertz is 6 megahertz is 6 megahertz. The committee must protect consumers by adopting a strong multicast must-carry rule.

Mr. Chairman, let me close by the draft is a good starting point. As the committee moves forward, local broadcasters are ready to work with you to develop the DTV policy that ends the transition, that clears the analog spectrum, that protects the interests of over-the-air television viewers, and ultimately enhances television for all consumers.

Thank you.

[The prepared statement of K. James Yager follows:]

PREPARED STATEMENT OF K. JAMES YAGER, CEO, BARRINGTON BROADCASTING COMPANY ON BEHALF OF THE NATIONAL ASSOCIATION OF BROADCASTERS

Thank you, Mr. Chairman, for the opportunity to appear today before the Subcommittee to discuss the staff draft of a bill aimed at advancing the digital television transition, while helping consumers to continue to use their analog televisions. My name is K. James Yager. I am CEO of Barrington Broadcasting Company. I appear before you today on behalf of the National Association of Broadcasters,

First of all, I must say that I could not agree more with the purpose of the bill. Advancing the DTV transition while preserving television reception for consumers, particularly those reliant on free-over-the-air television for news, entertainment, local information and critical emergency warnings, has long been the goal of Congress, and of us all. Crafting a plan that also helps consumers to continue to use their analog televisions until they are ready to join the full digital television experience by purchasing a digital set will respond to consumer needs and expectations in a forward thinking way. I support your efforts in this regard.

It is, after all, the consumer for whom the DTV transition was launched. The American consumer, long the beneficiary of the finest television service in the world—in fact the "envy of the world," must continue to receive the best television today's technology can provide. The American consumer deserves the best technical picture quality achievable, the greatest array of programming and information choices, the most varied supplemental services and the surest emergency warning capability. The DTV transition, long underway, will provide this to America's populace—and for free. Consumers deserve and will demand nothing less.

Consumers deserve and will demand as well that their television reception not be interrupted in the midst of this transition to the amazing world of digital television. Which is why a DTV transition bill must contain provisions for continued use of both analog and digital receivers by the vast majority of consumers while they make the transition and buy new sets. Thus, the staff draft wisely includes provisions for cable subscribers, the largest segment of the viewing audience, to continue to use their analog sets after analog broadcasting ceases but at the same time have ready access to the digital version available to their cable-subscribing neighbors who have purchased HDTV receivers.

We are confident that, as the Subcommittee works on the draft bill, it will also work to help free over-the-air consumers continue to watch their analog televisions while they taste true digital television and make their plans to join the digital television revolution. In this regard, it is essential that Congress have a plan to ensure that all households can get television reception. This plan is necessary to meet consumers expectations and prevent widespread outcry. Consumers expect their televisions to work, and they will continue to expect—and demand—this, until they are given advance and clear information to the contrary. The staff draft already includes provisions to give advance warning to the public. Without sufficient warnings, the

public will rebel and will blame all in sight for newly or recently purchased sets going dark. If, on the other hand, consumers are given lead time, adequate explanation and clear consumer information about new digitally-capable sets as well as help equipping OTA-only households, they will embrace the digital television future with enthusiasm and excitement rather than with dismay and outrage.

Broadcasters are ready to serve the public with brand new digital facilities and beefed up digital signals, high definition and high quality digital versions of their favorite shows, specials and sporting events including current and coming plans for multicasts like Final Four basketball and zoned newscasts. We are designing new news sets, purchasing digital cameras and seeking to exploit digital capabilities at every turn. Cable too has readied their digital plants, expanded capacity far beyond expectations and planned for advanced digital services. Set manufacturers have deployed increasingly cost-effective digital sets and sets at various size and price points with glorious high definition picture capability. They are adding digital tuning capability to analog sets, extending those "second tier" sets' lives beyond the analog turn off and providing popular "cable ready" versions of digital sets.

The FCC has adopted measures designed to advance consumer take-up of digital sets, such as mandatory broadcaster build-out deadlines, jaw-boned voluntary measures for broadcasters, programmers, cable and manufacturers, encouraged and approved cable/DTV inter-operability specifications (including tuners in "cable ready" sets) and the all-important tuner mandate. (That measure alone, once it is fully in place, will speed consumer penetration of digital reception capability in the course of normal replacement of televisions and do it in short order.)

Now, this Subcommittee has taken the reins and is moving boldly to advance the digital television transition, encouraging consumers to cross the digital finish line while preserving use of the majority of analog sets for a reasonable period and setting a deadline and measures that will provide consumers with warning, information and education. NAB applauds your efforts to grapple with critical consumer issues, speed up the digital television transition and recover spectrum for national security and public safety use.

We believe and hope that the Subcommittee, as it continues to work on the staff draft will keep consumers at the forefront and meet all the goals set out for the digital transition by Congress in 1997.

Congress sought to achieve three overarching goals in the DTV transition:

(1) Bring the benefits of digital technology with its potential for more programming options and advanced services to consumers;
(2) Avoid the loss of free television to large numbers of consumers stranded with analog-only receivers; and
(3) Reclaim channels 52-69 to be reallocated for other purposes.[1]

The staff draft now before you would achieve Congress' goal of reclaiming spectrum for re-use. It would help advance the digital transition, and hence help advance goal number one, by providing for cable carriage of digital broadcast signals, as broadcast and without material degradation, to entice the largest segment of the public to buy digital sets and by requiring advance warning and consumer education and information, which should incent consumers to buy digital sets. And it would begin to address goal number two by advancing the all-important Tuner mandate so that all televisions 13" and larger sold after July 2006 will receive digital signals and thus many OTA-only consumers will sooner have free, digital reception by normal replacement of television receivers and not be stranded by the analog cut-off.

As it is worked on by the Subcommittee the staff draft bill can and should make clear that cable carriage of broadcasters' digital "primary video" service includes the free multicast programming services that would advance Congress' goal number one of bringing the benefits of digital technology *with its potential for more programming options and advanced services to consumers.*

And of course yet to be added to the staff draft is the missing critical piece necessary for the accomplishment of Congress' goal number two, namely enabling OTA consumers (over 20 million households) to continue to watch their analog televisions after the analog cut-off until they have purchased DTV sets. This critical piece of the puzzle that Congress has already identified (avoiding stranding OTA viewers) will necessarily involve a plan to make digital-to-analog converters accessible to OTA households without digital reception capability. As I have testified previously, many of those OTA viewers are not in a position to purchase new equipment—even a converter box. We must not disenfranchise those citizens.

We do believe that the wise step of moving up the tuner mandate suggested in the draft will naturally equip many OTA households with digital reception. Other

[1] 47 U.S.C. § 309(j)(14)(B).

OTA consumers will have taken the plunge on their own and bought a HDTV or digital receiver, particularly after the consumer education and warnings the bill will require. But for a majority of OTA households, Congress must devise a solution to avoid loss of television service and its emergency warnings to millions of OTA households. This, the OTA viewing public will demand, and deserve. We expect the Subcommittee will be able to fashion a converter plan that will meet the basic needs and expectations of consumers, including those less well off financially, in the 20 million OTA-only households that they will continue to receive television service without subscribing to a pay television service.

NAB believes that the draft bill can provide a useful framework for advancing the digital television transition, avoiding stranding OTA households, reclaiming spectrum for re-use and meet consumers' expectations that their existing televisions will continue working for a reasonable time.

Before turning to each of the provisions of the draft bill in turn for more specific comment, I would like to describe for the Subcommittee the progress broadcasters have made in the DTV transition to date. After addressing the draft bill's specifics, I will lay out for the Subcommittee the challenge it faces as it seeks to grapple with the OTA households/digital-to-analog converter issues, as well as some comments about the converters consumers need.

BROADCASTERS ARE READY FOR THE END GAME OF THE TRANSITION

Even without the final pieces of the puzzle in place, evidence of the remarkable progress made so far can be found everywhere, due in no small measure to broadcasters' commitment and actions. Our industry has spent enormous sums of money and undertaken extraordinary steps to implement the transition, and I am pleased to report that these efforts are paying off. Broadcasters have built—and are on air with—DTV facilities in 211 markets that include 99.69% of all U.S. TV households.[2] At this point in the transition, over four-fifths—84.2%—of U.S. television households have access to at least six free, over-the-air digital television signals, per NAB database figures. According to the FCC, nationwide, at least 1497 television stations in 211 markets are delivering free, over-the-air digital signals today.[3] Currently, more than 92 million households receive six or more DTV signals; 71 million households receive nine or more DTV signals; and a full 30 million households receive 12 or more DTV signals, per NAB database figures. More and more digital stations are overcoming their unique obstacles and going on air almost daily. The digital transition is working and moving ahead quickly, and any claims to the contrary are simply untrue.

In the top ten markets, covering 30% of U.S. households, all top four network affiliates are on-air with digital signals,[4] and in markets 11-30 (24% of U.S. households), all 79 top four affiliated stations are on-air. Thus, all ABC, CBS, Fox, and NBC affiliates in the top 30 markets, representing 53.5% of all U.S. households, are on air with DTV. Even smaller stations in these markets and stations in smaller markets are making terrific progress, with at least 1378 out of a total 1603 stations currently on air in digital,[5] despite the far fewer resources of these stations. In fact, many firms have been forced to mortgage their stations to afford the equipment needed to implement the transition, and without any immediate prospect of revenues to offset these huge investments.

On the programming side, both networks and local stations are providing an extraordinary amount of high-quality DTV and HDTV programming, as well as a growing number of valuable multicast channels, to entice viewers to join the digital television transition and purchase DTV sets. For example, the four top networks currently offer virtually all their prime time programming in HDTV, along with high-profile specials and sporting events like the Academy Awards and the Grammy's, the Masters, and playoff games in all the major professional sports leagues. The WB network also is offering ten or more prime time programs in HD. And this continues to grow.

Local stations are also doing more all the time to supplement the network HDTV and multicast fare, despite the enormous cost for full local HD production facilities. Examples of local HDTV programming abound. Stations that have begun to produce and broadcast their daily local newscasts in HD include WRAL-TV (Raleigh, NC),

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[2] National Association of Broadcasters, *DTV Stations in Operation,* http://www.nab.org/Newsroom/issues/digitaltv/DTVStations.asp (as of May 25, 2005).

[3] *See* www.fcc.gov/mb/video/dtvstatus.html ("Commission statistics").

[4] This includes 38 with licensed full-power digital facilities and two New York City stations with Special Temporary Authority ("STA") currently covering a significant chunk of their service areas and with plans to expand even more.

[5] *See* Commission statistics.

KOMO-TV (Seattle, WA), KUSA-TV (Denver, CO), WUSA-TV (Washington, D.C.), and WJW-TV (Cleveland, OH). HD broadcasts of local special events are numerous, like KTLA's (Los Angeles, CA) broadcast of the Rose Parade in a commercial-free HD broadcast that was simulcast in Spanish and closed captioned and distributed on many Tribune and other stations. Raycon Media this summer will roll-out a new 24-hour TV music video channel on 30 of its stations, which includes coverage of local music artists and local concerts. NBC Universal has signed up enough affiliates for its Weather Plus digital channel to reach 60% of the U.S. Gray Television and UPN are partnering to expand DTV program options.

All of these developments demonstrate that broadcasters are more anxious than anyone to get the transition over and done with. Broadcasters have no interest in shouldering the enormous costs of operating dual facilities any longer than absolutely necessary to avoid disruption to consumers. Building a second transmitter, and then maintaining and powering two transmitters for any period of time is extremely expensive, especially since there will be no opportunity to recover much of these costs. Similarly, any need to repair or replace analog equipment now is little more than wasted resources. Indeed, by the time the transition is over, broadcasters will spend between $10 and $16 billion to fully convert to digital, and we simply cannot afford to strand this investment, or accept any further delays in our ability to provide new digital services to recoup at least some of this investment.

STAFF DRAFT—SECTION BY SECTION DISCUSSION

Sec. 3 Analog Spectrum Recovery: Hard Deadline

The 85 percent DTV penetration test contained in Congress' 1997 Balanced Budget Act, which would be replaced with a hard deadline in the draft bill, was devised to protect the vast majority of consumers from an early end to the DTV transition and the need to replace hundreds of millions of televisions overnight. It would allow consumers to trade-out their analog sets and upgrade to digital sets over time, and in the normal course of replacing televisions. With the hard deadline in the staff draft, consumers will face the prospect of replacing at least their main television sooner than they may have expected.

We believe, however, that other provisions of the draft bill, namely advancing the Tuner mandate and permitting cable downconversion of digital broadcast signals to analog for cable subscribers (who would still receive digital broadcast signals as broadcast), ameliorate much of this concern. We expect that there will be further discussion within the Subcommittee as to whether the specific date in the staff draft is the optimal hard cut-off deadline. And, of course, the major unresolved issue is provision in the bill for OTA households to continue to receive television service after the analog cut-off.

One of Congress' objectives when it authorized the transition to digital beginning in 1996 was to strengthen the over-the-air broadcasting system. A premature end to analog broadcasting before consumers are ready may have the opposite effect of reducing the audience of local stations and thus reducing their ability to provide attractive programming and local public service. If consumers are driven to cable and satellite programming, that would increase those monopoly providers' power and frustrate Congress' goal of improving local broadcasting. This then, continued preservation of free local broadcasting, is another reason that the Subcommittee should make provision for converters for OTA-only households without digital reception capability, including some solution for the less well-off.

The provision of Sec. 3 of the staff draft that directs the FCC to make final DTV channel assignments within the core by December 2006 and conclude any reconsideration of these assignments by July 31, 2007 appears reasonable, given the FCC's current DTV channel assignment plan, and necessary to stations' ability to construct and move to new digital facilities before the analog cut-off. There may however be appeals of final channel assignments that would complicate completing final construction for some stations and consumers. This is all the more reason for the Commission to continue its diligent work to accommodate the channel changes needed by many stations.

We are pleased to see in Sec. 3 of the draft bill six month "status reports" by the Commission on progress in completing Canadian and Mexican coordination of outstanding DTV channel assignments. This coordination, of course, is necessary for all stations to complete DTV facilities construction and be on-air before analog broadcasting is to cease.

NAB notes that, once the channel repacking plan is complete, the FCC must turn to the issue of channels within the core and licenses for digital translators. These "repeaters" of full power stations provide critical television service to thousands in rural and mountainous areas, which must be preserved in the digital switch-over.

We urge the Subcommittee to consult with the FCC as to the most efficient way to protect translator service in light of this newly developing DTV transition plan.

Sec. 5. Consumer Education Regarding Analog Televisions

NAB agrees that consumer education about the coming end of analog broadcasting and the need for converters and warnings on analog sets and in-store displays alerting consumers to the limited useful life of these sets is important for consumers and important to the transition. Promotion and education for consumers about DTV can encourage consumers to purchase DTVs, thereby reducing the number of households needing converters to continue receiving television service. NAB in fact urged provision of these measures in our February 2005 testimony to this Subcommittee. We agree that the Commission should undertake a substantial public outreach program for consumers, and that the various industry parties should participate in alerting consumers to the end of analog broadcasting.

NAB supports the provision in Sec. 5 directing the FCC to preserve and expedite the all-important Tuner mandate schedule. This provision, once fully effectuated, will, on its own, result in sizeable numbers of households becoming digital capable, by dint of consumer replacement of analog televisions in the normal course. Extrapolating from the conclusions of an A.D. Little, Inc. report prepared for NAB and MSTV and submitted to the FCC on the cost of adding DTV reception capability to television sets and timeline scenarios for achieving 85% digital penetration,[6] we estimate that the tuner mandate alone could result in reaching 85% digital penetration by 2009. This powerful provision can reduce the number of digitally-incapable households and thus the number of households needing converters.

NAB supports expediting the turner schedule as the staff draft does, but we suggest that a provision be added to similarly advance the "cable ready" tuner schedule, which mirrors the tuner mandate.

Sec. 6 Digital-to-Analog Conversion and Tiering

The draft bill provision permitting cable operators to downconvert digital broadcast signals to analog at the headend (or in subscribers' homes) for delivery to cable households with analog sets, coupled as it is with mandatory provision of the primary video of the digital signal to subscribers' homes, seeks to achieve the purposes of advancing the (true) DTV transition for cable consumers (enticing them to buy DTV sets), not obsoleting the tens of millions of analog sets connected to cable systems and providing digital broadcast service to cable subscribers with DTV sets. This provision addresses the fundamental flaw of the DTV transition plan previously discussed by the former Chief of the FCC's Media Bureau. The Media Bureau plan allowed only for downconversion and thus would have thwarted the many benefits that undegraded digital service would deliver to cable consumers. We urge the Subcommittee to carefully consider the language of the staff draft to ensure that it achieves the objective of ensuring carriage for all stations.

This provision should also make clear that carriage of the digital "primary video" includes all free broadcast programming, as the Cable Act must carry provision intended.[7] Cable carriage of all multicast digital programming will accomplish for the 65% plus of consumers who are cable subscribers the goal number one of Congress for the DTV transition: bringing the benefits of digital technology with its potential for more programming options and advanced service to consumers. The opportunity for new universal free services was one of the key reasons that Congress authorized the DTV transition, and it is simple economics that the consumer appeal of the HDTV/multicast mix will help drive purchase of digital sets, to the benefit of the consumer. This tremendous consumer benefit, redounding as it will to the benefit and strengthening of the free over-the-air television service as the Cable Act intended, would come at scant cost to cable systems, with their vast complement of cable channel capacity.

Cable operators can no longer claim channel-locked capacity. The enormous growth in cable carrying capacity has been revealed by data submitted by the cable operators themselves, in response to a formal survey request by the Commission.

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[6] "Assessment of the Impact of DTV on the Cost of Consumer Television Receivers," Final Report to MSTV and NAB, Arthur D. Little, Inc., September 10, 2001.

[7] *See* NAB/MSTV/ALTV Petition for Reconsideration and Clarification, FCC CS Docket No. 98-120, filed April 25, 2001; Petition for Reconsideration of the National Association of Broadcasters and the Association for Maximum Service Television, Inc., FCC CS Docket No. 98-120, filed April 21, 2005.

NAB/MSTV/ALTV retained the Merrill Weiss Group to summarize and analyze this data.[8] Some specific conclusions of the Weiss Report are:

- Overall bandwidth delivered to the average subscriber increases from 622 MHz to **752.2 MHz** over the period from yearend 1999 to **yearend 2003.**
- Subscribers receiving **750 MHz or greater total bandwidth** service increase from 56.1 to **86 percent** over the period of the survey.
- Calculations show a capacity **range of 261.8 to 295.7 total program services to the average subscriber** at yearend 2003, with capacity continuing to increase as cable completes upgrades currently underway.
- Calculations show a capacity range of **298.7 to 399.9 total program services to the 86 percent of subscribers** receiving 750 MHz or more total bandwidth service at yearend 2003.

Cable parties agree the problem is that innovative and diverse program offerings as well as new advanced non-video services would be squeezed out by DTV must carry. But as seen in the Weiss Report, in 2003 the *average* cable subscriber will have delivered to it 725.2 MHz of bandwidth, with somewhere between 261.8 to 295.7 total program services, *in addition to a full allocation of channels for non-video services.*

The Weiss Report also includes a chart utilizing the new cable data that shows that the relative burden of carrying both DTV *and* NTSC signals will be less than the initial must carry burden (13.42 percent for analog commercial stations in 1993 and 8.43 percent for both DTV and NTSC at yearend 2003).[9] In addition to the explosion in cable capacity, this is also due to the fact that two digital broadcast television signals can be carried on one six MHz channel.[10] In short, cable cannot properly argue that capacity constraints preclude temporary inclusion of all broadcast signals.

The provision in this section of the draft bill that authorizes the FCC to sunset this "carry-one-carry-all" requirement after five years, depending on penetration of digital capability further limits the miniscule burden on cable operators. Moreover, this sunset feature of the provision limits the small burden on cable to achievement of the benefits of downconversion to consumers, to the transition and to the free local television service.

This provision gives cable consumers the opportunity to trade out their analog sets and upgrade to DTV in a more normal course and thus avoids consumer frustration and outcry.

The Need for a Converter Solution for OTA Households

NAB has recognized that, while the DTV transition was designed to afford consumers the opportunity to trade out their analog receivers for digital sets on their own timetable, the transition must come to a conclusion at some reasonable point. Nonetheless, we remain convinced that any transition plan must protect OTA consumers from the loss of television service and preserves local broadcast service for all cable subscribers. We also believe that consumers will demand a cost-effective solution for analog OTA sets in all homes. We thus believe that the staff draft should include an accommodation for OTA only households and present a solution for analog OTA sets in general. The numbers of sets and consumers at issue here speak for themselves and for the expected public reaction if some real solutions are not included in the Subcommittee DTV plan.

At the time of the conversion to all digital, consumers in 20.5 million households that rely solely on over-the-air ("OTA") broadcast television will lose all television service if they have not procured digital television-capable receivers or converters. This situation has the sure signs of significant disruption, and the Subcommittee is wise to begin to plan for that time, in order to minimize disruption.

NAB believes that protecting consumer's access to their favorite television programming and channels, as well as to news, information and emergency alerts, will be critical to a successful conclusion to our digital television transition. We must not forget that there are millions of unwired television sets in cable and satellite homes as well. Approximately 18.3 million MVPD households have one or more television sets that rely solely on over-the-air television reception. There are today approxi-

[8] Merrill Weiss Group, *Analysis of Cable Operator Responses to FCC Survey of Cable MSOs,* Attachment A to the Reply Comments of NAB/MSTV/ALTV, CS Docket No. 98-120 (filed Aug. 16, 2001)("Weiss Study").

[9] Weiss Study at 15.

[10] *Id.* at 12.

mately 280.5 million analog sets in use.[11] Consumers may not readily dispose of these sets, even if they have purchased a new digital television receiver.

Congress must take the steps necessary to protect OTA sets from obsolescence. Clearly, the free, universal OTA broadcast service must be preserved and the 20.5 million households that rely on it must be protected against loss of television service.

Many OTA households will likely have purchased DTV-capable receivers by the time analog broadcasting ends. But for the remaining OTA households (and for analog sets in all households), there must be a solution, or rather, a series of solutions. One measure already included in the draft bill is promotion and education about DTV, to encourage consumers to purchase DTVs. A near term measure, also included in the draft bill, is to require warning labels on analog-only sets, alerting consumers to the limited useful life of these sets.

The needed key to avoiding disenfranchising large numbers of consumers and to mitigating the disruption for consumers with analog sets, will be making digital-to-analog converters widely available at a reasonable price. Without the widespread availability of low cost digital-to-analog down-converters, Congress risks disenfranchising millions of viewers and rendering useless the analog sets they rely on and, in many cases, just recently bought. Not only is the OTA analog set population enormous (73 million) and the number of OTA-only homes huge (20.3 million households), as I have previously testified, the importance of OTA service cannot be overstated in terms of the OTA viewing public's reliance on the free, over-the-air service for news and information and emergency alerts.

To evaluate the stake the public has in this transition (and to assess the damage that various proposals affecting the digital transition may inflict on the public), Congress must take into account three components of the public interest served by over-the-air television. The first component is the 18.9 percent of viewers that rely solely on over-the-air service, whether because they cannot afford to subscribe to cable or DBS, because cable or DBS service is not available to them or does not provide local broadcast signals, or because they believe in the universal availability of free, over-the-air broadcast service. The second component is the owners of the 28 million of television sets in MVPD homes that are OTA-only analog sets. The third component consists of all viewers, because all viewers rely on over-the-air service in times of weather, terrorist or other emergencies when cable or satellite service may not be available and because broadcast television service provides an effective competitive check on cable and DBS services in terms of price, service, and diversity.

Many of the 18.9 percent of U.S. households that receive television service solely over the air do so by choice, not because economics dictates it. For example, a survey conducted by the Consumer Electronics Association found that "[l]ess than 30 percent [of households that have chosen not to subscribe to cable or DBS] indicate that insufficient funds play a role in their decision not to subscribe."[12] Many Spanish-speaking viewers choose not to subscribe to cable or DBS because these services offer primarily English-language programming.[13]

But there are also a large number of viewers who cannot afford pay television. Twelve percent of American households fall below the poverty line.[14] They should not be forced by government policy into paying subscriber fees that only escalate over time and that they can't afford. They deserve as an option—the preferred and responsible option—a vibrant, over-the-air service that provides the benefits of new digital technologies.

Over-the-air viewers have important, well thought out and legitimate reasons for relying on over-the-air reception, e.g., they believe in the value of free, over-the-air television; they do not want to be locked into the ever-increasing costs of pay television service; they view primarily alternative-language programming; they have additional sets that are not hooked up to cable or satellite, among others. They feel

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[11] NAB appends hereto, as Attachment A, a series of charts constructed for the FCC's proceeding inquiring about options for minimizing the disruption to consumers when the switchover to digital broadcasting occurs. *See Public Notice,* MB Docket No. 04-210, DA 04-1497, May 27, 2004. In that proceeding, the FCC asked for quantitative data on viewers and receivers. *See also* Comments and Reply Comments of the National Association of Broadcasters and the Association for Maximum Service Television, Inc. in that docket. The estimates used in this testimony are from Attachment A.

[12] Comments of the Consumer Electronics Association, FCC MB Docket No. 04-210, August 11, 2004 ("CEA") at 4.

[13] Comments of Entravision Holdings, LLC, FCC MB Docket No. 04-210, August 11, 2004, at 2.

[14] *See Census Bureau says 1.3 million more slipped into poverty last year; health care coverage also drops,* CNN Money (Aug. 26, 2004), available at http://money.cnn.com/2004/08/26/news/economy/poverty_survey.

well-served by the locally-oriented and public interest programming they receive over the air and do not see the need nor do they want to be pushed to ever more expensive pay television services. Because broadcast television is universally available and is the only service used by millions of Americans, Congress should ensure that these viewers are not shut out or marginalized, but continue to have the option to rely on over-the-air reception and still receive meaningful local broadcast service.

To preserve this access and mitigate the disruption for consumers with analog sets, digital-to-analog converters must be widely available at a reasonable price. In this regard, it is important to keep in mind not only the cost of such converters, but the capabilities of those converters. At a minimum, digital converters should be capable of receiving all digital broadcast formats, both HD and SD, on any VHF or UHF broadcast channel, and provide connection to an existing analog TV receiver via a channel 3 (or 4) RF interface. Thus, in conjunction with any analog receiver, the digital converter box should be able to receive, render and display usable pictures and sound from high definition as well as standard definition broadcasts, but would not be required to render pictures and sound at more than standard definition quality.

In order not to disenfranchise current OTA-only television viewers, digital converter boxes should be designed so as to maximize the likelihood that they will work with digital broadcast signals in the same receiving configuration (same antenna, location, etc.) as used for current analog NTSC reception. Thus, the digital converters should be able to receive and display signals under the most challenging receiving conditions, including low signal level, severe multipath and adjacent channel interference conditions. While marginal NTSC pictures are often comprehensible and accepted by TV viewers, the digital "cliff effect" cleanly separates digital TV viewers into those with watchable pictures and those without pictures at all. Thus, because viewers with poor digital reception would be essentially eliminated as television viewers, allowing less than excellent RF receiver performance in digital converters may sacrifice much of the broadcast-only viewing audience when analog transmissions cease.

Current DTV converters are available from about $200 and up, although none are presently available with SD-only outputs. Like all other electronic components, the manufacturing cost of a digital converter box is closely related to the manufacturing volume. NAB and MSTV previously studied the cost of adding DTV capability to television receivers as well as the likely cost of set top boxes.[15] The Arthur D. Little study noted that by the year 2006 digital converter boxes could be expected to sell at retail for under $200, with a manufacturing cost near $100, composed mostly of the fixed recurring costs of manufacturing (a physical box with a TV tuner, power supply, cabinet, remote control, switches, knobs, jacks, etc.) and only slightly impacted by the cost of the integrated circuits required to receive and process digital broadcasts.

Motorola's 2004 testimony before this Subcommittee[16] that a digital converter box with a retail price of $67 is possible in 2007 would indicate that further price reductions from large volume production are possible. Similarly, LG Electronics indicated in FCC filings last summer that the retail price of a simple digital-to-analog converter box could be under $100 by late 2005, assuming production volumes in the millions of units and that they believe that digital-analog TV converter prices may be as low as $50 by 2008, assuming industry-wide demand of tens of millions of units by then.[17]

CONCLUSION

NAB stands ready to work with the Subcommittee as it continues to refine the draft bill on the DTV transition that is the subject of this hearing. We believe that the DTV transition is progressing and the full effect of the tuner mandate coupled with the growing awareness of DTV's amazing improvement to television viewing will move the transition across the finish line in the next few years. But we appreciate the Subcommittee's desire to bring a certain end to the transition and its efforts to date to accomplish that goal. Our abiding belief in the necessity to preserve television service for OTA households without digital capability and the wisdom of devising a cost-effective solution for all OTA analog sets leads us to urge the Subcommittee to focus on this critical remaining piece for its plan to conclude the DTV transition.

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[15] "Assessment of the Impact of DTV on the Cost of Consumer Television Receivers," Final Report to MSTV and NAB, Arthur D. Little, Inc., September 10, 2001.

[16] "Motorola Broadband CTO to Speak Before House Subcommittee on Telecommunications Regarding DTV Transition," Motorola press release, July 21, 2004.

[17] Comments of LG Electronics filed in FCC MB Docket, 04-210, August 11, 2004 at 3.

Attachment A

Estimates Related to Broadcast-Only TV Households and Sets, and DTV Households with Over-the-Air Digital Broadcast Reception Capabilities

David Gunzerath, Ph.D.
Vice President, Research and Information Group
National Association of Broadcasters
August 11, 2004

Overview

The information on the following pages is responsive to questions that were asked in the Public Notice issued on May 27, 2004 by the FCC Media Bureau seeking quantitative data on over-the-air broadcast television users.

The information herein represents a compilation and analysis of data that was collected in the Spring 2004 wave of the Knowledge Networks/SRI *Home Technology Monitor* survey. The National Association of Broadcasters, as a subscriber to this survey, requested that a series of questions be included in this survey on the specific subjects of Broadcast-Only TV Households, Digital Television Set Ownership, and Over-the-Air Digital Television Reception Capability, among other topics. Data on these technologies that was collected from this survey were applied to Nielsen Media Research's 2003-04 U.S. Television Household estimates to calculate some of the figures contained in this report.

Question 1

The number of households that rely solely on over-the-air broadcasting ("over-the-air households") for their television service.

Broadcast-Only TV Households

Total U.S. TV Households	**108,410,160** [a]
% of U.S. TV Households that are Broadcast-only	**18.9%** [b]
1. Broadcast-Only TVHHs	**20,489,520**

a) Source: Nielsen Media Research, *U.S. Television Household Estimates,* 2003-04.
b) Source: Knowledge Networks/SRI *Home Technology Monitor Survey,* Spring 2004.

Question 2

The number of households that subscribe to an MVPD and have one or more television sets that rely on OTA broadcast service.

MVPD Homes with One or More Broadcast-Only Set

Total U.S. TV Households	**108,410,160** [a]
% of U.S. TV Households that subscribe to an MVPD service	**81.1%** [b]
Total MVPD HHs	**87,920,640**
% of MVPD HHs with one or more OTA-only sets	**20.8%** [b]
2. Total MVPD HHs with one or more OTA-only sets	**18,287,493**

a) Source: Nielsen Media Research, *U.S. Television Household Estimates,* 2003-04.
b) Source: Knowledge Networks/SRI *Home Technology Monitor Survey,* Spring 2004.

Questions 3-4

The number of analog-only television sets in use by the households identified in Questions 1 and 2; and the number of DTV sets capable of OTA reception in these HHs.

Total U.S. Television Sets		
Broadcast-Only TVHHs	**20,489,520**	
Mean no. of sets per Broadcast-only TVHH	**2.20**	b
Est. Total Sets in Broadcast-only Homes	**45,076,944**	
MVPD TVHHs	**87,920,640**	
Mean no. of sets per MVPD TVHH	**2.75**	b
Est. Total Sets in MVPD Homes	**241,781,760**	
Est. Total Sets in All Homes	**286,858,704**	
Digital Television/OTA Digital Set Penetration		
Total U.S. TV Households	**108,410,160**	a
% of U.S. TVHHs with Digital TV Set	**5.9%**	b
Est. Total U.S. DTV Sets *	**6,396,199**	
% of DTV HHs with Digital OTA reception capability	**22.9%**	b
Est. Total U.S. DTV Sets capable of OTA reception *	**1,464,730**	
% of OTA capable DTV HHs that are Broadcast-only HHs	**12.1%**	b
Est. OTA capable DTV sets in Broadcast-only HHs *	**177,232**	
% of OTA capable DTV HHs that have MVPD service	**87.9%**	b
Est. OTA capable DTV sets in MVPD HHs *	**1,287,498**	
% of MVPD OTA capable DTV HHs with one or more Broadcast-only sets in the home	**29.3%**	b
Est. OTA capable DTV sets in MVPD HHs with one or more Broadcast-only sets in the home *	**377,237**	
4. Est. Total OTA capable DTV sets in HHs that are either Broadcast-only or are MVPD subs with one or more Broadcast-only sets in the home *	**554,469**	

* Assumes one DTV set per DTV HH, an assumption consistent with the view that repeat purchasing in the early lifecycle stages of new consumer electronics is minimal. See eBrain Consumer Research, *2004 HDTV Research: Exploring Advertising Effectiveness, Debunking Consumer Confusion,* p. 7.

a) Source: Nielsen Media Research, *U.S. Television Household Estimates*, 2003-04.
b) Source: Knowledge Networks/SRI *Home Technology Monitor Survey*, Spring 2004.

Questions 3-4

Analog Sets in HHs with at Least One Broadcast-Only TV	
Est. Total Sets in Broadcast-only Homes	**45,076,944**
Est. Total U.S. DTV Sets *	**6,396,199**
% of DTV sets (OTA capable or not) in Broadcast-only HHs	**4.9%** [b]
Est. No. of DTV Sets in Broadcast-only Homes *	**313,414**
Est. No. of Analog-only Sets in Broadcast-only Homes *	**44,763,530**
Total MVPD HHs with one or more OTA-only sets	**18,287,493**
% of MVPD HHs w/one or more OTA-only sets and DTV set (OTA capable or not)	**7.2%** [b]
Est. No. of DTVs in MVPD HHs w/one or more OTA-only sets *	**1,316,699**
Total MVPD HHs with one or more OTA-only sets	**18,287,493**
Mean no. of sets per MVPD TVHH with one or more Broadcast-only sets	**3.40** [b]
Est. Total Sets in MVPD Homes with at least one Broadcast-Only Set	**62,177,476**
Less: Est. No. of DTVs in MVPD HHs with at least one Broadcast-only set *	**1,316,699**
Est. No. of Analog-only Sets in Households that are MVPD subs with one or more Broadcast-only set in the home *	**60,860,777**
3. Est. No. of Analog-only Sets in Households that are either Broadcast-only or are MVPD subs with one or more Broadcast-only sets in the home *	**105,624,307**
Analog OTA Sets in MVPD HHs with One or More OTA-only Sets	
Mean No. of Broadcast-only sets in MVPD HHs	**0.32** [b]
% of MVPD HHs with at least One OTA-only Set	**20.8%** [b]
Mean No. of OTA-only sets in MVPD HHs with at least One OTA-only set	**1.53846**
Total MVPD HHs with one or more OTA-only sets	**18,287,493**
Est. No. of Analog OTA-only Sets in MVPD HHs with one or more OTA-only sets **	**28,134,576**
Analog Sets in All HHs	
Est. Total Sets in All Homes	**286,858,704**
Less: Est. Total U.S. DTV Sets *	**6,396,199**
Est. Total Analog Sets in All Homes	**280,462,505**

* Assumes one DTV set per DTV HH, an assumption consistent with the view that repeat purchasing in the early lifecycle stages of new consumer electronics is minimal. See eBrain Consumer Research, *2004 HDTV Research: Exploring Advertising Effectiveness, Debunking Consumer Confusion,* p. 7.

** Assumes one DTV set per DTV HH, and assumes that DTV set is connected to MVPD service.

a) Source: Nielsen Media Research, *U.S. Television Household Estimates*, 2003-04.
b) Source: Knowledge Networks/SRI *Home Technology Monitor Survey*, Spring 2004.

Question 5

Demographic Characteristics of "Over-the-Air" Households

HH Characteristic	*% of Group that is OTA HH*	*Index* vs. Total*
Total U.S. TVHHs	18.9	100
Race/Ethnicity:		
White	15.9	84
Black	23.0	122
Hispanic	27.7	147
Spanish Primary Language	43.2	229
Annual HH Income:		
<$30,000	25.3	134
$30-49,999	18.6	98
$50,000+	9.5	50
$75,000+	9.0	48
High Education Level w/in HH:		
HS or less	22.5	119
Some College +	16.7	88
Age of Head of HH:		
18-34	20.3	107
35-49	19.0	101
50+	16.5	87

** **Note:** The above table should be interpreted as follows: 18.9% of U.S. TVHHs are broadcast-only, while 25.3% of TVHHs with annual income below $30,000 are broadcast-only. The index of 134 means the incidence of broadcast-only HHs among this group is 34 percent greater than it is with the general population. In contrast, the index of 48 among the $75,000+ annual HH income group means the incidence of broadcast-only HHs among this group is 52 percent less (100 – 48) than it is among the general population.*

Source: Knowledge Networks/SRI *Home Technology Monitor Survey,* Spring 2004.

Question 6

Geographic Characteristics of "Over-the-Air" Households

*County Size **	*% of Total U.S. OTA HHs*	*% of Total U.S. HHs*
"A" Counties	40.3%	35.7%
"B" Counties	28.0%	30.8%
"C" Counties	16.5%	17.2%
"D" Counties	15.2%	16.3%
Total	100	100

** **Note**: County classifications are based on Census Household counts and metropolitan proximity. "A" counties are heavily populated, highly urbanized areas, while "D" counties are considered very rural.*

Source: Knowledge Networks/SRI *Home Technology Monitor Survey,* Spring 2004.

U.S. Census Region	*% of Total U.S. OTA HHs*	*% of Total U.S. HHs*
Northeast	10.9%	19.5%
Midwest	26.4%	24.4%
South	34.8%	34.9%
West	27.8%	21.3%
Total	100	100

Source: Knowledge Networks/SRI *Home Technology Monitor Survey,* Spring 2004.

Mr. UPTON. Thank you. Mr. McSlarrow.

STATEMENT OF KYLE E. MCSLARROW

Mr. MCSLARROW. Thank you, Mr. Chairman, Congressman Markey, and members of the subcommittee. I am Kyle McSlarrow, President and CEO of the National Cable & Telecommunications Association.

As our industry has explained in prior testimony, the cable industry has not taken a position on establishing a hard date by which the broadcasters must relinquish their analog spectrum. Nonetheless, we recognize the importance that you and other members of this committee place on making the spectrum available for public safety and homeland security purposes, as well as for new commercial uses.

The cable industry is ready, willing, and able to work with you to achieve these important policy goals, and we applaud your leadership and hard work to make them happen. Accelerating the digital transition means that broadcasters will be transmitting in digital format, even though the vast majority of televisions still have analog tuners. NCTA estimates that just in the homes of cable subscribers, there are 134 million analog television sets, including digital subscribers who have one or more analog sets without a digital box. With such a large number of analog sets still in use, the cable industry's first priority is ensuring that our consumers suffer the least amount of disruption to their television service.

We believe the cable industry can best assist the digital transition by guaranteeing that our customers can, on the first day of digital only broadcasts, continue to watch their favorite stations on their existing televisions without having to buy any new equipment or subscribe to any new service. Congress can accomplish this goal by giving cable operators the flexibility to down-convert digital must-carry signals to analog format at the head end, and to carry some of those down-converted signals in lieu of the digital version. We recognize that this is not a perfect solution. Some customers with digital video equipment on the first day of the digital only era might not be able to watch some must-carry stations in digital format, but once a decision has been made to switch exclusively to digital signals, broadcast signals, at a time when most households are analog, there are no perfect solutions.

We believe our proposal minimizes costs and inconvenience to consumers and allows you, as policymakers, not to have to worry about disrupting anyone who is a cable customer, and to do so at no cost to the government. Today, we offer analog to our analog customers, digital to our digital customers, increasingly the opportunity to watch a growing number of channels in high definition. In addition, many of our operators have already announced their own plans to simulcast many analog channels in digital.

Consequently, what is true today will still be true the day after the transition, under our proposal. The bottom line, Mr. Chairman, is that cable customers would notice no change from the day before the transition to the day after, and in the meantime, increasing numbers of our subscribers will continue to switch to digital services, and many of them will become high definition subscribers.

By contrast, Mr. Chairman, as you know, we don't think the staff discussion draft strikes the right balance, and in particular, we have major concerns that what is, in effect, a dual carriage mandate will harm the very consumers and customers that we all care about in this room, and we recognize that it is a discussion draft, and we appreciate the willingness that you and the other members of the committee have exhibited to work with us, and we look forward to working with you to make this bill even better.

Thank you, Mr. Chairman.

[The prepared statement of Kyle E. McSlarrow follows:]

PREPARED STATEMENT OF KYLE MCSLARROW, PRESIDENT AND CEO, NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

INTRODUCTION

Mr. Chairman, Congressman Markey, members of the subcommittee, my name is Kyle McSlarrow. I am the President and CEO of the National Cable & Telecommunications Association and it is a privilege to appear before you today. NCTA is the principal trade association for the cable television industry in the United States. It represents cable operators serving more than 90 percent of the nation's 66 million cable television households and more than 200 cable program networks, as well as equipment suppliers and providers of ancillary services to the cable industry.

I appreciate your invitation to testify today about the staff's draft bill to expedite the transition to digital broadcasting. As our industry has explained in prior testimony, the cable industry has not taken a position on establishing a "hard date" by which broadcasters must relinquish their analog spectrum. Nonetheless, we recognize the importance that you and other members of this committee place on making this spectrum available for public safety and homeland security purposes, as well as for new commercial uses. The cable industry is ready, willing, and able to work with you to achieve these important policy goals, and we applaud your leadership and hard work to make them happen.

OVERVIEW OF THE STAFF DRAFT

Accelerating the digital transition means that broadcasters will be transmitting only in digital format even though the vast majority of televisions still have analog-only tuners. There are currently 110 million television households in the United States, and the FCC estimates that at least 15 percent of them (17 million) rely exclusively on analog, over-the-air broadcast transmissions to get their TV.[1] Moreover, NCTA estimates that—just in the homes of cable subscribers—there are 134 million analog television sets that are not equipped to receive digital transmissions or are not connected to a digital-to-analog set-top box (including digital subscribers who have one or more analog sets without a digital box).

With such a large number of analog sets still in use, the cable industry's first priority is ensuring that our customers suffer the least amount of disruption to their television service. We believe the cable industry can best assist the digital transition by guaranteeing that our customers can—on the first day of digital-only broadcasts—continue to watch their favorite stations on their existing televisions *without* having to buy any new equipment or subscribe to any new service. Congress can accomplish this goal by giving cable operators the flexibility to down-convert digital must carry signals to analog format at the headend and to carry some of those down-converted signals in lieu of the digital versions.

We recognize this is not a perfect solution: some customers with digital video equipment on the first day of the digital-only era might not be able to watch a very few must carry stations in digital format—as is the case today. But once a decision has been made to switch exclusively to digital broadcast signals at a time when most households are analog, *there are no perfect solutions.* We believe our proposal minimizes costs and inconvenience to consumers, and allows you as policy-makers not to have to worry about disrupting anyone who is a cable customer—and to do so at no cost to the government.

[1] Eleventh Annual Report to Congress on the Status of Competition in the Market for the Delivery of Video Programming, FCC-05-13, released February 2, 2005.

What does this mean for cable customers? It means their viewing choices and preferences will not be disrupted. Today, we offer analog to our analog customers, analog and digital to our digital customers, and increasingly the opportunity for customers with high definition sets to watch a growing number of channels in high definition. In addition, many of our operators have already announced their own plans to simulcast analog channels in digital. Consequently, what is true today will still be true the day after the transition under our proposal. The bottom line, Mr. Chairman, is that cable customers will notice no change from the day before the transition to the day after. In the meantime, increasing numbers of our subscribers will continue to switch to digital services, and many of them will become high definition subscribers.

The alternatives to our proposal are far less palatable.

In particular, the staff draft that has been circulated for discussion today fails to strike an appropriate balance. Instead of allowing cable operators to carry down-converted analog signals *in lieu of* the digital signals transmitted by must carry broadcasters, the staff draft would require operators to carry *every* must carry broadcaster's digital signal in digital format. While the staff draft would allow cable operators to carry down-converted analog signals *in addition to* the digital signals, an operator who chose to carry *one* must carry broadcast station's down-converted signal would be required to carry the down-converted signals of *all* must carry broadcasters as well as *all* their digital signals.

This provision would provide cable operators with two options, each of which is worse for consumers than the status quo and worse than the option of allowing carriage of down-converted signals *in lieu* of digital signals. Cable operators would have to choose between (1) carrying all must carry stations only in the digital format in which they are broadcast, or (2) "dual carriage" of all must carry stations in both digital and down-converted analog format.

If cable operators were to carry must carry stations only in digital format, those stations would disappear from the viewable channel lineups of the majority of cable subscribers. Only those with digital sets or digital set-top boxes would be able to view the signals. Indeed, even the majority of customers who subscribe to digital tiers (and therefore have digital set-top boxes) would be unable to view the digital signals of must carry broadcasters if those broadcasters were broadcasting in high-definition, since the set-top boxes of most digital tier subscribers who do not have high definition television sets are not capable of converting high definition signals for viewing on analog sets.

It is hard to imagine any reason for requiring operators to carry broadcasters' digital *standard definition* signals instead of down-converted analog versions of those signals. Any difference in the picture quality between a standard definition digital signal and a down-converted analog version of that signal would surely be outweighed by the fact that only customers with digital sets and set-top boxes could view the digital signals. It is equally hard to imagine any reason for requiring operators to carry must carry broadcasters' *high definition* signals instead of down-converted versions of those signals, since an even smaller number of customers—only those with high definition sets and high definition set-top boxes—could watch the broadcasters' programming.

Yet this last scenario—with the fewest number of consumers able to watch digital programming—is the likely outcome if the only other option for cable operators is to dual carry a broadcaster's signal in digital and down-converted analog format—or, even worse, to dual carry *every* broadcaster's signal as outlined in the staff draft. Dual carriage of every must carry broadcaster's high definition signal *and* its down-converted analog signal would impose an untenable burden on cable operators and programmers. By preempting an excessive amount of capacity on cable systems, it would interfere with the ability of cable operators to offer the broadest array of programming as well as new and innovative digital services to consumers. It would be especially unfair to non-broadcast program networks, which have no guarantee of carriage of their programming in analog or digital format—much less in *both.*

Today, while broadcasters are still transmitting both analog and digital signals, cable operators may fulfill their must carry obligations by carrying a broadcaster's analog signal for viewing by all customers while also allowing operators to carry—in addition—those digital signals that provide additional compelling benefits to customers with high definition sets or digital set-top boxes. This approach has provided broadcasters with incentives to offer compelling digital content in order to gain additional carriage of their digital signals. It has also enabled cable operators and program networks to deploy digital services that best meet the needs and interests of cable customers. Finally, it has ensured continued availability of a must carry broadcaster's primary video programming to the widest cable audience without re-

quiring cable customers to purchase digital television sets or set-top boxes in order to view that primary video stream.

If Congress decides that the analog spectrum needs to be returned before most television viewers are equipped to receive digital signals, it can ensure that these positive developments continue without disruption or significant costs—at least to cable customers, if not to over-the-air viewers. To do so, however, we urge you to revise the approach taken in the staff draft with respect to must carry and down-conversion. Instead of permitting operators to carry down-converted signals *in addition to* mandated carriage of the digital signals transmitted by must carry broadcasters, one needs simply to permit carriage of down-converted signals *in lieu of* the digital signals, while giving operators the discretion to carry both the down-converted and digital versions of the signal.

CABLE IS LEADING THE BROADER NATIONAL TRANSITION TO DIGITAL

In the United States, the broadcasters' transition from analog to digital is only a small part of the larger digital transition that is occurring in every area of our nation's economy. Since 1996, when Congress enabled cable's investment in new technology and programming by substantially reducing regulation, cable operators have completely rebuilt their facilities.[2] With an investment of more than $95 billion, operators have replaced coaxial cable with fiber and installed new digital equipment in homes and system headends, thus enabling the transmission of voice, video, and Internet services in digital format. As a result, cable customers are already enjoying a full complement of digital programming and advanced information services independently of the broadcasters' slower conversion to digital.

For example, cable customers can purchase digital programming tiers that include a diverse array of video networks and commercial-free music channels. Digital customers also have access to video-on-demand programming, digital video recording, and electronic program guides. These features allow programs to be viewed at the customer's convenience and at a time of the customer's choosing. They also allow cable subscribers to block access to programming they do not want their children or households to see. All of cable's digital services can be enjoyed by consumers with analog sets who use digital set-top boxes that convert digital signals to analog. More innovative, interactive video services are on the way, in addition to the Internet and digital telephone services that are already attracting large numbers of customers.

Cable customers with HDTV sets have even more options.[3] They can receive a wide selection of programming transmitted in high definition, including 18 HD cable networks that transmit much of their programming in high definition.[4] In addition, cable operators are now voluntarily carrying the digital channels of a substantial number of over-the-air broadcast stations in addition to those stations' analog signals (either through retransmission consent agreements with individual commercial stations[5] or voluntary initiatives such as cable's recent carriage agreement with public television stations.[6]) Note that cable's contractual agreement with public television stations was reached through private negotiations—not federal legislation or FCC regulations.

CABLE'S CARRIAGE OF BROADCAST SIGNALS

The vast majority of cable customers have analog television sets, and most of those sets—as in over-the-air households—are not equipped with digital set-top

[2] In return for deregulation, the cable industry promised Congress and American consumers that it would provide: (1) facilities-based competition to the telephone companies, and (2) a whole new generation of advanced information and video services—both of which we have done.

[3] The cable industry is rapidly rolling out high definition programming. As of January 1, 2005, cable companies had launched high definition television service on systems passing 92 million homes. At least one cable operator in *all* of the top 100 markets now offers HDTV, and HD over cable is available in 184 of the 210 U.S. television markets.

[4] Cinemax HDTV, Comcast SportsNet HD, Discovery HD Theater, ESPN HD, ESPN2 HD, HBO HDTV, HDNet, HDNet Movies, INHD, INHD2, MSG Networks in HD, NBA TV, NFL HD, Showtime HD, STARZ! HD, The Movie Channel HD, TNT HD, and Universal HD.

[5] In 2002, the cable industry was the first to embrace FCC Chairman Powell's call for voluntary industry action to speed the digital television transition. As of January 1, 2005, cable operators voluntarily carried 504 digital broadcast signals—a 66 percent increase over the 304 stations carried in December 2003.

[6] On January 31, 2005, NCTA reached agreement with the Association of Public Television Stations (APTS) to ensure that the digital programming offered by local public TV stations is carried on cable systems serving the vast majority of cable subscribers across the nation. The boards of NCTA, APTS, and PBS ratified the agreement on February 4, 2005.

boxes.[7] Today, cable operators provide the *analog* signals of virtually all local television stations, which can be viewed by all customers—those with and without digital boxes, and those with and without digital television sets. In addition, operators also provide the *digital* signals of some, but not all, broadcast stations—in particular, those stations that provide compelling digital programming that is likely to enhance the value of cable service for the small but growing number of customers with high definition sets.

Cable's current carriage practices are wholly consistent with what both the marketplace and the "must carry" rules dictate. Existing law requires cable operators to carry the analog signals of all "must carry" broadcast stations during the digital transition, while making carriage of the digital signals optional and subject to "retransmission consent" agreements with broadcasters. The FCC has recognized that requiring "dual carriage" of the analog and digital signals of *all* must carry stations—regardless of whether the digital programming is valuable to the few cable households capable of viewing it on their sets—would do nothing to further the purposes of the must carry requirements or the digital transition while unduly burdening the First Amendment rights of cable operators and programmers.

This sensible balance, which serves the interests of must carry broadcasters, cable operators, cable programmers, *and* cable customers, can be preserved even after broadcasters stop transmitting analog channels. To do so, Congress should allow cable operators to "down-convert" the digital signals of must carry broadcasters to analog at the headend and provide the primary video programming stream of those down-converted signals to cable homes *in lieu of* the primary digital video stream. This will ensure that *all* cable households can receive the programming provided by those must carry broadcasters without having to purchase digital television sets or digital set-top boxes.

Households with HDTV sets would, of course, continue to watch the increasing number of HD channels that exist now, but in some instances would watch a small number of must carry channels in analog even if the broadcaster were transmitting in high definition. I would note that cable operators could still choose to provide the digital signal in addition to the down-converted analog signal if the digital version were uniquely compelling and attractive to customers with digital and HDTV equipment.

Current law requires cable operators to carry must carry signals without "material degradation." The FCC has interpreted this to mean that—after the transition when broadcasters are transmitting only a digital signal—"*a broadcast signal delivered in HDTV must be carried in HDTV.*"[8] This "no material degradation" requirement makes sense if—as is the case under current law—the transition to digital-only broadcasting does not occur until most households are equipped to receive digital signals on their television sets. If Congress is going to impose a "hard date" that occurs *before* most consumers have digital sets or set-top boxes, however, then it should also permit carriage of down-converted must carry signals *in lieu of* the digital signals in order to ensure a seamless transition for consumers.

CONCLUSION

Mr. Chairman, there is much to commend in the staff draft, and there is obviously much more that needs to be done with regard to the issue of providing converters for analog TV sets after the transition. We are grateful for the opportunities we have had to discuss these issues with you, and we want to continue working with you and other members of this committee on our shared goal of ensuring that the maximum number of consumers continue to have access to the same digital programming *after the transition* that they currently enjoy *during* the transition.

I would be pleased to answer any questions you might have.

Mr. UPTON. Mr. Abud.

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[7] There are approximately 172 million television sets in the 66 million cable households across the country. 26 million cable homes subscribe to digital service, but not all digital households have digital boxes on all their TVs. This means that there are approximately 28 million analog TVs in digital homes that will require boxes after the transition. If one adds these 28 million sets to the approximately 106 million analog TVs in homes with only analog cable service (41 million), there are a total of around 134 million analog TV sets in cable homes that will require digital boxes in order to get digital service. The cost of deploying 134 million set-top boxes is $9 billion for a simple $67 digital-to-analog box and $29 billion for a $200 interactive digital cable box.

[8] *In re Carriage of Digital Television Broadcast Signals,* First Report and Order and Further Notice of Proposed Rulemaking, 16 FCC Rcd. 2598, 2629 (2001) (emphasis added).

STATEMENT OF MANUEL ABUD

Mr. ABUD. Mr. Chairman, Congressman Markey, and members of the subcommittee. My name is Manuel Abud, and I am the Vice President and General Manager of KVEA, Channel 52, Telemundo's station in Los Angeles. And I thank you for the opportunity to testify today on behalf of Telemundo regarding the Digital Television Transition Act of 2005 Staff Draft.

My appearance before you today is not simply as a Telemundo executive or as a broadcaster. I am also testifying in my capacity as a member of the Hispanic community. My community is dependent on Spanish language over-the-air broadcasting as their primary source of news and local information. My station alone does 19.5 hours per week of local Spanish language news to serve our viewers.

Forty-three percent of Spanish-speaking households watch over-the-air television exclusively. Moreover, digital television technology has failed to make significant inroads into the Hispanic community. If Congress produces DTV legislation that fails to extend the benefits of DTV to all consumers, Spanish language television viewers will be disproportionately harmed.

The Staff Draft attempts to strike an important balance between the need to bring the digital television transition to a close while protecting the overwhelming majority of consumers who still only have analog television sets. Telemundo supports a hard date for ending analog broadcasts. The December 31, 2008 deadline in the Staff Draft is more realistic than earlier dates. We support the Staff Draft's receiver and retailer labeling requirements, as well as the requirements that cable operators must carry broadcast stations on their basic tier of service after analog broadcasting ceases.

Unfortunately, there are several critical omissions from the Staff Draft. I urge this committee to address these omissions before the bill is formally introduced.

First, the Staff Draft fails to require cable operators to carry multicast programming services from Spanish language broadcasters. Failure to include multicast carriage denies important benefits of DTV for the viewer, such as unprecedented amounts of new and innovative locally originated or community-oriented programming, as well as increased local news and political coverage, weather reporting, and critical public safety information. Failure to require multicast must-carry will hinder the development of new programming choices available to over-the-air and cable consumers alike, and inhibit broadcasters' ability to hold down cable rates by offering competitive programming alternatives to cable.

Without having assurances that the Spanish language audience will have access to multicast programming channels, we cannot create business models with which to fund this initiative.

Second, the Staff Draft fails to include transition assistance to consumers exclusively relying on over-the-air broadcasts, who will need to acquire a digital-to-analog converter box when analog broadcast ceases. Television is a lifeline for many Americans. We cannot permit television screens to go black in the homes of poor people or older Americans who are most dependent on broadcast television.

Finally, the Staff Draft's down-conversion provisions threaten to eliminate access to Spanish language broadcast signals for analog cable subscribers. Under the Draft, a cable operator would be permitted to discriminate in favor of major broadcast stations in choosing to provide an analog feed. Nearly all Telemundo stations are must-carry stations. This makes us unacceptably vulnerable to being shut off from our analog cable viewers, unless cable operators decide to give all analog cable subscribers a set-top box. Don't bet on that. To correct this problem, the Staff Draft should be modified to require that if one digital broadcast signal is down-converted, all local digital broadcast signals should be down-converted.

Cable industry leaders have repeatedly stated that they do not want to disrupt analog cable subscribers as the DTV conversion occurs. All we are saying here, to quote President Reagan, is "Trust, but verify." I appreciate the opportunity to appear before you today and share with you concerns of Spanish speaking Americans who have much to gain but also much to lose in this transition.

[The prepared statement of Manuel Abud follows:]

PREPARED STATEMENT OF MANUEL ABUD, VICE PRESIDENT, GENERAL MANAGER, KVEA-TV, CHANNEL 52, ON BEHALF OF TELEMUNDO

Mr. Chairman, Congressman Markey, and Members of the Subcommittee, my name is Manuel Abud, and I am the Vice President and General Manager of KVEA-TV, Channel 52, Telemundo's station in Los Angeles, California. I thank you for the opportunity to testify today on behalf of Telemundo regarding the Digital Television Transition Act of 2005 Staff Draft.

My appearance before you today is not simply as a Telemundo executive or even a broadcaster. I am also testifying in my capacity as a member of the Hispanic-American community, and as a Spanish language speaker. Many members of my community speak Spanish as their primary language, and are dependent on Spanish language over-the-air broadcasting as their primary source of news and local information. We are the "go to" source for news and information for the Spanish speaking community. The work of this Committee ultimately will determine to what extent Spanish language television viewers continue to have critical access to free over-the-air Spanish language television in the digital era.

Households where Spanish is the primary language are far more likely to rely on over-the-air television than other households. Nationally, 43 percent of households where Spanish is the primary language spoken watch over-the-air television exclusively. At the same time, analysis of the consumer market reveals that digital television technology has failed to make significant inroads into the Hispanic community. Nielsen data indicates that the use of DTV receivers in Hispanic households nationally is the lowest among all consumer groups. As a result, if Congress fails to produce a final DTV transition plan that focuses on extending the benefits of DTV to all consumers, Spanish language television viewers will be subject to a disproportionate share of the resulting harm. In short, we really need the Congress to get the DTV transition right.

In plain terms, getting it right means ensuring that Spanish-speaking consumers have access to the revolutionary benefits that digital television offers, especially High Definition television programming and multicasting. It also means that our audiences are not disenfranchised, whether they rely on over-the-air broadcasting, cable, or satellite for their television. The disruption and cost accompanying the DTV transition must be kept to a minimum.

The Staff Draft

Tested against these core principles, there is much to commend in the Staff Draft. There also is room for substantial improvement as the legislative process moves forward.

The Staff Draft reflects a sincere effort to strike an important balance between the need to bring the digital television transition to a close while protecting the overwhelming majority of consumers who still only have analog television sets. Telemundo supports a hard cut-off date for ending analog broadcasts. The December 31, 2008 date in the Staff Draft provides more time than previous public discussion suggested might be the case, which will help ease the burden of the transition on

consumers. Similarly, the receiver and retailer labeling requirements included in the Staff Draft are critical for improving consumer education about digital television and DTV products, as well as publicizing the impending shut off of analog television. The Staff Draft requires cable operators to retransmit High Definition broadcast programming sent by a broadcast station electing must carry in the same format—High Definition—to its cable subscribers. Moreover, digital broadcast signals must be carried on the basic tier of cable service. Both provisions are good for consumers because they ensure receipt of one of the principal benefits of DTV technology—the glorious video and audio quality of High Definition—at basic cable rates.

Unfortunately, there are several critical omissions from the Staff Draft that have the net effect of denying a principal benefit of digital television technology to Telemundo and its audience, your constituents, and also pose a serious threat of disenfranchising Spanish-speaking viewers across America. I urge this Committee to address these omissions before the final bill is introduced.

First, the Staff Draft fails to require cable operators' carriage of Spanish language broadcasters' multicast programming services. Failure to include multicast carriage as part of digital must-carry will deny one of the most important benefits of DTV to Spanish language television viewers and will hinder the development of new programming choices available to over-the-air and cable consumers alike.

Second, the bill fails to include transition assistance to consumers who only watch television over-the-air, and may ultimately lose access to all television in the absence of a subsidy to finance the cost of purchasing a digital-to-analog converter box. Television is a lifeline for many Americans. We cannot permit television screens to go black in the homes of poor people who are in many ways the most dependent on broadcast television.

Finally, the bill's down-conversion provisions do not go far enough. If a cable operator chooses not to provide an analog feed of any must carry station's broadcast programming, a Spanish speaking analog cable subscriber likely will be left without access to Spanish language broadcast signals unless they make substantial expenditures for set-top boxes or new digital television receivers. Since the vast majority of Spanish-speaking cable subscribers own analog television sets, not digital receivers, they will be injured disproportionately.

Cable Carriage of Multicast Programming Is Essential

Digital television enables broadcasters to offer four or more programming channels in place of their one analog channel. Multicasting, as this is known, enables broadcasters to offer a competitive alternative to cable programming that should help keep cable rates down. Multicasting also allows broadcasters to serve their local communities better than ever before by providing multiple streams of locally-produced or community-oriented programs, including but not limited to: "hyper-local" news, covering smaller parts of large metropolitan areas, programming that covers local political issues and candidates; newscasts that serve specific segments of the local market; local events, including school and amateur sports activities; and local weather, traffic, and emergency information.

In this time of heightened alert against terrorism, local broadcast stations are the first providers of emergency news and information to the public concerning not only actual or potential terror threats to public safety, but also local emergency incidents such as chemical spills, dangerous storms, floods, escaped prisoners, and similar incidents of urgent import. Multicast channels permit the rapid dissemination of such information in much greater detail by enabling stations to target information for particular communities on particular streams.

Beyond emergency or local information, the increasingly diverse character of American society makes the availability of Spanish language local television programming critically important in permitting Spanish language speaking residents to become better integrated into and function more effectively in the communities in which they reside. Multicasting increases the ability of broadcast stations to transmit Spanish language programming to Spanish speaking populations within their service area. Absent a meaningful must-carry requirement that includes multicast carriage, this digital dividend will be sacrificed.

Telemundo and other broadcasters cannot avail themselves of the powerful benefits of multicasting in the marketplace absent cable carriage of multicast programming channels, which is not required by the Staff Draft. Broadcast television in any language is advertiser supported, and our ability to attract advertising dollars is directly tied to the number of viewers we have the opportunity to attract to our programming. The majority of all television viewers watch broadcast television via cable or satellite, and if those services do not carry multicast programming services

the overwhelming majority of television viewers will not have the opportunity to see them.

As a result, the fundamental basis upon which must-carry has been traditionally supported by Congress—the preservation of free over-the-air television—is critical in the context of multicasting. Absent congressional support for multicast must-carry, Telemundo and other Spanish language broadcasters will have no economic model upon which to rely to offer Spanish language viewers new and innovative multicast programming services. As Congress is requiring millions of consumers to invest in new digital equipment in order to watch television, it will simultaneously be depriving them of one of the most important benefits they will receive for their purchases. Failure to include multicast must carry in a final DTV transition bill strikes at the core of the critical balance between reward and risk upon which the success of the DTV transition rests.

A Subsidy Is Needed for Consumers To Purchase Digital-to-Analog Converters

The Staff Draft is notable for not including a subsidy program for households relying exclusively on over-the-air broadcasting to support the purchase of digital-to-analog converter boxes. While Telemundo is not suggesting any particular concept, Telemundo does support the inclusion of a consumer assistance program in this legislation to ensure that households exclusively reliant on over-the-air broadcasting are not literally left in the dark once analog television is shut off. As I previously noted, failure to include a consumer assistance program in the bill will have a disproportionate impact on Spanish language households who are not currently purchasing DTV products and will be hit hardest on December 31, 2008. A subsidy program to defray the costs of a digital-to-analog converter box is a necessity in any mandated end to the digital television transition.

The "Carry One, Carry All" Downconversion Requirement Should Apply to All Broadcast Signals, Not Just Those of Must Carry Stations

Finally, the Staff Draft's attempt to prevent disenfranchisement of analog cable subscribers is a good start but needs to do more for cable consumers. Under the Staff Draft, if a cable operator voluntarily downconverts a must carry broadcast station's digital broadcast signal into analog format, it must provide an analog feed of all other must carry stations. The problem arises, however, if the cable operator chooses only to provide an analog feed of very strong broadcast stations which have elected retransmission consent rather than must carry. In that situation, the cable operator is under absolutely no obligation to provide an analog feed of any must carry stations. Nearly all Telemundo stations are carried pursuant to must carry. We are unacceptably vulnerable to losing our analog cable subscribers unless cable operators decide to give all analog cable subscribers a set top box. Don't bet on that. To correct this vulnerability of our analog cable viewers to disenfranchisement, the Staff Draft's "carry one, carry all" down-conversion requirement should be modified to be true to its term: if a cable operator downconverts any one broadcast signal to analog, regardless of whether that signal is carried pursuant to a retransmission consent agreement or must carry, it should be required to downconvert all other broadcast signals.

Cable industry leaders have repeatedly stated that they do not want to disrupt analog cable subscribers as the DTV conversion occurs. All we are saying, to quote President Reagan, is: "Trust, but verify."

I appreciate the opportunity to appear before you today, and share with you concerns of Spanish speaking Americans who have much to gain but also much to lose in the digital television transition. I stand ready to work with each Member of this Committee to ensure that final digital television transition legislation serves the interests of our Nation and of all television viewers.

Mr. UPTON. Thank you. Mr. McCollough.

STATEMENT OF W. ALAN MCCOLLOUGH

Mr. MCCOLLOUGH. Chairman Upton, Ranking Member Markey, members of the committee, I do appreciate the opportunity to be here to testify today. Circuit City and the other members of the Consumer Electronics Retail Coalition applaud the efforts of this committee and the subcommittee to definitively and meaningfully drive the digital transition to conclusion.

I begin my remarks with what I would consider three sort of basic retail truths. First, retailers can only prosper when we give

customers products they want at prices they are willing to pay. Supply and demand continues to work in the market when left. Second, customers are smart people, and able to make intelligent decisions. We learn that day in and day out in our stores. And third, retailers make a lot more profit when a customer chooses higher priced, more fully featured product than when they buy entry level product, which is often sold at or near our acquisition cost.

It has been suggested by some that there is some sort of a vast consumer electronics retail conspiracy out there to prevent customers from buying better sets, and to insist that they continue to buy low margin, inexpensive sets that will help us lose more money. Obviously, it is entirely in our interest to sell the best product that we can, and to make such an assertion, I am not sure how folks would do that with a straight face. But if you would take a minute, indulge me for a minute.

Imagine what a sales transaction with full information would look like today, and I will use a customer who I will refer to, since there is none here, as a Mr. Jones, who has come in on an advertisement for a 13 inch TV, and we would say yes, Mr. Jones, you can choose between the 13 inch analog TV in our advertisement for $69 or you can get one which also has a digital over-the-air tuner for only $149. I must warn you, however, that if you choose the lower priced set, it may no longer be capable of receiving over-the-air signals at some point in the future, although at this point, we are not certain of when that point will be. What does happen—when that does happen, you will be able to a buy a converter box and continue to receive over-the-air signals, that is, unless you are one of the 85 percent who are receiving signals via cable or satellite already, and it doesn't matter to you in that case. Well, Mr. Jones says well, why am I—why is that happening? Why is this one going to be useless, and why am I going to have to pay twice as much for this other one. We will correctly say, because Congress has mandated that we—that the broadcasters change from analog to digital, and if you are the customer in that case, what do you think will happen? One of two letters will get written. They will write to me, and say you are baiting and switching. You were trying to sell me better product, and trying to disparage low end product. Or they will write to you, and want to know why you have doubled the cost of their television set.

It was interesting in the earlier comments by the members, people are wondering about what happens when the transition date happens. What cards and letters will you get then? The transition date will start, the cards and letters will start coming the day you mandate digital tuners, and start doubling the price of entry level television sets. And the folks it will affect are the folks who can afford it least from the first day.

So if you want to get the transition momentum going, and I think without having to drag customers kicking and screaming along the way, you have to start with a date by which the transition will be unequivocally 100 percent complete. We will do that, if you will set such a date, and it becomes law, that same day, I will make the call and start putting signs up in stores, start changing our Internet, doing everything we can to tell the customers

when we know the day. Until that day, the transaction will look like the one I described, about some uncertain day in the future that we know not when it will be, and just further confuse the issue.

I believe setting a hard date will result in a very substantial, though possibly short-lived market for converter boxes that receive a digital signal from an antenna, and deliver a standard analog broadcast-type signal to good old Channel 3 or Channel 4. Setting a hard date will indeed strand some customers who rely on analog broadcasting now, and we have no objection in principle to the government subsidizing the purchase of products that receive digital broadcasts, or even simply giving away converter boxes.

In my written testimony, I discuss some of the potential difficulties and complications of any subsidy program, and the hard dates that you will have in trying to make this fair to everybody. All we ask is you avoid solutions that work on paper but don't get the real world test.

One level in the Staff Draft that we believe is more of a paper solution than a real one is the tuner mandate. That requires phase-in of—a phase-in requirement where every TV with an analog broadcast tuner also has to have a digital broadcast tuner, whether or not the customer wants it or needs it. When you try to mandate supply in this way, supply and demand in this way, you are always going to get unintended, typically bad, consequences.

The first unintended consequence has been the effect of a so-called 50 percent rule, that for every product manufactured with only an analog tuner, you have to also sell one with a digital tuner as well. Since well over 50 percent of the customers don't need or want broadcast tuners, you will quickly have a supply imbalance, as most customers will make the entirely rational decision for them to buy the less expensive set, or buy one with no tuner at all. We will start selling a few monitors, and that way, we won't have a tuner discussion.

The Staff Draft has a provision that would not allow the FCC to address this situation by moving to an earlier 100 percent rule for mid-sized TVs, again unfortunate if some 27 inch TVs now sell for as little as $180, and according to recent statements by semiconductor manufacturers, we have seen a 2006 DTV tuner could add $80 to $100 to a set. Again, the laws of supply and demand will prevail here. Folks will go for the less expensive sets.

Even more difficult is the staff's provision to move up the mandate for a 13 inch color TV set, for it now sells as little as I pointed out, $69. These products often tend to be bought out of necessity, in many cases, on layaway programs, by people who can't afford to pay more.

In summary, Mr. Chairman, you have absolutely identified the right lever to get the DTV transition moving. Set a hard, unambiguous date by which analog broadcasts must once and for all cease. I believe that any of the ideas advanced in the draft, of all the ideas advanced in the draft, only this, along with an appropriate subsidy provision, is essential to move forward.

[The prepared statement of W. Alan McCollough follows:]

PREPARED STATEMENT OF W. ALAN MCCOLLOUGH, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, CIRCUIT CITY STORES, INC.

I am pleased to be here today on behalf of the Consumer Electronics Retailers Coalition ("CERC") to discuss the digital television transition, and the draft legislation prepared by Chairman Upton's staff. Consumer electronics retailers have been involved in the transition to digital techniques since 1985, when they helped introduce the digital audio Compact Disc. We agree that, two decades later, it is high time to complete this transition. The single most effective thing that you can do is to set a clear, definite, unconditional date for the cessation of analog broadcasts. On behalf of CERC I applaud this Committee for taking the initiative to do precisely this, and pledge our support to making this happen. Once you take this key step, the marketplace can and should be the main driver for helping all the other pieces fall into place. Setting a firm date, and then relying primarily on the marketplace, is the best way to avoid the costs of the transition from being put on our customers who are least able to bear them.

CERC includes, in addition to Circuit City, specialist retailers Best Buy, RadioShack, and Tweeter, and general retailers Target and Wal-Mart. The three major retail associations—the North American Retail Dealers Association, the National Retail Federation, and the Retail Industry Leaders Association, are also members.

As Len Roberts of RadioShack discussed with this Subcommittee on March 10, the fact that digital broadcasting is a final piece of the digital transition makes explaining it to consumers a rather complex proposition, because so many familiar products and techniques are already digital. Product developers have worked to help "analog" and "digital" products work together seamlessly in consumers' homes—so we cannot truthfully tell consumers that "analog" products will stop working on any particular date, because for most purposes, for most consumers, they will continue to work just fine. CERC and its members have been pleased to work with the majority and minority staffs on these complex issues.

DECEMBER 31, 2008 CESSATION OF ANALOG TELEVISION BROADCASTS

CERC has long favored a "hard" and unconditional date for moving exclusively to digital terrestrial broadcasts. In light of the complex budgetary and other factors involved, we have not presumed to tell the Congress what that date should be. The key factor, from our perspective, is that the date be *reliable and unconditional,* so that if we tell consumers that analog terrestrial broadcasting via an antenna will not be delivered after that date, it will be a truthful statement. We do not want to be in the position of telling customers to buy or not to buy products based on inaccurate or unverifiable information.

Once the transition date is clearly and reliably set, we and our vendors can start advising consumers that, on a specific future date, they will need to rely on alternatives to receiving analog signals from an antenna. Speaking for Circuit City, we would expect to begin this education process as soon as Congress sets the date—whether or not we have been legally mandated to do so.

TEXT AND PLACEMENT OF LABEL FOR TV RECEIVERS LACKING DIGITAL TUNERS

CERC members have continually updated their consumer information, in our product displays, advertising, and websites, to explain to consumers the sometimes dizzying array of choices in this transitional environment. (A list of some of the product / interface / service choices that consumers face was contained in Len Roberts' March 10 written testimony to this Subcommittee.) We have also worked with the FCC on its Digital Transition program. The CERC website, and those of my company and some other CERC members, contain the "DTV Tip Sheet" that we jointly developed with the Consumer Electronics Association ("CEA") and the FCC. We also are engaged, at the FCC's request, in distributing hundreds of thousands of these DTV Tip Sheets to our retail stores. CERC also has endorsed mandatory product labeling once a reliable Transition Date has been set. We have the following comments on the Staff Draft's language that provides for such a label:

Text. We think it is important that the label be as concise as possible, while not misleading the consumer or unnecessarily driving him or her to more expensive products. Based on our experience as retailers, *we are concerned that too long a label will not be read by many consumers.* We are accustomed to making complex "forward looking statements" for financial reporting purposes. Our information to consumers, however, needs to be keyed to non-specialists.

While the label text contained in the Staff Draft is accurate, in our experience it is a bit too long to be understood at a glance. We want it to be readily understood

when placed on or near a product on a retail shelf. So, if there is to be a mandated retail label, CERC suggests a more concise formulation that is equally accurate, but that consumers would be more likely to read and understand:

> **Notice: This TV has only an 'analog' broadcast tuner so will require a converter box after [date] to receive over-the-air broadcasts with an antenna, because of the transition to digital broadcasting on that date. (It should continue to work as before with cable and satellite TV systems, gaming consoles, VCRs, DVD players, and similar products.)**

Placement. CERC advised this Subcommittee on March 10 that a mandatory product label will be appropriate once an unconditional transition date has been set. We have suggested to your staff that the label should be packed with or affixed to the television receiver, so a retailer would have the choice of leaving the label on the set for shelf display, or moving it to the vicinity of the set (so as not to cover the screen). We also suggested that the label be printed on the outside of boxes. The Staff Draft is generally in accord with our ideas:

- We agree that the labels should be packed with the covered TV receivers, to reduce uncertainty and to avoid mistakes, at retail, about the products to which the labels apply. To avoid screen damage upon removal by a retailer or consumer, the label should not necessarily have to be "on the screen" so long as it is attached to the product as shipped.
- The Staff Draft might be clarified to assure that a retailer would comply with the requirement if it either leaves the label on the product for shelf display, or moves this label to *the vicinity*[1] of the point of product display. If a label is affixed to a screen, it should not necessarily have to remain there, as this could make it difficult for consumers to compare products.
- As the Staff Draft provides, the label text should also be printed on the outside of the retail boxes for the products to which it applies, because some retailers display TV products *only* in the closed boxes. Requiring that these boxes be opened could lessen a consumer's confidence that he or she is receiving a factory-fresh product.
- We believe that Internet-based sellers (including our own sites) should have equivalent "labeling" obligations at their own "point of display" for the product, or, if there is no "display," at the point of sale.

OBLIGATIONS ON OTHER INDUSTRIES

CERC supports the provisions that would oblige broadcasters to make consumers aware of their digital channels and of the Transition. CERC, like CEA, has been disappointed with the total lack of effort on the part of broadcasters to educate the consumer about the DTV Transition. Instead, broadcasters have chosen to engage in distorting the truth in newspaper advertisements, further confusing the public about the transition. To say, or even to imply, that viewers would necessarily have to buy a new TV receiver after the transition date is simply untrue. As retailers we would like to sell everyone a new TV. We would also like to sell anyone who buys a TV one that has a DTV tuner in it. These are more expensive products and we love to sell them. As retailers in perhaps the most competitive market on earth, however, we must sell consumers what they want and what they need. And we must be honest about how these products will and will not serve consumers in the future.

For our own public education efforts, the key factor is being able to give consumers a clear, reliable date, as of which we can tell them that feature X will no longer work, but feature Y will. Broadcasters already are airing their digital channels, but not at full power. They are not conspicuously promoting these channels. It is in our interest to sell products with DTV tuners, but we need help from the broadcasters in interesting our customers in buying them.

PROVISIONS RE "TUNER MANDATE"

CERC understands the desire to get more DTV tuners into consumers' hands. We also deal every day, however, with the harsh laws of supply and demand. Thus far, under the FCC's "Tuner Mandate" regime, our experience has been that a government mandate trying to force *all* shoppers to buy features that many or most do not in fact need can be *counterproductive* to the success of the Transition. We therefore caution against trying, in this legislation, to use a government mandate rather than the "hard date" itself as the main instrument for influencing supply and de-

[1] CERC believes that a display requirement of a label "in the vicinity" of the product on the shelf is more realistic than the "adjacent to" language of the Staff Draft—depending on how "adjacent" is interpreted, this might not be possible without blocking other important information or features of the product or of another product on display.

mand. In particular, we are concerned about the potential marketplace effects of some of the Draft's provisions:

- They will likely drive the market toward products with *no off-air tuners at all;*
- They will deny useful products to those consumers *least able* to afford television receivers; and
- They seem inconsistent with, and detract from, the Draft's provisions that recognize cable headend conversion to analog transmission as meeting Transition requirements.

The FCC's Tuner Mandate has proved a fragile instrument for driving the television receiver market toward the inclusion of DTV tuners. We have found the mandate to equip 50 percent of all displays of 36 inches and above with digital tuners to be counterproductive. By rationing the ultimate supply of products *without* such tuners, it has encouraged retailers to secure their supplies by ordering these products up front, and to await price cuts on the products that contain tuners, because manufacturers will be required to sell these whether or not there is a demand for them. Such demand will be limited because, while many consumers may need or want terrestrial tuners in their displays, most of our customers are cable and satellite subscribers who might not need or want to pay for a broadcast tuner.

Even the requirement that 100 percent of a size category of television receivers must include DTV tuners can have only limited impact on consumer choices, because not all video display products are "television receivers."[2] In an era in which more than 85 percent of households are connected to cable or satellite, the hard fact is that *most* consumer displays for video programming do *not* need to be "television receivers"—that is, the displays meet consumer needs without relying on *any* TV tuner, analog or digital, because they receive their programming from a cable, satellite, or other set-top box over non-broadcast interfaces.

Faced with these facts, and with their experience to date under the Commission's mandate, CERC and the CEA jointly petitioned the Commission for adjustments in its regulations, in order to align them to the extent possible with demand and product cycles. For the "midsize" TV size category, CEA and CERC recommended that the Commission drop its counterproductive 50 percent rule, but *advance* the effective date of its 100 percent rule, from July 1, 2006 to March 1, 2006. We firmly believe that this proposal would advance the DTV Transition by allowing us to better align the Commission's mandates with supply and demand. Accordingly, we think that the provision in the Staff Draft—that would not allow the FCC to adjust its Mandate dates in this size category so as to eliminate the counterproductive 50 percent rule—would result in fewer, rather than more, DTV tuners being distributed to consumers.

We are also very concerned about, and strongly oppose, a new proposal in the Staff Draft, which would move the Mandate date for televisions with screen sizes of 13 through 24 inches *up* by a year. This proposal would damage *both* the transition *and* the least affluent portion of the viewing public.

- First, these sets are *very* severely affected by price considerations. A consumer who buys a $79 13 inch color television is generally moved by necessity, more than by a search for the most compelling experience. CERC's general retail members have noted that many of these sets are bought on layaway, by customers who do not have bank accounts. Even semiconductor maker Zoran, which has no retail experience and has made predictions based on assumptions that are at best aggressive and at worst unrealistic, admits that adding a DTV tuner on the Staff Draft's timeframe *would increase the cost of such a product by "around $80—$100 depending on the brand and model*."[3] Having the price of a $79 color TV go to $179 by July 1, 2006 would *eviscerate the low end of this product category, punishing the consumers who are least able to afford television receivers.*
- If small TVs become too expensive for their market, the only alternative would be product lines of "receivers" with *no off-air tuners at all.* We have seen this class of "monitor" product emerge already in the large-screen category, even though the DTV tuner is a much smaller component of the cost of a large-screen

[2] A "Television Receiver" is a product having an off-air broadcast tuner and antenna terminals. The Tuner Mandate requires only that products with analog off-air tuners must have digital off-air tuners as well. A consumer display product, such as a PC monitor, may have a variety of interfaces to accept both analog and digital television signals from cable, satellite, or other set-top boxes, yet lack any off-air tuner, so it is not a "Television Receiver."

[3] *See* Zoran May 16, 2005 *ex parte* letter in FCC Docket No. 05-24.

television. A 22 inch LCD display with no tuner, for example, could be an alternative for a consumer who relies on a cable or satellite set-top box anyway.[4]

- Driving analog tuners out of inexpensive televisions seems especially counterproductive in light of the Staff Draft's expectation that cable operators will convert DTV broadcasts to analog broadcast transmissions at their headends, so that consumers with analog tuner TVs will be served. If TV sets do not have analog tuners, there is no point in converting signals to analog at cable headends. And "basic cable" customers who rely on analog tuners to tune these channels will be sorely surprised when their sets have no place to plug in the cable.
- The Congress, concerned as it is about consumers who must bear the costs of the transition, needs to confront the fact that a low-end TV with only an analog tuner may be the only affordable option for some consumers. To drive these sets out of the market prematurely, by advancing Tuner Mandate dates that double the prices of such sets, is to place the burden of the Transition on those who are least able to afford it.

CERC has not asked that the existing Tuner Mandate dates for 13 inch receivers be pushed *back*. But we think it would be contrary to the legislation's purposes, and very unfair to low income consumers, to try to move them *up*.

CONSUMER SUBSIDIES

While the Staff Draft does not address consumer subsidies, CERC is aware that this is an issue under lively discussion. CERC has not presumed to tell the Congress whether there should be such a subsidy or who should be eligible to receive it, but we *do* have concerns over how a subsidy might be applied or administered. Our core concerns are these:

- Ideally, any subsidy should apply to any product, for sale to consumers, with an ATSC (digital off-air) tuner and an antenna terminal. Consumers should have a choice as to which sort of products will serve their marketplace needs. Consumer choice is the best driver of lower prices. However, if the Congress feels constrained, for budgetary purposes, as to the time and scope of the subsidy, it may want to go in the opposite direction, and severely limit the capabilities of products that are eligible for subsidy.[5]
- While various subsidy figures have been floated, Congress should not attempt to fix the prices of real-world products based on the funds available for a subsidy. There are too many variables, including large differences in the projections of costs two years hence, and of the number of households and sets for which there is a demand.[6]
- We believe that any subsidy should flow directly from the government to eligible consumers. Retailers' role in the process should be limited to doing what we do best: providing the best product that fits the consumer's needs and desires.
- CERC would have severe concerns over a subsidy program that would require retailers to advance the subsidy amount to consumers, and to attempt to recover it from the government:
    - Any retailer reimbursement program that would require retailers to carry receivables on our books would need to be a direct obligation of the U.S. government for each sale of a specified product, payable within 60 days of claim and subject to suit for nonpayment.
    - Even so, imponderable questions would abound: How to prevent false claims? Would all retailers, no matter how large or small, be audited regularly by the government? How to apply the program to Internet-based merchants; how to find them to audit the *bona fides* of their claims for reimbursement? CERC members are concerned that the opportunities for abuse presented by such a reimbursement program—as to which internal accounting

[4] We had hoped that prospective inclusion of the "CableCARD" feature, which can be inexpensively added to products with DTV tuners, would heighten their appeal to consumers, but unfortunately these products are not being promoted by the cable industry, and issues have been raised as to their technical support. Of the approximately one million such TV receivers sold to date, only about 40,000 are being served by CableCARDS.

[5] For example, if subsidized converter products contain outputs *other* than the familiar "RF" (channel 3 or 4) coaxial output, they would be useful for enabling many pure "monitor" products to receive off-air signals, even though these products have not been relied upon for analog reception. This could expand and prolong the demand for subsidized products, causing the Congress to consider a time and household limitation as to the availability of subsidized products. We prefer to sell multifunction products, but Congress might have a narrower goal.

[6] There are potential regulatory hurdles, as well. For example, California recently established an energy standard of 8 watts in standby mode for converter boxes. If such state provisions are not pre-empted in the subsidy law they could impede acquisition of products or increase costs.

data would be the only evidence of actual sales—would lead either to loss of credibility for *all* claims, or to government and retail auditing costs that are dramatically out of scale to the amounts being claimed. Would eligibility requirements for retailers be imposed? Would attempts be made to artificially set or define retail prices for particular products? Would adequate provision be made for the expenses imposed on retailers?[7]

Several CERC members have been interviewed by, and voiced their views and concerns to, the U.S. Government Accountability Office. CERC can well understand why subsidy issues have proved vexing and controversial. We must caution that difficulties should not be purportedly "solved" via unrealistic assumptions with respect to how programs might operate.

On behalf of Circuit City and the other members of CERC, I appreciate your invitation to appear today, Mr. Chairman. We will continue to work with the Committee and with the FCC in your effort to add terrestrial broadcasting to those industries that have successfully completed the digital transition.

Mr. UPTON. Thank you. Mr. Knorr.

STATEMENT OF PATRICK KNORR

Mr. KNORR. Thank you, Mr. Chairman and members of the subcommittee. My name is Patrick Knorr, and I am General Manager of Sunflower Broadband, an independent cable business based in Lawrence, Kansas, currently serving 35,000 customers. My company provides cable television, digital cable, high-speed Internet, local phone service, digital video recorders, and other advanced services in eight smaller systems and rural areas throughout northeast Kansas.

I am also the vice chairman of the American Cable Association, with systems in every State represented on this committee. I believe you stand at an historic moment, when we shift from the antiquated policies of the analog world to the exciting and enticing future that the digital revolution can provide. The DTV Transition Act takes an important step in the right direction.

As you consider how best to address the transition to digital television, I believe there are two separate, but intertwined issues that you must balance. First, in rural America, the primary challenge of making the transition work is a unique and inescapable truth that the transition will cost money that small communities and systems simply do not have.

The second is that the value of television is the content that flows over its signal and not just its picture quality. Technologically, dual carriage presents significant problems for small operators. Most small systems will be unable to comply, because their systems cannot carry all those signals due to lack of capacity. The alternative option provided in the bill, solely carrying the primary digital signal, which in most cases is an HD signal, would force every customer in the market to have a costly HD tuner for every single TV in their house. This could cost over $1,000 for every subscriber in a cable system, which rural America cannot afford. ACA members support the ability to down-convert digital signals to analog without the obligation for dual carriage, a concept this committee has discussed.

Additionally, many rural systems will suffer the digital cliff effect, where today's analog signal would reach the head end, but the

[7] CERC would oppose both retailer eligibility requirements and attempts to set or pre-define the retail price of products. Retailers should be reimbursed for their transaction and shipping costs, including the direct and indirect costs of audits—but at present these seem imponderable.

digital signal will not. Congress can solve this problem by making satellite delivered, local into local signals available to operators on a nondiscriminatory basis. The price of not addressing this issue is that many consumers in compliant systems will find themselves still staring at blank TV screens.

As for our concerns about the rules that govern content, ACA members are seeing early signs that broadcasters are using the latest round of retransmission consent negotiations to extract cash payments. We estimate that broadcasters will leverage retransmission consent rules to extract an additional $1 billion from consumers served just by ACA members for the privilege of receiving free over-the-air signals, increasing their bills by $2 to $5 per month. I believe the intent of retransmission consent was to assist with localism, not to promote profiteering. The situation occurs for many reasons, most importantly, network non-duplication and syndicated exclusivity allow broadcasters to block cable operators from obtaining competing signals, eliminating any chance for a free market to emerge.

There are solutions to this dilemma. One, maintaining broadcast exclusivity for stations that elect must-carry, or that do not seek additional consideration for retransmission consent. Two, eliminate exclusivity when a broadcaster elects retransmission consent and chooses to seek additional consideration for carriage. Three, prohibit any party, including a network, from preventing a broadcast station from granting retransmission consent. Four, to codify the retransmission consent conditions imposed on the Fox/News Corp/DirecTV merger to apply to all retransmission consent agreements.

In summary, the retransmission consent and broadcast exclusivity regulations have been used by networks and stations to raise rates and force unwanted programming onto consumers. This must stop, but it won't unless Congress acts.

Finally, I would encourage you to pierce the programming veil of secrecy by authorizing the FCC to obtain specific programming contracts and rate information, in order to develop a programming price index. This PPI would be a very simple, yet effective, way to gauge how programming rates rise or fall, while still protecting proprietary elements of the individual contracts.

Mr. Chairman, this committee stands today at the threshold of the new digital world, but the challenges are many, and the risks are great. Clearly, rural America and its service providers have unique financial and geographical challenges to face while making this conversion. Additionally, outdated regulatory structures that raise rates and force programming on your constituents must be abandoned. I hope you will be able to address both of these problems, and I appreciate the opportunity to testify on ACA's views in this matter.

Thank you.

[The prepared statement of Patrick Knorr follows:]

PREPARED STATEMENT OF PATRICK KNORR, GENERAL MANAGER—SUNFLOWER BROADBAND ON BEHALF OF AMERICAN CABLE ASSOCIATION

INTRODUCTION

Thank you, Mr. Chairman and members of the subcommittee.

My name is Patrick Knorr, and I am General Manager of Sunflower Broadband, an independent cable business based in Lawrence, Kansas, currently serving 35,000 customers. My company provides cable television, digital cable, high-speed internet, local phone service, digital video recorders and other advanced services in eight smaller systems and rural areas throughout Northeast Kansas.

I am also the vice chairman of the American Cable Association. ACA represents nearly 1,100 smaller and medium-sized independent cable businesses. These companies do one thing—serve our customers, who are found in areas the bigger entities don't serve. ACA members don't own programming or content; nor are they run by the large media companies. Collectively, ACA members serve nearly 8 million customers, mostly in smaller markets. Our members serve customers in every state and in nearly every congressional district, particularly those of this Committee.

I believe you stand at an historic moment, when we shift from the 1970s-era policies of the analog world to the exciting and enticing future that the digital revolution can provide. All of us here today want our constituents and customers to receive the best in advanced, high-speed, digital services. The DTV Transition Act takes an important step in the right direction. But at the same time, all of us here today want to ensure that no one is left behind as we actually move from analog to digital.

As we look today at specific legislative proposals concerning the transition to digital television, there are two realities this Committee must take into account.

The first reality is that the transition to digital television is both a question of technology and of public policy—a reality recognized by the existence of this hearing and the very necessity of a DTV bill. Many very important and relevant public policy issues exist today concerning the digital pipe and the content that flows through it. Issues such as "rising cable and satellite rates," "media consolidation," "indecency," "retransmission consent abuse," "family programming tiers" and the "Digital Divide," cannot be viewed as separate from the DTV transition. In fact, these policy issues are the central focus of your constituents and our customers. Moving a limited DTV bill will only postpone and exacerbate marketplace, media, programming, and pricing problems that already exist back home in your districts. The transition from analog to digital, and the underlying need for legislation to facilitate that shift, provides you with the first appropriate opportunity to address these germane issues in a comprehensive manner and I encourage you to take advantage of this moment.

Digital platforms can provide consumers with a wondrous world of new and valuable programming. But if you allow the old rules to stay in place, it will just be more of the same. To move forward on just one technological aspect of the digital revolution without moving forward on the broader issues would be the equivalent of putting a fancy new engine in a rusty old car, thus severely limiting how far and how fast you can really go. To provide consumers with the greatest benefit, it is imperative that you break with the past and recognize that some old ideas no longer serve the greater good.

I strongly urge this Committee to seize this moment to restore the balance of power between programmers, operators, media consortiums and broadcasters. In short, it's time to recalibrate for the digital world so that each is subject to the creative power of competitive market forces and to the consumers they serve.

Moving on to the second reality, provisions in the DTV Transition Act that require dual carriage of broadcast signals will threaten ACA's members very survival and ability to provide advanced services such as high-speed internet, VOIP, and VOD. *Unless the specific financial realities of smaller, independent providers are addressed in this bill, consumers and communities across America will lose access to signals and services they rely on today. In fact, what worries me is that without efforts to help these systems make the transition, many of the small businesses that provide video and broadband services in rural America will cease to exist and the digital divide will actually grow.*

Out in the smaller communities ACA members serve from Illinois to Nebraska to Oregon to Mississippi, it is our core video business that allows us to finance and provide the high-speed services, including digital television, which everyone wants in order to bridge the Digital Divide. It is independent cable companies like mine that provide broadband services to small towns throughout the country. Satellite providers, telephone giants or major cable companies—unlike ACA's members—are not rushing to serve these communities and I can appreciate why. Large companies will never come rushing into these communities because of the cost and difficulty of providing service in rural America. The headlines you read about in the media are about new services and suites of services offered to larger communities. If ACA members' video service cannot survive, I can assure you we will not be around to offer the cable modem services these communities need and the DTV services this Committee wants. In short, video programming is not "just" about programming

choices and rates, but it is also the foundation upon which advanced services, including DTV, are built.

As a result, there are four fundamental and specific changes that must be made if your goal is to provide the greatest diversity of video, DTV and advanced services and to ensure that all consumers—even in smaller markets and rural areas—have access to them.

The four changes are:

1. Ensure that consumers in smaller markets and rural areas are not left behind in the digital transition. Take into account and address the unique financial, technical and operational requirements of those companies that will be providing DTV service in rural America.
2. Update and change the current retransmission consent rules to help remedy the imbalance of power caused by media consolidation.
3. Correct rules that allow for abusive behavior because of media consolidation and control of content.
4. Make access to quality local-into-local television signals available.

What needs to be changed and why:

1. Ensure that consumers in smaller markets and rural areas are not leftbehind in the digital transition. Take into account and address the unique financial, technical and operational requirements of those companies that will be providing DTV service in rural America.

What the DTV Transition Act would require:

Section 6 of The DTV Transition Act Staff Draft would require cable operators to carry the primary digital signal of all broadcast stations, but gives the cable operator the choice to also simultaneously downconvert certain commercial and educational stations to analog and carry both digital and analog signals all on the broadcast basic tier. From the perspective of the independent cable operators serving rural America today, this is a Hobson's Choice—no choice at all—for the following reasons:

Dual Carriage. Independent cable operators in smaller markets and rural areas cannot afford the transition and equipment costs to transmit solely digital signals. They will need to downconvert digital signals to analog so that their subscribers in smaller markets and rural America will have a signal to receive. If dual carriage is the only option, most small systems will be unable to comply due to the fact that the limitations of their systems will prevent them from carrying those signals (as the actual carrying capacity of the pipe into the home will be too small). In addition, the cost of just carrying the digital signal for most ACA members would be over $1,000 per subscriber. That's a cost that many operators cannot recover nor absorb. Additionally, such a solution would force every customer in my market to have a HD tuner for every TV in the house. In short, the requirement in the Staff Draft for dual carriage of both the digital and analog signal will impose significant additional unrecoverable cost and siphon off precious bandwidth used today to offer advanced communications services like high-speed Internet, VOIP and VOD, to name a few.

Hard Deadline. The DTV transition Act imposes a hard deadline of December 31, 2008 when all analog transmission by broadcast stations must cease. The "hard deadline" for the digital transition will impact disproportionately ACA members in rural America and their subscribers in at least two ways:

- Some ACA members in remote areas are subject to the "digital cliff" effect. When broadcasters turn off their analog signal these members will be unable to pick up any signal to retransmit to their subscribers due to the technical characteristics of the digital signal. If a cable operator cannot pick up the digital signal, its subscribers are even less likely to be able to pick up the signal off-air signal with a home antenna.
- Cable subscribers in rural areas are less able to afford digital receivers or converters than subscribers in urban areas.

Retransmission consent. As previously discussed, some broadcasters are already using their DTV signal as a lever to impose more tying demands and higher fees for retransmission consent on cable operators. When a broadcaster prevents a smaller operator from carrying broadcast DTV stations by requiring the operator to carry unspecified multicast or tied programming, or by demanding exorbitant fees, this behavior slows the DTV transition. The bill must address these problems to ensure the increased bandwidth available in the digital world will not just become increased opportunity for more unwanted programming and higher rates to be leveraged down to consumers in rural America.

Digital-to-analog conversion. ACA members support the concept of allowing the digital-to-analog conversion that this committee has considered. Such a decision would allow smaller systems to minimize the disruption to their consumers and would ensure our continued viability. Unfortunately, the current provisions in Section 6 of the staff draft are not a practical option. First, it will again require consumers to purchase new equipment. Second, it places an insurmountable economic burden on operators by forcing them to replace their networks. (See Exhibit 3) The simplest solution would be to give operators the flexibility to downconvert digital signals at the head-end without the dual carry obligation.

The stark reality is that ACA members, without changes to the draft that reflects their unique circumstances, face extinction. This means that consumers served by ACA members in most of the districts represented on this Committee will lose their provider and all of the advanced services these companies provide.

Some may say that the loss in the marketplace of certain providers like ACA members is simply a function of survival of the fittest. We would argue that rural America deserves competition in the video marketplace just like the rest of the country. They also deserve to experience the advanced services that bigger entities are rushing to provide in more populated and profitable areas. The reality is that in the rural markets ACA members companies serve and operate, larger cable television providers will not fill in the service gaps if ACA members are forced to exit their business.

Solutions to ensure no consumer, community or provider are left behind in the DTV transition:

- Provide the ability to downconvert digital signals to analog without the obligation for dual carriage;
- Assist independent cable operators to upgrade facilities to avoid the digital cliff effect and to be able to receive and transmit DTV signals to their consumers;
- Allow waivers of the carry-one-carry-all requirement to ease the burden on smaller operators;
- Make adjustments to retransmission consent rules and exclusivity regulations.

ACA and its members understand and support the need for the Committee to move swiftly to recapture analog spectrum for other noble purposes. However, we strongly caution the Committee to compare the pursuit of such purposes with the potential of leaving consumers and providers in smaller markets and rural America out in the cold with no choices, no signals and lost services. We hope to work with the Committee to develop a DTV transition bill that will recognize the unique circumstances faced by providers and consumers in smaller markets and rural areas so that the DTV transition will take place in positive ways for all consumers, not just those located in populated areas.

2. Current retransmission consent rules must be updated to help remedy the imbalance of power caused by media consolidation

- The current retransmission consent and broadcast exclusivity laws and regulations limit consumer choice and impede independent cable operators' ability to compete in smaller markets and rural America by permitting distant media conglomerates to charge monopoly prices for programming. This situation must not be carried forward into the post-DTV world.

The current laws and regulations allow broadcasters to combine retransmission consent and market exclusivity into a monopolistic hammer. Both of these rules were created to preserve local broadcasting, but now large media companies use those rules to hold localism hostage to increase profits and gain wide distribution for niche programming like SoapNet and more recently LOGO, a gay-themed Viacom Network. These same practices that were used with analog broadcasting are already being applied to the digital world, accelerating the problem.

Across America our association is seeing early signs that broadcasters are using this leverage to lean excessively on independent cable operators to extract cash. *Individually the independent cable systems that are our members usually represent less than a fraction of 1% of any given DMA and have no leverage in negotiations with broadcasters. However, collectively our ACA members serve 8% of all television households and most of rural America. We estimate that this year broadcasters will leverage retransmission consent rules to extract an additional $1 billion from consumers served by ACA members for the "privilege" to receive free over-the-air signals. The average increase in basic cable rates as a result could well be $2-$5 per subscriber per month! Remember, for the consumer, they will not experience any improvement in service nor receive any new programming in spite of paying this increase.*

And broadcasters don't only demand cash for the right to carry their local television stations. Some members of the largest media conglomerates even require our cable companies to carry affiliated satellite programming in local systems and even in systems outside of the member's local broadcast market. In this way, ownership of a broadcast license is used to force carriage of, and payment for, affiliated programming by consumers who do not even receive the broadcast signal at issue. *These forced carriage requirements are also responsible for forcing on some of the most objectionable and indecent content on television today, such as SpikeTV, F/X and Soap Net, among many others.*

Unless this Committee addresses these issues, imposed broadcaster cost, price increases and forced content will continue unabated in the digital world. In fact, increased bandwidth will only add fuel to this fire. Large media companies are using the free spectrum licenses granted by the government for local broadcasting to pad margins and to leverage often questionable nationally delivered content. How those licenses are used is fundamentally part of Congress's obligation in managing the transition of licenses from analog to digital. Congress created the retransmission consent laws in 1992 to protect localism and must change them in 2005 to protect it from the unforeseen consequences of media consolidation in a new digital world.

Broadcasters and programmers get away with these abuses today because the pricing of retransmission consent does not occur in a competitive market. Under the current regulatory scheme, media conglomerates and major affiliate groups are free to demand monopoly "prices" for retransmission consent while blocking access to readily available lower cost substitutes.

They do so by two methods:

- *First,* the network non-duplication and syndicated exclusivity laws and regulations allow broadcasters to block cable operators from cable-casting network and syndicated programming carried by stations outside of the broadcaster's protected zone. In other words, the conglomerate-owned station makes itself the only game in town and can charge the cable operator a monopoly "price" for its must-have network programming. The cable operator needs this programming to compete. So your constituents end up paying monopoly prices.
- *Second,* the media conglomerates require network affiliates to sign contracts that prevent the affiliate from selling their programming to a cable operator in a different market. Again, the conglomerate-owned and operated stations are the only game in town.

In these situations, the cable companies' only defense is to refuse to carry the programming. This has virtually no effect on the media conglomerates, but it prevents your constituents from receiving must-have network programming and local news. This result directly conflicts with the historic goals and intent of the retransmission consent and broadcast exclusivity rules, which were to promote consumer choice and localism.

There are ready solutions to this dilemma. When a broadcaster seeks a "price" for retransmission consent, give independent, smaller and medium-sized cable companies the ability to shop for lower cost network programming for their customers.

Accordingly, in our March 2, 2005, Petition for Rulemaking to the FCC, ACA proposed the following adjustments to the FCC's retransmission consent and broadcast exclusivity regulations:

- *One:* Maintain broadcast exclusivity for stations that elect must-carry or that do not seek additional consideration for retransmission consent. This ensures must-carry remains the primary option for programmers and ensures "localism."
- *Two:* Eliminate exclusivity when a broadcaster elects retransmission consent and seeks additional consideration for carriage. If the programmer decides to forego their must-carry rights in the hopes of putting together a business deal with an operator, allow the operator to negotiate freely without having their hands tied.
- *Three:* Prohibit any party, including a network, from preventing a broadcast station from granting retransmission consent.

On March 17, 2005, the FCC released ACA's petition for comments. *By opening ACA's petition for public comment, the FCC has acknowledged that the current retransmission consent and broadcast exclusivity scheme requires further scrutiny.* Before codifying a new regulatory regime for digital television, carrying all the baggage from the analog world with it, Congress should ask similar questions and make the important decision to update current law to rebalance the role of programmers and providers.

Congress, too, should revisit the retransmission consent laws to correct the imbalance caused by the substantial media ownership concentration that has taken place since 1992. One solution is to codify the retransmission consent conditions imposed

on Fox/News Corp./DirecTV to apply across the retransmission consent process. The three key components of those conditions include: (i) a streamlined arbitration process; (ii) the ability to carry a signal pending dispute resolution; and (iii) special conditions for smaller cable companies.

In summary, the retransmission consent and broadcast exclusivity regulations have been used by the networks and stations to raise rates and to force unwanted programming onto consumers. This must stop, but it won't unless Congress acts. If a station wants to be carried, it can elect must-carry. If a station wants to charge for retransmission consent, let a true competitive marketplace establish the price.

3. Correct rules that allow for abusive behavior because of media consolidation and control of content.

What most consumers do not understand is that my independent company and ACA member companies must purchase most of their programming wholesale from just four media conglomerates, referred to here as the "Big Four"—Disney/ABC, Viacom/CBS, News Corp./DirecTV/Fox, and General Electric/NBC. All of these companies have at their core one of the top four national broadcast networks. In dealing with the Big Four, all ACA members continually face contractual restrictions that eliminate local cable companies' flexibility to package and distribute programming the way our customers would like it. Instead, programming cartels, headquartered thousands of miles away, decide what they think is "valuable" content and what our customers and local communities see. On a basic level the digital transition is a fundamental paradigm shift that could be very disruptive for consumers. Addressing these abuses is an opportunity for congress to (1) provide tangible benefits to consumers; (2) fulfill the true promise of the digital transition by providing more choice and control to consumers; and, (3) to make a consolidated media more accountable to people they serve.

To fix this situation, Congress must update and reform the rules so that:

a. **Local providers of all forms and customers have more choice and flexibility** in how programming channels are priced and packaged, including the ability to sell programming channels on a theme-based tier if necessary;

b. **Tying through retransmission consent must end.** Today, the media giants hold local broadcast signals hostage with monopolistic cash-for-carriage demands or demands for carriage of affiliated media-giant programming, which was never the intention of Congress when granting this power;

c. **The programming pricing gap between the biggest and smallest providers is closed** to ensure that customers and local providers in smaller markets are not subsidizing large companies and subscribers in urban America; and,

d. **The programming media giants must disclose, at least to Congress and the FCC, what they are charging local providers,** ending the strict confidentiality and non-disclosure dictated by the media giants. Confidentiality and non-disclosure mean lack of accountability of the media giants.

Let me explain.

Forced Cost and Channels

For nearly all of the 50 most distributed channels (see Exhibit 1), the Big Four contractually obligate my company and all ACA members to distribute the programming to all basic or expanded basic customers regardless of whether we think that makes sense for our community. These same contracts also mandate carriage of less desirable channels in exchange for the rights to distribute desirable programming.

A small cable company that violated these carriage requirements would be subject to legal action by the media conglomerates, and for ACA's members, this is a very real threat.

These carriage restrictions prohibit ACA members from offering more customized channel offerings that may reflect the interests and values of our specific community. Thus, any interest we may have in offering a family tier as the basic tier to our constituencies is made virtually impossible due to the corporate decisions made by the Big 4 and the terms and conditions they impose on our companies.

More Forced Cost and Channels Through Retransmission Consent

As previously discussed, retransmission consent has morphed from its original intent to provide another means to impose additional cost and channel carriage obligations. As a result, nearly all customers have to purchase basic or expanded basic packages filled with channels owned by the Big Four (See Exhibit 2).

Forced Carriage Eliminates Diverse Programming Channels.

The programming practices of certain Big Four members have also restricted the ability of some ACA members to launch and continue to carry independent, niche,

minority, religious and ethnic programming. The main problem: requirements to carry Big Four affiliated programming on expanded basic eliminate "shelf space" where the cable provider could offer independent programming.

If new independent programmers are to provide outlets for this type of programming to reach consumers, you must ensure that they are not subject to the handcuffs current programming practices place upon them.

Local Flexibility is Needed.

In order to give consumers more flexibility and better value, changes in current wholesale programming practices and market conditions are needed for all providers. Operators must be given more flexibility to tailor channel offerings that work best in their own local marketplaces.

As I have stated, the Big Four condition access to popular programming on a range of distribution obligations and additional carriage requirements. These restrictions and obligations eliminate flexibility to offer more customized channel packages in local markets.

It's important to point out that neither my company nor any ACA member controls the content that's on today's programming channels. That content—decent or not—is controlled by the media conglomerates that contractually and legally prevent us from changing or preempting any questionable or indecent content.

However, if my company and other ACA members had more flexibility to package these channels with the involvement of our customers, current indecency concerns raised by both Congress and the FCC could also be addressed.

Price discrimination against smaller cable companies makes matters worse.

The wholesale price differentials between what a smaller cable company pays in rural America compared to larger providers in urban America have little to do with differences in cost, and much to do with disparities in market power. These differences are not economically cost-justified and could easily be replicated in the IP world as smaller entrants are treated to the same treatment our members face.

Price discrimination against independent, smaller and medium-sized cable companies and their customers is clearly anti-competitive conduct on the part of the Big Four—they offer a lower price to one competitor and force another other competitor to pay a 30-55% higher price FOR THE SAME PROGRAMMING. In this way, smaller cable systems and their customers actually subsidize the programming costs of larger urban distributors and consumers. This sad reality should not carryover with the digital transition.

In order to give consumers in smaller markets and rural areas more choice and better value, media conglomerates must be required to eliminate non-cost-based price discrimination against independent, smaller and medium-sized cable operators and customers in rural America.

With less wholesale price discrimination, ACA members could offer their customers better value and stop subsidizing programming costs of large distributors.

Basis For Legislative and Regulatory Action

Congress has the legal and constitutional foundation to impose content neutral regulation on wholesale programming transactions. The program access laws provide the model and the vehicle, and those laws have withstood First Amendment scrutiny. This hearing provides the Committee with a key opportunity to help determine the important governmental interests that are being harmed by current programming practices.

Furthermore, based in large part on the FCC's actions in the DirecTV-News Corp. merger, there is precedent for Congress and the FCC to address the legal and policy concerns raised by the current programming and retransmission consent practices of the media conglomerates. The FCC's analysis and conclusions in the News Corp. Order persuasively establish the market power wielded by owners of "must have" satellite programming and broadcast channels and how that market power can be used to harm consumers. That analysis applies with equal force to other media conglomerates besides News Corp.

Pierce the Programming Veil of Secrecy—End Non-Disclosure and Confidentiality.

Most programming contracts are subject to strict confidentiality and nondisclosure obligations, and my company and ACA members are very concerned about legal retaliation by certain Big Four programmers for violating this confidentiality. Ask me what I have to pay to receive a given channel and I cannot tell you due to terms and conditions the conglomerates insist upon. Why does this confidentiality and non-disclosure exist? Who does it benefit? Consumers, Congress, the FCC? I don't

think so. Why is this information so secret when much of the infrastructure the media giants benefit from derives from licenses and frequencies granted by the government?

Congress should obtain specific programming contracts and rate information directly from the programmers, either by agreement or under the Committee's subpoena power. That information should then be compiled, at a minimum, to develop a Programming Pricing Index (PPI). The PPI would be a simple yet effective way to gauge how programming rates rise or fall while still protecting the rates, terms, and conditions of the individual contract. By authorizing the FCC to collect this information in a manner that protects the unique details of individual agreements, I cannot see who could object.

Armed with this information, Congress and the FCC would finally be able to gauge whether rising cable rates are due to rising programming prices as we have claimed or whether cable operators have simply used that argument as a ruse. A PPI would finally help everyone get to the bottom of the problems behind higher cable and satellite rates. We at ACA are so convinced that this type of information will aid you in your deliberations that we challenge our colleagues in the programming marketplace to work with us and this Committee to craft a process for the collection of that data.

In short, without disclosure, there is no accountability. The digital transition is about how to manage broadcasting in America and is an opportunity to make things fundamentally better for consumers.

4. Make Access To Quality Local-Into-Local Television Signals Available.

In the previous section, I outlined the enormous technical, financial and operational challenges facing independent cable in smaller markets and rural areas to accomplish the DTV transition. While we are committed to making the transition work, it will be no small feat to make this transition happen in ACA members' marketplaces without putting the many advanced services we now provide at great risk.

Another important reality about digital signals is that they will not likely have the same distribution range as the analog signals they replace. One way to help solve this problem is to grant cable access to local-into-local television signals already being delivered by direct broadcast satellite (DBS) companies.

The digital spectrum assigned will not have the same propagation qualities as many of the analog signals they replace. As a result, while most metropolitan cable operators and DBS will have access to improved digital signals, some rural cable operators will find they no longer can receive any usable signal at all. This is what refered to as the digital cliff. In local-into-local markets, DBS can deliver clear local broadcast signals regardless of distance from transmitters. ACA members and their buying representative, the National Cable Television Cooperative in Lenexa, Kansas, have asked both DirecTV and EchoStar for the right to buy and pay for access to DBS' local-into-local signals where a good quality signal is not available over-the-air. However, the DBS duopoly refuses to allow rural cable systems to receive these DBS-delivered broadcast signals, even though DBS now sells the same signals to private cable operators, satellite master antenna system owners, and several Bell companies.

Ironically, DBS now refuses to grant access to its programming, despite the favored regulatory treatment it received to have access to cable programming. The ability to receive local broadcast signals was the reason Congress enacted the Satellite Home Viewer Improvement Act in 1999, which Congress recently reauthorized through SHVERA. But SHVERA does nothing to solve the local signal problem for rural cable operators and customers.

Congress can solve this problem by revising the retransmission consent laws as follows:

> *In markets where a satellite carrier delivers local-into-local signals, that satellite carrier shall make those signals available to MVPDs of all types on non-discriminatory prices, terms and conditions where the MVPD has the consent of the broadcaster to retransmit the signal.*

ACA's recommended revisions to the laws and regulations governing retransmission transmission consent and broadcast exclusivity are modest. But they will advance the widespread dissemination of good quality local broadcast signals to your constituents and will address the serious competitive imbalance currently hurting small market and rural cable systems. Carrying this restrictive situation into the DTV world would further compound this mistake. All video vendors must be able to have access to quality signals if they are going to be viable competitors within in the DTV marketplace.

CONCLUSION

This Committee stands today at the threshold of the new digital world, but it is also a precipice. The challenges are many and the risks are great.

This legislation provides you with the power to determine whether to recognize that rural America and its service providers have unique financial and geographic challenges to face while making this conversation. Additionally, at the same time, you have the opportunity to repudiate outdated regulatory structures that raise rates and force programming on your constituents while replacing it by injecting market-based solutions. I hope you will be able to address both halves to this problem and appreciate the opportunity to testify on ACA's views on these matters.

Mr. UPTON. Thank you. Mr. Souder.

STATEMENT OF STEVE SOUDER

Mr. SOUDER. Good afternoon, Chairman Upton, Ranking Member Markey, and members of the subcommittee, and especially Representative Wynn, from my home country and district. Thank you.

My name is Steve Souder, and I am the Director of the Montgomery County, Maryland 911 Emergency Communications Center. I previously served as the administrator of the Arlington County, Virginia 911 Public Safety Emergency Communications Center, where I served on September 11, 2001, and was one of the many public safety communications leaders called upon to address the terrorist attack on the Pentagon.

I want to thank you, Mr. Chairman, for scheduling this hearing, and for focusing on the communications needs of the Nation's first responders. It is an honor to be here with you today and support your mission to clear needed spectrum for first responders by ending the DTV transition as soon as possible. It is important that we set aside and close the date on December 31, 2006, as soon as possible, because every year that we wait is another year too late.

You concurred with the 9/11 Commission in last year's intelligence reform legislation that dedicated spectrum must be made available to our Nation's police officers, firefighters, emergency medical technicians, to enable them to carry out their critical mission. The spectrum referred to in the 9/11 Report is in the 700 megahertz band. Public safety identified the need for this spectrum eight long years ago. Ironically, and on September 11, 1996, a report by the Public Safety Wireless Advisory Committee. That report rather eerily indicated that the 24 megahertz of spectrum under consideration today should be available within 5 years. As we all know now, exactly 5 years to the day was the deadly day that the terrorists attacked our soil, which gave rise to the 9/11 Commission, which again urged that these frequencies be made available to public safety.

The events of September 11, 2001 have brought much attention to the manner in which the terrorist attacks on the Pentagon was responded to by local law and fire rescue personnel that were indeed the first responders, and how interoperability was achieved at that event. Today, technology exists to improve the quality and effectiveness of public safety communications operations. But public safety must have access to the 700 megahertz spectrum by the end of 2006 to deploy interoperable voice and advanced data technology as early as possible, in order to benefit from that technology.

In 1997, this committee and the FCC recognized the need to allocate spectrum in the 700 megahertz band for mission-critical State

and local public safety communications. This allocated spectrum continues to be used for analog TV and needs to be cleared. In reality, there is no hard date for ending the DTV transition, leaving public safety and the deployment of vital technology in limbo. Until this problem is addressed, 5 percent of the country's TV stations block improved public safety communications for over 50 percent of the Nation's population.

Finally, I strongly concur with the statement made by the Association of Public Safety Communications Officials, the Congressional Fire Services Institute, the International Association of Police Chiefs, the International Association of Fire Chiefs, the Major Cities Chiefs Association, the Major Counties Sheriffs Association, the National Association of Counties, the National League of Cities, and the National Sheriffs Association, in a letter they sent to the committee on May 5, 2005.

In that letter, Public Safety strongly challenged the letter that the National Association of Broadcasters had sent to the committee on March 4, 2005, which said that the broadcasting remains a primary first responder during times of crisis. Members of the committee, law enforcement officers, firefighters, and emergency medical providers, and communications dispatchers and call-takers are the Nation's first responders, not the NAB.

In closing, Mr. Chairman, making the public safety spectrum available nationwide by the start of 2007 will not happen without the committee's leadership. We again urge the Congress to fulfill the promise made in last year's Intelligence Reform and Terrorism Prevention Act. Please adopt legislation this year that provides public safety with early date certain access to 700 megahertz spectrum that we desperately need for the security of our homeland, our hometowns, and the citizens you represent are at stake.

Thank you very much.

[The prepared statement of Steve Souder follows:]

PREPARED STATEMENT OF STEVE SOUDER, DIRECTOR, MONTGOMERY COUNTY MARYLAND 911 EMERGENCY COMMUNICATIONS CENTER

Good morning Chairman Upton, Ranking Member Markey and Members of the Subcommittee. It is a pleasure to appear before you. You have both been great champions for First Responder communications capabilities.

Thank you for holding today's hearing on the need to expeditiously end the digital television transition. The transition must be concluded as soon as possible and with a hard date. Indeed, every year we wait is another year to late for America's first responders and their access to critical communications capabilities in the reclaimed spectrum once television broadcasters follow the plan and finally migrate to digital services.

I also want to thank Chairman Barton for powerfully changing the terms of the DTV debate and Ranking Member Dingell who has also committed to setting a hard transition date which will enhance the safety and security of our citizens. It is no longer a question of will the DTV transition ever occur—but when will Congress make it happen. On behalf of the public safety community, I urge you to conclusively end the transition as promptly as possible.

My name is Steve Souder, and I am the Director of the Montgomery County, Maryland 9-1-1 Emergency Communications Center. In 1982, I was assigned to the District of Columbia Fire Department Communications Center and subsequently became the Administrator of the Arlington County, Virginia 9-1-1 Public Safety Emergency Communications Center, where I served on September 11, 2001 and was one of the public safety communications leaders called upon to address the terrorist attack on the Pentagon.

Our people at the Montgomery County 9-1-1 Center, like communications officers across the country, are the most unsung of the unsung heroes, yet heroes they are

in every respect. They operate behind the scenes in emergency communications centers which are in many ways similar to NASA's Mission Control Center, both in the sophistication of the technology utilized and in the critical nature of the mission performed.

Montgomery County opened a new Emergency Communications Center in July of 2003 and completely updated its emergency communications systems. The entire ECC staff had to change the way they had done business for 15 years and adjust to many new types of equipment and procedures, including: a new radio system; Computer Aided Dispatch system; Automatic Vehicle Location system; Automatic Vehicle Routing Recommendation system; Mobile Data Terminal system; and, a Geographic Information (mapping) System. Public safety communications capabilities, nationwide, must continually advance to the cutting edge and increasingly must become mobile as our first responders go about the business of protecting the public, their property and themselves at times we all recognize to be dangerous.

Preventing or Responding to Emergencies Requires Mobile Public Safety Communications Tools and Spectrum

The events of September 11, 2001 brought much attention to the manner in which the terrorist attack on the Pentagon was responded to by First Responders and how we communicated with each other. The preparations that allowed for seamless and effective radio communications among the initial local area Fire-Rescue-Emergency Medical Service and Law Enforcement agency response on that fateful day were necessitated by a tragic event that had occurred twenty years prior and less then ′ mile from the Pentagon. That event was the crash of Air Florida Flight 90 onto the 14th Street Bridge and into the Potomac River after taking off from Washington National Airport on January 13, 1982 during a severe snowstorm.

That crash highlighted the concern public safety agencies had been expressing for many years concerning the lack of interoperable radio systems and the lack of adequate spectrum on which to effectively communicate. As a result of that event, local area public safety communications personnel pledged themselves to, within their ability, correct or at least improve this situation. My testimony today is a continuation of that duty to seek to improve communications capabilities for my fellow public safety officers as we seek to carry out our vital mission to protect others. I thank you for this opportunity.

As you know, the report of the National Commission on Terrorist Attacks Upon the United States also highlighted the critical need of the public safety community to have access to radio spectrum for mission critical communications.

The 9/11 Commission Report

The Report by the 9/11 Commission reviewed how emergency responders communicated or, in many cases, were unable to communicate, during the tragic events of September 11, 2001. Absent proper resources, communications capabilities can become overwhelmed and less effective. Proper resources include radios that can interoperate among agencies and spectrum to ensure sufficient system capacity. The 9/11 Commission recognized this and recommended that Congress pass legislation to provide access to spectrum for public safety.

The spectrum referred to in the 9/11 Report is in the 700 MHz band and is squarely at the heart of the DTV transition debate—without ending the transition this spectrum will never be utilizable by First Responders nationwide. Indeed, public safety identified the need for this spectrum more than eight years ago in a September 11, 1996 report by the Public Safety Wireless Advisory Committee (PSWAC). That report indicated that the 24 MHz, which I am discussing with you today, should be available within 5 years. As we all know five years—to the day—from the issuance of that public safety study, the terrorists attacked America. The attacks led to the 9/11 Commission which again, urged that these frequencies be made available to public safety. Let's commit to not having another repeat. This 9/11 Commission recommendation has not yet been enacted by the Congress, and public safety respectfully asks that you swiftly do so.

After the PSWAC report was published, Congress acted quickly and allocated the spectrum to public safety in 1997. However, eight years later, television stations operating on channels 62, 63, 64, 65, 67, 68 and 69 prevent public safety access in most major urban areas where the demand for spectrum is the greatest. The reason is the continued use of the spectrum for analog broadcast television services—and there is not a date certain as to when the spectrum will be fully transferred to public safety's use. The communications needs of public safety are too important to allow this uncertainty to continue.

As you know, current law sets December 31, 2006 as the date for clearing television from the band. However, this is not a firm date. Broadcasters do not have

to clear out until 85% of the households in their markets have the capability to receive digital TV—they have the ability to enjoy virtually unlimited extensions of this deadline based on this loophole. So, there is no "hard date" when the transition will end and the spectrum will really be accessible to public safety everywhere. I urge this Committee not to ignore the recommendation of the 9/11 Commission that legislation be enacted that would clear this spectrum nationwide for public safety use no later than year-end 2006. Indeed, on December 8, 2004 when you passed the Intel Reform legislation, the Congress expressed its intent to pass DTV-ending legislation in 2005 and that the hard date should be as close to year-end 2006 as possible. I urge you adhere to this important mission.

First Responders Need this Spectrum for Critical Services

To serve the American people, First Responders need systems designed specifically for mission critical operations. Effective mission critical mobile communications systems are vital to our operations. Police officers, firefighters, emergency medical personnel and their departments must exchange information in the field that can help protect public safety officials and the citizens we serve. This information formerly was exchanged by voice. With technological advances, as public safety entities strive to increase effectiveness against more complicated challenges we also need the capability to reliably transmit and receive high performance data, still images and video. Increased communications requirements lead to the need for access to more spectrum.

These channels are critical to public safety. The 700 MHz band's proximity to existing public safety operations in the 800 MHz band allows public safety agencies to engage in vital expansion of current 800 MHz narrowband voice and data systems for interoperability and regional coordination. Also, 700 MHz is the only dedicated spectrum allocation where public safety can implement advanced mobile wide area systems that bring high-speed access to databases, the intranet, imaging and video to first responders out in the field. This technology offers a whole new level of mobile communications capabilities, which is far beyond today's voice and low speed data applications. For example:

a. An officer or agent could transmit video of a potential bomb, or biological weapon and get real time counsel from an expert in another location.
b. Law enforcement could instantly send or receive a photograph of a missing or abducted child or transmit live video of footprints, fingerprints and evidence to speed analysis and apprehension of perpetrators.
c. Firefighters could access building blueprints, hydrant locations hazardous material data and other critical information.

As you can see, the public safety applications that will be possible in the reclaimed spectrum are the very type that are too valuable for our safety and security to remain in the on-deck circle indefinitely.

I urge the Committee not to be deterred from sticking as close as possible to the December 31, 2006 goal because spectrum auction revenue timing projections for the reclaimed frequencies might make it more expedient to draw the transition further out into the future. In my view, the cost of not making the transition happen as soon as possible costs the nation too much in terms of reduced preparedness. One thing I do know from all of the experts is that dangerous people still seek to do more harm on our soil—We just don't know when. Another thing I know is that we should not have to say anymore that the DTV transition will end in America—We just don't know when. Help First Responders to have the best fighting chance with the tools we need. The costs of not doing so are too high.

In closing, Mr. Chairman and Members of the Committee, making this spectrum available to support first responders as close as possible to the end of 2006 will not happen without your commitment and leadership. I urge you to take swift action to make higher use of this spectrum a near-term reality for law enforcement, firefighters, emergency medics, and your better-protected constituents.

Thank you.

Mr. UPTON. Exactly 5 minutes.

Mr. SOUDER. Thank you.

Mr. UPTON. Mr. Kimmelman.

STATEMENT OF GENE KIMMELMAN

Mr. KIMMELMAN. Thank you, Mr. Chairman, Congressman Markey, members of the subcommittee. On behalf of Consumers Union, the print and online publisher of Consumer Reports, we appreciate

the opportunity to testify, and thank you for bringing this important issue of digital television to the legislative process.

Now, I am not going to try to scare you about how consumers are going to react if there is a tax on their TVs, or the cost of a TV goes up 25 or 50—you have already done enough to scare yourselves, I believe, as to what is at stake here.

I would like to step back and just ask you to look at this and the rationale for why consumers really ought to be held harmless in this. Who drove this process to a digital television transition? Did you ever hear from constituents that they are dying to have a digital television transition? I haven't heard from it. Consumers who want digital equipment know how to buy it, and those who can afford to do it are doing it, and you heard they are doing it in droves. People who want it can get digital equipment.

We know this is driven by government policy, and there is no question about the fact. There is no reason to be ashamed that public safety is at risk. There is no reason to be ashamed that through auctions, you can find greater financing for important government services that the American people need, and hopefully, you will find opportunities to expand competition and bring greater diversity of ownership and content through media through this process. There is nothing to be ashamed about, but it is a government-driven process. Why burden—it is not about whether some people can afford this.

People bought a television with a legitimate expectation that it would work, and it was sold to them at a price with virtually a guarantee that it would get over-the-air signals. If we take that away, that is like taking away private property. That is not an issue as to whether you are poor or middle class or rich. In this country, when we take away property, even for the most laudable public purposes, we compensate people. This is about holding people harmless who, out of no fault of their own, could lose their over-the-air signals.

But don't be too hard on yourselves. It was an important government decision, and there are important things that need to be done, and in doing so, you have effectively created important benefits for the industries at this table, and you heard about it. They are going to sell more equipment. Televisions that wouldn't have been thrown out earlier may get thrown out earlier. They are going to sell more. Cable companies are probably going to be able to hook up more people. That second and third set, that fourth set, people are going to want it, because they are going to want digital TV. Satellite as well. So when we think about whether it is a nickel, a dime, a quarter, out of people's pockets. Who else is benefiting here? Broadcasters used to get one signal for their 6 megahertz. Here, they are probably going to be able to get high definition at least six signals over those same 6 megahertz. Enormous benefit to them. Maybe they should be reaching into their pockets and helping out as well.

So if you can find a way to hold the industry accountable and protect consumers, you also have enormous opportunities here with the digital transition and a hard date. I think competition policy is critical. We have got fewer and fewer phone companies consolidating, controlling the broadband access that every consumer needs

for local phone, long distance, high speed Internet. We have a few cable companies dominating as the single alternative and prices keep rising, and they all have a chokehold. We need more broadband connections for consumers. We need more transmission companies out there offering service for consumers. You have an opportunity, by ensuring that not all the spectrum is auctioned, by ensuring that rural interests, by ensuring that low-income interests, by ensuring that greater diversity is met, through a greater diverse ownership, through a focusing on local opportunities through new uses of spectrum. All of this can be done as part of this transition.

You can set aside some spectrum. You can also look to the broadcasters. That 6 megahertz is an awful lot these days. It originally was supposed to provide one high definition signal. It provides much more, given the technological improvements. Should some of that be available to community needs, to local needs, to rural needs, to religious broadcasters? Community wireless systems are popping up. This spectrum would be enormously valuable to bring us greater competition and greater diversity, as the other portions of the industry consolidate.

And it is important to also look at with the 6 megahertz, whether we are creating a new problem of dominance in local news and information. Half the broadcast television stations in this country do not produce and offer local news. In some instances, we have already allowed some stations to own two stations in a community. We are talking about possibly letting them own the dominant newspaper, and they own radio. If 6 megahertz can deliver as much as six channels worth of programming, is there a concern here that a few dominant broadcasters could own too much? We urge you to look at that.

In conclusion, Mr. Chairman, we urge you, as you move forward with legislation, to not put an undue burden on consumers, to make sure that those who are not at fault for TVs going blank do not have to pay to make the signals come back, and we also urge you to ensure that there are real benefits, not just to the industries involved, but to the consumers of these services, so that we get more competition and we get more diversity and more diversely owned sources of media.

Thank you.

[The prepared statement of Gene Kimmelman follows:]

PREPARED STATEMENT OF GENE KIMMELMAN, SENIOR DIRECTOR OF PUBLIC POLICY AND ADVOCACY, CONSUMERS UNION

Consumers Union [1] and Consumer Federation of America [2] appreciate the opportunity to testify on the transition from analog to digital television. We are grateful to Chairman Barton and members of this Subcommittee for their leadership on these important consumer issues.

We agree, as the staff discussion draft suggests, that the transition to digital television as envisioned by the 1996 Telecommunications Act has failed, requiring additional congressional action to ensure a smooth transition and to protect American consumers.

Setting a hard date for the conversion from analog to digital and return of the analog spectrum may play an important role in meeting the underlying goals of the Act. However, any legislation that this Subcommittee takes up to on the digital transition must:

- Ensure that consumers do not bear the financial burden of the transition or suffer from the loss of television signals they rightfully expect to receive;

- Promote market competition, rather than consolidation, through appropriate allocation of the 108MHz of returned spectrum to new entrants and smaller existing market players, particularly in the area of broadband wireless;
- Promote unlicensed use of spectrum by both commercial and non-commercial entities in either the retained or returned spectrum to promote competition, offer advanced communications services, and bridge the digital divide; and
- Prevent further concentration of local media markets by ensuring that a portion of the remaining 6 MHz is used to provide more news, information and entertainment from *independent* sources and addressing ownership restrictions for dominant local broadcast outlets.

Although the discussion draft requires important broad-based consumer education by retailers and manufacturers to help ease the transition, it fails to address the four critical needs identified above. As a result, Consumers Union and Consumer Federation of American oppose the draft in its current form. We look forward, however, to working with you to ensure that any legislation reported by the Subcommittee incorporates these core consumer provisions. We elaborate on these critical needs below.

Hold Consumers Harmless

Consumers buy televisions with the reasonable expectation that they will be able to receive broadcast signals over the life of the set. And that life can be substantial. Research from Consumer Reports shows that televisions are the workhorses of consumer electronics: they last for decades. Even today, as Congress focuses on a hard digital television transition date, millions of consumers are buying new analog sets on the assumption they will work for years to come. The digital transition turns that assumption on its head: for consumers relying on over-the-air broadcasts, the sets will be useless for their primary purpose. Any conversion to digital television must ensure that this expectation will continue to be met without imposing additional costs.

The number of consumers that could be left in the dark without further congressional action is substantial. Currently, 21 million households rely solely on over-the-air broadcasts. Another 16 million cable and satellite households have at least one television that is not connected to their cable or satellite service.[3] All these sets will go dark after the transition unless consumers buy digital-to-analog converter boxes.

The costs to individual households to purchase those boxes will likewise by substantial. With estimates of their cost at between $50 and $60, the digital conversion effectively increases the cost of television sets consumers have already purchased. According to the Consumer Electronics Association, a 25-inch television—the most popular set—sells on average for about $200. A $50 converter box increases the cost of that set by 25 percent. The costs of smaller sets selling for $100 dollars would effectively increase by 50 percent. Given that, according to the Government Accountability Office (GAO), the average over-the-air household has two televisions, the costs are double—effectively a consumer tax of $100 or more just to facilitate a transition that benefits broadcasters, equipment makers, retailers and other industry players.

Unless Congress makes changes to the discussion draft under consideration and provides a full consumer subsidy, Congress will impose dramatic cost increases and substantial inconvenience on consumers.

At the macro-level, the consumer cost of the transition is startling. GAO estimates the cost of purchasing new converter boxes for relevant households to be as much as $2 billion. Other estimates suggest the costs could rise to nearly $3 billion. It is completely unacceptable for consumers to bear these costs just to be able to receive over-the-air broadcasts their sets used to provide.

Though we support provisions of the discussion draft designed to hold cable and satellite subscribers harmless by providing for down-conversion of digital signals, the draft, in its most serious shortcoming, omits provisions to hold harmless the 37 million households that continue to rely on over-the-air broadcasts. Congress must establish a full consumer subsidy program for digital-to-analog converter boxes for all over-the-air households in a manner that does not impose costs on consumers. And cable and satellite subscribers must be certain they will receive all broadcast channels from their service providers.

This principle is not new to this Subcommittee. The Commercial Spectrum Enhancement Act (CSEA), enacted in 2003, has been instrumental in encouraging the development of new uses for spectrum. But that law also stipulates that auction proceeds must cover 110 percent of the costs of relocation. While the law does not apply in this case, Congress must recognize the significant costs it will impose on consumers, and hold them harmless for policy decisions that will substantially benefit other parties. Broadcasters, who demanded the ability to go digital in the first place,

incurred their costs willingly. But, according to the New American Foundation, sales of digital-ready televisions represented just four percent of all televisions sales in 2004, suggesting public demand for digital television is insignificant. For DTV transition legislation, the Subcommittee therefore should adopt a principle similar to that embodied in the CSEA: digital transition costs to consumers should be paid *not* from their pockets but by proceeds from future spectrum auctions or by the industries that will benefit from the transition.

The digital transition may, if managed appropriately, provide significant public benefits. But, unquestionably, it will be viewed as an abject failure by consumers if they are forced to bear the costs of acquiring digital-to-analog converter boxes or face the equally unpalatable alternative of losing access to over-the-air television.

Promote Market Competition

It is unacceptable to have two incredibly valuable, publicly owned blocks of spectrum—for which the broadcast industry paid nothing—remain underutilized. However, how this spectrum is allocated at auction will determine whether the U.S. broadband market grows more concentrated or benefits from greater market competition. Cable providers and telephone companies offering DSL dominate their markets and don't compete against each other outside of their territories. Data supplied by the Federal Communications Commission and J.P. Morgan show that the high-speed product space is highly concentrated; in fact, it has become a cozy duopoly. As a result of weak competition, broadband penetration in the U.S. is proceeding at a slower rate than many other countries—the U.S. now ranks 16th in the world.

And if the merger between Sprint and Nextel is approved, just three companies will dominate the wireless industry. The owners of two of those wireless companies—Verizon and SBC—are near-monopoly telephone companies that also dominate local and long-distance calling throughout the United States. Other, smaller wireless companies remain minor players that lack the spectrum needed to compete and match services over the long-term.

Congress has the important opportunity to ensure that spectrum made available from the analog give-back will facilitate robust competition in the broadband market—providing new opportunities for smaller cell phone companies and other wireless providers to access valuable spectrum that will allow them to better serve their customers and effectively compete in the marketplace. In addition, if portions of this spectrum were made available for wireless community networks, consumers could receive substantially lower broadband prices from an important competitive alternative to dominant market players.

But if rights to this valuable spectrum are available only to the dominant wireless carriers as smaller players are priced out of the market, the auctions will only make a badly concentrated market even less competitive—undercutting quality of service, reducing choices and inflating prices. As the findings of the discussion draft bill indicate, newly available spectrum could be used for wireless broadband in rural and urban communities. Even licensed options could be new alternatives to the incumbents for high-speed Internet access.

Unfortunately, despite this finding, the discussion draft remains silent on the allocation of newly available, high-quality spectrum for unlicensed use by providers of community wireless internet services or for other purposes. This virtually ensures the auctioning of spectrum to dominant wireless providers that already control the bulk of this concentrated market. The Subcommittee should ensure that of the estimated 108 MHz to be returned and offered at auction, adequate spectrum is reserved for new market entrants and small existing players. Doing so will put pressure on the largest market players to compete, resulting in lower consumer prices, higher quality, and expanded choices.

Promote Unlicensed Use of Spectrum

The findings of the draft legislation observe that the use of spectrum for wireless broadband is an important public policy goal. Unfortunately, the draft does nothing to advance unlicensed use of spectrum for wireless services, such as high-speed, community wireless Internet. This flaw that must be corrected if the digital transition is to offer any significant benefit to the public.

The growth of unlicensed use of spectrum in what used to be known as "junk bands," through the application of wireless Internet technologies like Wi-Fi, is one of the most remarkable accomplishments of the past decade. It expands the ability of ordinary citizens to use and share the public airwaves. But the potential to further expand the ability of the people to use their airwaves is constrained by relegating unlicensed use to these "junk bands."

The "junk bands" were given this moniker precisely because the signals that can be transmitted at these frequencies are limited—the signals do not pass through

walls or trees like TV signals do. And many other devices—like garage door openers, microwaves and cordless phones—use the same space. But what is important is the frequency on which they operate, not what kind of information they're sending, such as TV or Internet signals.

If the principle of sharing the spectrum in a non-interfering manner is extended to other parts of the spectrum, the potential to deliver broadband and other communications services at lower costs will expand dramatically. Congress can and should expand the space in which the unlicensed or noncommercial use of the airwaves is encouraged and allowed. It can do so in three ways.

First, it should set aside a small part of the recovered analog spectrum to be dedicated for unlicensed use. A set aside of 10 percent of recovered spectrum on a nationwide basis would open a substantial space to promote unlicensed uses.

Second, it can set aside a small part of the digital spectrum, which was given to the broadcasters on an exclusive basis and at no charge, for unlicensed use. Congress cannot ignore the fact that the digital spectrum is the largest part of the spectrum made available to private entities not subject to auction.[4] With the windfall provided to broadcasters in the 6MHz they will be allowed to retain, broadcasters will be able to provide six or more digital channels—far more than ever anticipated when Congress enacted the 1996 Telecommunications Act—where they previously offered one. Instead of moving to the equivalent of six channels, the Congress can set aside part of the digital spectrum for unlicensed use. This could be accomplished as part of the process of assigning full power channels, which the legislation contemplates. Again, a 10 percent set aside would open a substantial space to promote unlicensed uses.

Third, Congress should enact clear public policy that supports the non-infringing sharing of other parts of the spectrum. In many other parts of the spectrum, frequencies remain unused during all, or part of the day. These are referred to as "white spaces." They are unused because "dumb, old technology" cannot dynamically move into and out of these spaces. These white spaces are particularly unnecessary in rural areas. "Smart radio" technologies can use these frequencies without interfering with other uses. Under current rules and proceedings, the Federal Communications Commission has moved haltingly to expand the non-interfering uses of the spectrum. A clear public policy promoting the non-interfering use of spectrum would speed the process along and allow unlicensed sharing of spectrum to advance much more rapidly.

The unlicensed use of even a small portion of newly available spectrum would provide untold public benefits. Among many, perhaps the most notable is the opportunity to support expansion of community wireless internet services, offering perhaps the first meaningful opportunity for bridging the digital divide that has confounded policy makers for more than a decade.

Address Media Ownership

At a time when concerns about competition, cost and diversity of programming have prompted a revisiting of media ownership rules, the DTV transition could worsen the problem in local markets. Congress should not ignore the serious implications digital transmission has on media concentration.

We have significant concern about the power provided to local news companies that already own and control local newspapers and radio stations being provided with the capacity to offer six or more digital channels where they previously offered one.

Though all local broadcasters will receive the same new digital capacity, they cannot all take equal advantage of it. Only a few stations in any market currently produce or offer local news.

A Consumers Union/Consumer Federation of America study of station ownership between 1975 and 2000, found that the number of television station owners fell from 540 to 360 and the overall number of stations rose. But the number of TV newsrooms declined during this same period. In fact, only half of all broadcast TV stations provide news. Stations with newsrooms, particularly those affiliated with large news conglomerates, will be better able to utilize the additional digital capacity, dominating local news carriage, reducing diversity of news and information, and increasing the volume and impact of a single owner's voice in the news marketplace in their community.

In 2003, millions of Americans, a bipartisan coalition from the House, a majority of the Senate and leaders from both parties raised concerns about media conglomerates owning two stations in most markets, or three stations in the largest ones. Unless Congress acts to prevent it, the digital transition has the very real potential to substantially increase the ability of a few broadcast giants to dominate local news markets nationwide.

Of the 6 MHz of spectrum that will remain with broadcasters post-transition, Congress should allocate a portion of it for exclusive use by diverse and independent sources of local news and information. Congress should also consider adopting new rules that specifically address the concentration of local news content providers that the transition will facilitate.

Serving the Public Interest

In exchange for the privilege of free and exclusive use of the public airwaves, broadcasters must serve the "public interest, convenience and necessity" through the fulfillment of public interest obligations, such as the provision of educational, civic, political and other programming. Among many shortcomings of these obligations, however, has been the ability of the broadcasters themselves to define what constitutes programming in the public interest. In addition, compliance with overly vague obligations is difficult both to verify and enforce. In short, these obligations have failed to serve the public.

The FCC should hold broadcasters accountable for their public interest obligations, both now and after the DTV transition, preferably through quantifiable and enforceable requirements. These are worthy goals and they should be met. However, given the historical and inevitable shortcomings of these obligations, improvements to the public interest obligation in any digital transition legislation will be insufficient to serve the public interest.

Such provisions are neither an effective nor equivalent substitute for legislative requirements allocating spectrum to promote market competition and unlicensed and noncommercial use or for requirements allocating a portion of retained spectrum for independent local news, information, or entertainment programming.

There is little debate that, to date, the obligations of broadcasters have failed the public interest. In order to serve it, Congress must address the critical competitive, diversity and ownership concentration issues we have raised in our testimony through the effective, equitable and appropriate allocation of one of the most valuable publicly owned resources—radio spectrum. If Congress takes these steps, it will provide far more meaningful public benefits than any improvement to public interest obligations can offer.

Summary

As we said in our testimony on this issue in 2002, "Consumers will not thank Congress for digital television if it also means they have Congress to thank for higher prices and inconvenience when they buy new TVs and new computers, or integrate their home entertainment systems." That statement remains true today.

Digital television is a positive technology that has the potential to benefit consumers and the public as a whole. But it must be rolled out in accordance with competitive market principles in a manner that serves the public interest.

We look forward to working with the Subcommittee in stimulating a rapid transition to digital television broadcasting and to craft legislation that will resolve these important issues for both consumers and affected industries. But the burden and costs of the digital transition should properly rest on the broadcast, cable and satellite television providers, not on consumers.

Endnotes

[1] Consumers Union is a nonprofit membership organization chartered in 1936 under the laws of the state of New York to Provide consumers with information, education and counsel about good, services, health and personal finance, and to initiate and cooperate with individual and group efforts to maintain and enhance the quality of life for consumers. Consumers Union's income is solely derived from the sale of *Consumer Reports,* its other publications and from noncommercial contributions, grants and fees. In addition to reports on Consumers Union's own product testing, *Consumer Reports* with more than—5 million paid circulation, regularly, carries articles on health, product safety, marketplace economics and legislative, judicial and regulatory actions which affect consumer welfare. Consumers Union's publications carry no advertising and receive no commercial support.

[2] The Consumer Federation of America is the nation's largest consumer advocacy group, composed of over 280 state and local affiliates representing consumer, senior, citizen, low-income, labor, farm, public power an cooperative organizations, with more than 50 million individual members.

[3] Digital Broadcast Television Transition: Estimated Cost of Supporting Set-top Boxes to Help Advance the DTV Transition. February 17, 2005, Government Accountability Office, GAO-05-258T

[4] Certain parts of the spectrum have been set aside or assigned for public governmental uses, like defense, safety and education, and not subject to auction. The original cellular licenses were also given as a gift to licensees.

Mr. UPTON. Thank you. Mr. Pitsch. You knew this moment would come.

Mr. PITSCH. I did. I did. I can't see the signal, though, so I want to be respectful of your rules, Mr. Chairman.

Mr. UPTON. Yes, yes.

STATEMENT OF PETER K. PITSCH

Mr. PITSCH. Thank you, Mr. Chairman, Mr. Markey, and members of the subcommittee. I am Intel's global spectrum and communications policy director. Intel is the world's largest semiconductor manufacturer.

Prior to joining Intel 7 years ago, I worked on telecommunications policy at the FCC, and in private practice, I have been doing these issues now for nearly 24 years.

It is an honor to appear before this subcommittee to testify on the discussion draft. I want to, today, focus on two topics, the larger societal benefits from setting a date certain, and the particular benefits from freeing up the 700 megahertz for WiMAX and other wireless broadband technologies, particularly in rural areas.

This subcommittee has already heard much testimony on the benefits and costs of this proposal. This morning, I want to focus on some new information and analysis that I think is relevant to the debate. Coleman Bazelon, an economist formerly with the CBO and now with the Analysis Group, on behalf of Intel recently analyzed the auction and consumer benefit and many other issues. We will be sharing this study with you next week, when it is finalized. I just want to give you a few key conclusions this morning.

Many people have argued that the auction revenues would be lower, because substantial amounts of additional spectrum will be made available in the marketplace. The Bazelon study rigorously analyzes this question, looking at the elasticity of demand for spectrum, and concludes that even accounting for this fact, the amount of revenue generated would be substantial, on the order of $20 to $24 billion.

The Bazelon study also estimates the consumer benefit from freeing up the 700 megahertz spectrum, or in economic parlance, the consumer surplus. The consumer benefit intuitively here will come from new services, more minutes, lower prices, all made possible from the additional capacity. Applying existing analysis to the 60 megahertz at stake, the Bazelon study concludes that the benefit to consumers would be an astounding $200 to $432 billion. In other words, the net present value of the stream of benefits that come from all of these additional services will be in the hundreds of billions of dollars.

Now, I would like to turn to the benefits, the particular benefits that will come from using 700 megahertz in WiMAX or other wireless broadband services. WiMAX is a particular standard, IEEE standard, it is a technology that we are excited about. Others are possible. WiMAX will make it possible to improve bandwidth, make service more generally available, radically reduce radio costs. It will enable a third pipe in urban areas, and particularly noteworthy, it will make it possible to provide low-cost wireless broadband in rural areas. The ability to use TV frequencies for WiMAX and other wireless broadband technologies will accelerate the growth, expand the reach, reduce the cost, and improve the quality of broadband.

For example, because TV frequencies better penetrate walls, they would be less dependent on line of sight transmission to outdoor antennas. This means that consumers are going to get portability, indoor use which facilitates self installation. Carriers would not need to use expensive truck rolls. But even more important are the benefits in rural areas. Based on Intel's internal analysis, the infrastructure costs in rural areas of using 700 megahertz spectrum would be one fourth to one fifth of what they would be using 2.5 gigahertz spectrum. The upshot is that for some rural areas, opening the TV frequencies to wireless broadband use would likely make the difference between having a high quality wireless broadband alternative or none at all.

In sum, the benefits to consumers, especially in rural areas and underserved areas from freeing up this spectrum, the additional auction proceeds, not to mention the benefits from public safety, will be in the hundreds of billions of dollars.

Now, the transition problems are real. They are significant. They need to be dealt with carefully. We and others in the high tech community stand ready to deal with these problems constructively. But I am confident that if we act with good judgment and proceed with good faith, we can create an enormous win-win solution for all Americans.

Thank you very much.

[The prepared statement of Peter K. Pitsch follows:]

PREPARED STATEMENT OF PETER K. PITSCH, DIRECTOR, COMMUNICATIONS POLICY, INTEL CORPORATION

INTRODUCTION

I am Peter K. Pitsch, director of Intel's global spectrum and communications policy efforts. Intel is the world's largest semiconductor manufacturer and a leader in technical innovation. Intel is also a leading manufacturer of communications and networking chips. Our mission is to accelerate the convergence of computing and communications through silicon-based integration.

Prior to joining Intel seven years ago, I worked on telecommunications policy issues at the FCC from 1981 to 1989 as chief of staff to Chairman Dennis Patrick and as chief of policy and planning for Chairman Mark Fowler and in private practice from 1989 to 1998. In total I have worked on spectrum and other telecommunications policy issues for nearly 24 years.

It is an honor to appear before this Subcommittee to testify on the benefits of setting a date certain for completion of the digital television (DTV) transition. Let me begin by saying that Intel has long recognized the great potential of DTV and has invested significant R&D in DTV including the development of DTV tuners for PCs. In 1998 Intel and the PBS teamed up to deliver "Frank Lloyd Wright"—the first digital television trial that allowed viewers to obtain Web-based content while watching TV. Also, Intel's experimental station KICU, broadcasting from Intel's headquarters in Santa Clara, was one of the first over-the-air DTV broadcasters in the Bay area.

The staff discussion draft of the "DTV Transition Act of 2005" would set a date certain of December 31, 2008 for completion of the DTV transition. In so doing it would make an additional 700 MHz band spectrum available-60 MHz for commercial wireless broadband use and 24 MHz for public safety use. Today, I want to address two topics:

- Estimates of the larger societal benefits of setting an early date certain for completion of the DTV transition; and
- The particular benefits of freeing the 700 MHz spectrum for WiMAX and other wireless broadband uses, especially in rural and underserved areas.

THE LARGER SOCIETAL BENEFITS OF AN EARLY DATE CERTAIN

This Subcommittee has already heard much testimony on the costs and benefits of setting an early date certain for completion of the DTV transition. On the cost

side, there will be transition costs for owners of analog sets used to receive over the air broadcast signals.

On the benefit side, there will be four substantial advantages. First, setting an early date certain will give consumers, manufacturers, retailers, broadcasters and all interested parties substantial advance notice and the ability to plan and minimize transition costs. Second, auction of the cleared 60 MHz of unassigned spectrum allocated to commercial use will generate billions of dollars in auction proceeds. Third, setting an early date certain will clear the 24 MHz of spectrum allocated to public safety which should give "first responders" communications systems with greater interoperability and new broadband capabilities. Finally, new wireless broadband services and capacity will generate consumer benefits from the new capabilities, lower prices and additional usage made possible.

This morning I want to focus on new information and analysis relevant to this debate that has been generated for Intel by Coleman Bazelon, an economist formerly with CBO and now at the Analysis Group. We will submit the Bazelon study to this Subcommittee when it is finalized early next week. I would like summarize key conclusions this forthcoming study reaches regarding auction proceeds, consumer benefits from new wireless broadband uses and the opportunity cost of the public safety spectrum.

Auction revenues

Two independent analyses of the market value of the 60 MHz that would become available for auction generate estimates ranging from $20 to $28 billion. Both of these analyses are based on a review of recent auctions and transactions. The prices generated in these "comparable sales" clearly factored in the previously announced 90 MHz of advanced wireless spectrum expected to be auctioned approximately a year from now. Both analyses recognize that auctioning the 60 MHz cleared by completing the DTV transition could generate a lower average price (in dollars/MHz/pop). They account for this downward pressure in various ways.

The Bazelon study rigorously addresses this factor by estimating the elasticity of demand for spectrum and the increase in spectrum supply made available by completing the DTV transition. The study estimates the resulting price would be 17 percent below that predicted based on comparable sales. Importantly, even this more conservative analysis of the market value of the spectrum made available for auction estimates the proceeds to be a substantial sum—$20 to $24 billion. By raising more than sufficient money to fund a transition program for those households who rely on over the air broadcast signals, these auction proceeds should make it possible to create a "win-win situation."

Consumer surplus

The Bazelon study also estimates the consumer benefit (or, in economic parlance, the "consumer surplus") that would be generated by clearing the 700 MHz spectrum. The consumer benefit generated from making increased spectrum available is typically many times the auction proceeds. Intuitively, these benefits come from new services and capabilities, the additional minutes of use and the lower prices the additional spectrum will make possible. Applying existing studies of the consumer benefit from adding spectrum, the Bazelon study estimates the added consumer benefit to be 10 to 18 times the expected auction proceeds-that is, at least $200 to $432 billion!

Public safety

Completing the DTV transition will provide significant benefits to society by allocating 24 MHz of 700 MHz spectrum to public safety. While it is difficult to estimate the value of this additional public safety spectrum, from a public policy perspective the foregone proceeds that this spectrum could have garnered in an auction represent the "opportunity cost" to the government of that spectrum. Of course, the actual benefits might be larger, but the opportunity cost provides a logical lower bound of the value that policymakers are placing on these benefits. The Bazelon study (again employing its estimate of the demand elasticity of spectrum) estimates that the opportunity cost of the public safety spectrum to be $8 to $10 billion.

THE BENEFITS OF THE 700 MHZ SPECTRUM FOR WIMAX

Moore's Law is going to revolutionize Marconi's transmitter. In the past 30 years, microprocessors have increased 1,000 times in speed and decreased 100 times in cost. These phenomenal "silicon" improvements will produce profound effects in radio technology. Radios will become ever smarter, more flexible and ubiquitous.

One new radio technology Intel is particularly excited about is WiMAX. Like Wi-Fi (802.11), WiMAX is an IEEE technology (802.16) that is expected to be accepted

as a global standard. WiMAX is expected to be deployed for both licensed use (like Cellular) and unlicensed (like Wi-Fi) applications. With the latest in modulation techniques (such as OFDM) and antennae techniques (such as MIMO) WiMAX has been architected to cost effectively deliver broadband services. It will be deployed for Line of Sight at ranges of up to 50 kilometers and non-Line of Sight applications at shorter ranges.

A wireless ISP using a small 802.16 installation could provide sufficient shared data rates (up to 75 Mbps) to simultaneously support more than 60 businesses with T-1 style connectivity and hundreds of homes with DSL-speed connectivity.[1] In the 2007-2008 timeframe, WiMAX will begin to be deployed in laptops. (Intel has announced that it intends to put WiMAX radios in its chipsets by 2007-just as it has done with Wi-Fi in its Centrino™ chipsets beginning in 2003.)

WiMAX is expected to improve bandwidth and service while radically reducing radio costs. As a result WiMAX should dramatically spur wireless broadband deployment as a third broadband pipe augmenting DSL and Cable. WiMAX holds special promise in rural areas or developing markets where service providers have not deployed wired infrastructure. Countries around the globe are already beginning pre-standard trials of WiMAX.

The television spectrum would offer enormous advantages for wide area wireless broadband services such as WiMAX. The frequencies currently available for wireless broadband are in the 2.5, 3.5 and 5.8 GHz region. In contrast, TV channels are much lower in frequency-from 700 MHz all the way down to 76 MHz.[2]

The ability to use TV frequencies would accelerate the growth, expand the reach, reduce the cost and improve the quality of broadband wireless service. Even when compared to the 2.5 GHz frequencies-the best alternative available to WiMAX in the U.S.-the TV frequencies make it far more economical to serve rural areas and to compete with wireline broadband alternatives in urban areas. For a given level of quality to a given coverage area, the 700 MHz frequencies require fewer antennas and use less power.

Based on Intel's internal analysis of the advantages of 700 MHz *vis a vis* 2.5 GHz frequencies, we estimate that to cover the same geographic area using 2.5 GHz frequencies would require 4 to 5 times as many base stations to achieve equal geographic area coverage, for a given air interface and bandwidth. Of course, one could "make up" for this loss by introducing innovative antenna enhancements or increasing the transmit power at 2.5 GHz. The former is being done in the WiMAX standard but at increased system costs. The latter-a greater than ten-fold increase in transmit power-is not feasible. Receiving devices would have to exceed FCC power limitations to successfully transmit back to the base station.

Also, because TV frequencies better penetrate walls, they would be less dependent on line of sight transmission to outdoor antennas. Besides the value that consumers could derive from portability, indoor use would also facilitate self-installation, avoid expensive truck rolls, and make it attractive to launch market-wide marketing and advertising campaigns. And indoor service to untethered laptops will accelerate the integration of WiMAX radios into microprocessors thereby generating the efficiencies from Moore's Law that I discussed earlier.

The cumulative impact of these differences on the feasibility of providing wireless broadband service in rural areas bears emphasis. The upshot for some rural areas is that opening the TV frequencies to wireless broadband use would likely make the difference between a high quality wireless broadband alternative and none at all. That is, frequencies below 1 GHz are premier beach front property. Intel believes the allocation of these frequencies for licensed use could dramatically accelerate broadband deployment with nationwide benefit, but with particular benefit to rural and underserved areas.

Thank you.

Mr. UPTON. Thank you. I appreciate all of you for listening, those in the audience as well. That is for sure. And I just want to say that we are expecting a couple of votes momentarily, so we will probably take about a 25 minute break, and then we will come back for questions and answers, and then, we will have another vote on the House floor about an hour after that or so.

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[1] WiMAX Press Teleconference Script, April 8, 2004.

[2] 76 MHz, VHF Channel 5, is the lowest channel considered in the FCC Unlicensed Operation in the TV Broadcast Bands NPRM, and hence potentially available for wireless broadband. Broadcast television in the US begins at 54 MHz, channel 2.

So it gives us time to ask some questions, and at this point, we will start 5 minutes by the members that are here in the order of their appearance.

I want to get a little bit into the whole down-conversion of the digital signal, and get a couple comments from all of you.

Mr. McSlarrow, you stated that "cable operators could still choose to provide the digital signal in addition to the down-converted analog signal, if the digital signal were uniquely compelling and attractive to consumers with digital and HD equipment." How would the cable operator make the determination about whether the digital content is compelling or attractive? And Mr. Abud, I am going to have you comment afterwards.

Mr. MCSLARROW. Well, it is the bottom line consideration for a cable operator making a decision is going to be what is it that he or she believes the customer wants. Now, that is a judgment call, but they are probably best placed to make that judgment call.

And as you pointed out, what we are asking for, essentially, is to allow a pace of change in the real world, as opposed to just things that we decide by fiat, to take place where the world we have today will be the same world that we have in terms of the consumers the day after, even though we know it is all changing, and of course, everybody here wants it to change to the digital world.

And it is important to understand, in the world we have today, cable carries 500 digital broadcast signals in addition to analog. I think I heard the number before, there were 1,500 broadcasters. So there are 500 broadcast digital today. In addition, you have got a number of channels that are carrying HD content today, and that is not even taking into account all of the cable networks who are running things in HD.

So without a government mandate, the market is working in such a way that because we want to serve the consumer, our customer, we are driving as much digital and HD content to them as possible. So that is not going to change. That will be true the day after the transition. What we want to make sure of is that they don't lose the analog service the day after.

Mr. UPTON. Mr. Abud.

Mr. ABUD. From our point of view, Mr. Chairman, at the end of the day, what is important for us is that everybody on the consumer side gets the benefit of the digital transition, not only those that subscribe to digital, but also those who subscribe to analog. And that is why we want to have access to all the possible viewers, and not leave it up to the cable company to decide which of the stations should be down-converted. They down-convert one of the local stations, they should convert all of them, regardless of their retransmission consent or their must-carry status.

Mr. UPTON. Well, let me ask this, and I raised this in the hearing that we had a couple months ago, and a discussion. Mr. Wilner was testifying for the cable industry. NAB was here as well. And now, I have a—you know, in my household, I have got four TVs. Two are analog and two are digital. One of my digital sets is HD. I get the full cable package. I want to know that when we hit this date, which we have moved back to what I think is an appropriate date. And I absolutely stand with my chairman on 12/31/08. I want

to know that that Rose Bowl game with January 1, with the Michigan Wolverines and maybe Boston College, if they could get up there, and then see how they did on recruiting. I want to make sure that on my HD set in my living room, I am going to get the signal that I paid for when I got that set. And I wish I had known you before, Mr. McCollough, before I went, but I want to make sure that only that channel is going to get it, but I—whatever else that I watch. If I go into my kitchen where my small analog set is, that is attached to my cable, that it is going to get all the different programs that I get today.

Mr. Knorr.

Mr. KNORR. If I may, I can address that. Sunflower Broadband is uniquely positioned. As ACA members, we are very fortunate. We serve a fairly large market. Our primary market is Lawrence, Kansas. It is a fairly affluent market. In our cases, we are today triple casting many of our broadcast signals.

Mr. UPTON. HD?

Mr. KNORR. HD, standard definition digital, and——

Mr. UPTON. Analog.

Mr. KNORR. [continuing] analog. Broadcasters don't give us all those signals. We have to modify—the current——

Mr. UPTON. But is this—the question is, and I am watching the time, because every member has got a question. But I want—is the way that we have written this in the draft discussion, does this work, so that when we get to the transition date, whether it be a Telemundo, or a religious broadcaster, or an NBC, which is probably going to cover the Rose Bowl that day, I mean is it going to work, so that I am not going to get black?

Mr. KNORR. It doesn't give—as it is written today, it does not give cable operators the flexibility to try and provide signals that best serve their community, which in any case, we can't down-convert, as the bill is written, we could not down-convert an HD signal into a standard definition digital signal, which is a hole, as it is written today.

I think, furthermore, in small communities that aren't as affluent as the ones we serve, I think there is a huge issue. They may not have very many HDTV sets, and they don't have the ability to just choose to down-convert and focus on analog to serve those communities, or possibly addressing Mr. Abud, and you know, minority communities, as well.

Mr. UPTON. Let me just go to Mr. Yager to respond, and then I will—my time is expiring.

Mr. YAGER. Mr. Chairman, I do think the Staff Draft addressed the situation you talked about, I think 2.5, almost 3 months ago, in which I believe Mr. Wilner proposed, from the NCTA, as an NCTA witness, I was a little confused in the explanation, but what I understand the Staff Draft proposes is that digital signals would be carried through, and that would be both HD and standard definition digital signals would be carried through, and that you would have a converted, down-converted digital signal to analog, so you would be able, on your set, on New Year's Day, to receive both the Rose Bowl in digital and—or high definition, as well as, if your family wanted to watch something in analog, I mean on an analog set, they would also get that.

I think that is a very important piece. As I read this Staff Draft, that is a very important piece of the legislation.

Mr. UPTON. But does this work the way that we have written it? Does it work?

Mr. YAGER. There is only one little caveat there, and that would be for the small stations in large markets, who could be shut out of only having a digital carriage only, and I think that is what Mr. Abud is referring to. I think with very minor tweaking, that could be corrected in the Staff Draft.

Mr. ABUD. Yeah, but the issue for us is that if one is down-converted, all should be down-converted, not only the must-carry, but all the local broadcasters.

Mr. CHESSEN. Yes, Mr. Chairman, I think that the effect of this would be to permit the cable system to down-convert simply the retransmission consent stations, the powerful stations, and not trip the carry one, carry all provision. It seems like that would be the potential scenario, so you would get carriage of, in analog, of the more powerful network stations that negotiate retransmission consent, but the other stations, the religious, Hispanic, other smaller stations may not be down-converted.

Mr. UPTON. And so are you saying that if—and if I have a digital set, and I want to watch Telemundo, that it may not come through, if the determination is——

Mr. CHESSEN. It could come through, but not on your analog.

Mr. UPTON. Yeah. The way it is written now——

Mr. YAGER. The way it is written now. The way it is written.

Mr. KNORR. And I think for rural America, the way it is written is that it would apply to all the broadcast stations, not just the small broadcasters like Telemundo, that it would apply to major networks, like ABC and NBC, in a rural market, that only your HD set will be able to receive.

Mr. SHAPIRO. Mr. Chairman, 87 percent of the products sold are HDTV products. That wasn't a common perception of what would occur, but Americans said they want the highest quality. And if you want to get the Super Bowl or any other television program that is broadcast in HDTV on your cable set in HDTV, you have to make that very clear in this draft.

Mr. UPTON. Okay. Thank you. My time has expired. I will yield to Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman. I think—Mr. Dingell, I think that you might have——

Mr. DINGELL. I am going to defer to my good friend.

Mr. MARKEY. Okay.

Mr. DINGELL. I am enjoying this.

Mr. MARKEY. I thank——

Mr. UPTON. He is a big Wolverines fan as well, I want you to know, so he represents the great city of Ann Arbor.

Mr. MARKEY. I thank you, Mr. Chairman, very much. When, on the 10,000th NFL game in 1997, they did a survey of the most memorable of the 10,000 games ever played. It was not the immaculate conception—reception of—that is another thing—of Franco Harris. It wasn't the Snow Bowl. It wasn't the Great Chicago Bears team, the Bears, in 1985. The most memorable football game of all time was when the New York Jets were playing the Oakland Raid-

ers in 1968, November 17, and at 7, after Joe Namath had just thrown a pass to Don Maynard to take the lead, NBC switched to Heidi. It shut down NBC. It shut down the New York telephone company. It shut down the New York Police Department. It shut down everything. There were two touchdowns scored in the next 20 minutes. No one quite remembers now how Heidi ended, but people remember that NBC and CBS and ABC and all subsequent networks to never, ever shut off television sets as people are watching football games.

As the Chairman just said, on January 1, 2009, there very well could be millions of Americans who are looking forward to their bowl team, and with the proliferation of bowls we have, it could be just about every school in America that is going that day, every one of our alma maters, even Boston College, in a bowl. And so it is a big moment that day. We have got to make sure that every consumer has their TV. More people have, as you know, televisions than have phones in America, which is all you got to know about the relationship between TVs and the American public.

Now, Mr. Yager, for the last decade, I have been asking the broadcasters, what is the public interest commitment that the broadcasters are willing to make in order for this committee to tell Mr. McSlarrow that he and his organization should carry your stations? What is the commitment? After 10 years, I haven't heard anything. Because if all it is is just a plan to make money, and there is no public interest commitment, you know, and I don't mean an hour or 2 a week, but I mean a real commitment that benefits the local community, diversity in the community, then I am really not inclined to tell Mr. McSlarrow that he should have to carry your stations on his cable system.

If, on the other hand, you have a plan, and you are willing to announce it, as to how much you are willing to serve the local community with these additional channels, then I am open-minded. So could you tell us today what the broadcasters are willing to commit to in local public service, as a condition of Congress mandating that they must carry those new signals.

Mr. YAGER. Well, if we are talking here about digital must-carry of the multicast signal, that is one thing. If we are just talking about what broadcasters are willing to commit to in terms of just carriage, that is a different thing.

But I think all broadcasters, whether they be large or small, are committed to serving the public interest. We have to be.

Mr. MARKEY. And how do you define that?

Mr. YAGER. What I consider the public interest is what are the interests, needs, and kind of each individual community we serve, and we serve very divergent communities.

Mr. MARKEY. So do you think it would be reasonable to say that in order to mandate Mr. McSlarrow and Mr. Knorr that they must carry your second or third, you know, multicast signal, that each local station has to provide 3 hours or 4 hours per day of local programming, and then you can make money with the rest of the time? Where would—where are you going to draw the line?

Mr. YAGER. That kind of one size fits all mandating the number of hours of programming a day scares me, because that means that

we do in Flint-Saginaw might be the same thing you would want us to do in Columbia——

Mr. MARKEY. Okay. But having no definition scares me.

Mr. YAGER. Well——

Mr. MARKEY. And because, you know, unfortunately, there are too many people who, you know, if you kick them in the heart, you are going to break your toe, in the broadcasting industry.

So how do we make sure that those people—you have been in it your whole life, Mr. Yager, but you know, there has been—some new people have arrived in the industry, that don't come totally out of the broadcasting industry background. So how do we ensure—what is the minimum?

Mr. YAGER. I think you really ensure it by licenses who, if they are going to operate in a local community, have to serve the public interest if they are going to survive economically.

Mr. MARKEY. Okay. So how do we mandate that?

Mr. YAGER. Well, that is where I think we get to—I am not sure how you mandate that. We have a station in Flint-Saginaw that I am considering very seriously right now of doing a channel with the UAW-CIO. It is not a great television station, even though it is an NBC affiliate. It is a UHF competing against two VHFs. What can we do with that television station, competing against an ABC O&O and a very large group operator, and another very large group operator, and we are a very small company. What can we do to make that station more relevant to the community we serve? And we have spent hours so far discussing exactly how we do that. To say that we should do 2 hours or 3 hours, that every station in the country should do that, I think would be a mistake on the part——

Mr. MARKEY. Okay.

Mr. YAGER. [continuing] of Congress.

Mr. MARKEY. Would you actually go to multicasting if it had to be exclusively public interest, or exclusively local programming? Would you even consider——

Mr. YAGER. Exclusively local programming? If we could define exclusively local as programs——

Mr. MARKEY. No. No Seinfeld reruns, no——

Mr. YAGER. No, no. You know, informationals has been the big——

Mr. MARKEY. Yeah. Just——

Mr. YAGER. [continuing] thing that cable——

Mr. MARKEY. If it was just local public interest, local public affairs, could you—would stations even consider——

Mr. YAGER. I think small markets would not consider that.

Mr. MARKEY. Okay.

Mr. YAGER. Because economically, they could not afford it.

Mr. MARKEY. Okay. So what we are looking for, then, Mr. Yager, is a balance. In other words, I am open-minded to saying okay, for you know, 15 hours a day, you can be commercial, but you got to, you are going to have to give something back as well, because this is a huge transition for the public, in order to move to digital, and they have got to get something out of it in the local community, or else Mr. McSlarrow is saying all you are doing it just putting on a new channel that is competing with his already totally commer-

cial programming, because they really can't do local programming. So that becomes a challenge for us, and I am not inclined, to be frank with you, unless it is meaningful and measurable, to support multicast must-carry——

Mr. YAGER. Don't you have to look at each case on a case-by-case, each market on a case-by-case basis, rather than dictate or mandate that there be 2 hours of programming, or 3 hours of programming, produced that doesn't—isn't relevant to the community. And then what do you do when you have four stations or five stations in a market? Who is——

Mr. MARKEY. Let me ask you this.

Mr. YAGER. Yeah.

Mr. MARKEY. Is there any broadcaster in America that you don't think can do more with the extra channels to serve their local community? Do you think there is any broadcaster that can't——

Mr. YAGER. No. I——

Mr. MARKEY. Okay.

Mr. YAGER. We could all do more.

Mr. MARKEY. All right. So there—so we start there. So now we begin with that as the basis, and now, Mr. Yager, I would appreciate it if you could begin with your organization to then propose to us what that minimum standard is, if you agree that everyone can do it. What is it? Because I do think we can really move forward to mandate on other industries these dictates until we know what we are getting for the public, especially the local community, because that has always been the biggest promise. And we do want to work together with you, but I would advise you not to allow the least enthusiastic to drive—the most radical to drive the policy for the entire organization, which in my opinion is willing to move forward to serve the local community, okay. So in many—and you know, there is an old definition, the most radical element of any group defines the agenda for the whole group, okay, and I have to make sure that the whole group, ultimately, says to even that minority, you are going to have to do something.

Thank you, Mr. Chairman.

Mr. UPTON. Mr. Barton.

Chairman BARTON. Thank you. Thank you, Mr. Chairman. I appreciate, again, all our panelists being here. I have got 2 or 3 questions, and I know we don't have a lot of time, so I am going to try to go pretty quick here. I am going to ask Mr. Shapiro, on behalf of the Consumer Electronics Association, if the December 31, 2008 hard date is a date that your group would find acceptable.

Mr. SHAPIRO. Absolutely, and we support it.

Chairman BARTON. Okay. I want to ask Mr. McSlarrow, on behalf of the National Cable & Telecommunications Association what your views are on the down-conversion at the head end section of the bill.

Mr. MCSLARROW. Mr. Chairman, we have major concerns, as currently drafted. I think the goal, which we all share, is to ensure that all our existing customers on the day after the transition can see the same programming without additional cost. As it is currently drafted, it is, in effect, a dual must-carry provision, and our cable plant is full. And if something gets added on, something is going to get dropped off, No. 1. No. 2, it is going to put us in a posi-

tion where the way it is drafted right now, it actually would give operators the choice of just carrying the digital stream and no analog, which seems to be no choice at all, except that if you couple that with the other provision, which is—which my colleagues have been talking about, which is carry one, carry all, you have in effect forced that kind of choice on system operators who need to manage a network that actually has capacity constraints. So what we have urged is to give us the flexibility, and we admit this is not a perfect solution, but to give us the flexibility, knowing that we want as many of our customers to have analog and digital, which we do today, to make the decision at the head end whether or not we are going to down-convert, and whether or not, in some circumstances, because it is possible, an operator might decide to distribute set-top boxes.

Chairman BARTON. Well, what——

Mr. MCSLARROW. Allow them the flexibility.

Chairman BARTON. What would your reaction be if we said okay, but if you choose not to do the analog carriage, you, the cable operator, you have to provide free of charge, a set-top box to the analog owner who doesn't have digital? If we let you have that choice that way, what would your reaction be to that?

Mr. MCSLARROW. Not positive.

Chairman BARTON. Just an idea.

Mr. MCSLARROW. Just—thanks for the offer.

Mr. UPTON. My bet is some manufacturers might like that a lot.

Chairman BARTON. Well, you know, that is why we hold these hearings. I want to ask the gentleman who is the Chief Executive Officer of the Circuit City stores, what your opinion on the provision in the bill before us that would move forward the deadline for all sets sold in the United States having to have a digital tuner.

Mr. MCCOLLOUGH. My opinion is all you need to do is set a firm date, and the market will take care of itself. The day you set the firm date, we will begin putting signs on the shelf, changing our Internet site, labeling televisions, and making consumers aware of what will happen. I think if you just get out of their way, they will make an intelligent decision.

Chairman BARTON. You know, absent that, you really don't think there would be some manufacturers and distributors that would want to sell an analog set just because they would be so much less expensive at the end?

Mr. MCCOLLOUGH. What you need to understand is we make a lot more money when we sell a fully featured, more expensive television set. The entry-level sets, when you see us run television sets at $69 for a 13 inch set, we are not putting profit dollars on the bottom line. It is in our interest to sell the very best set possible. So we don't need artificial motivation to try. What you have is customers who are making informed decisions on what is the economic value to them at that point. It is hard to do if you don't know a date certain about when the transition will be. Give us a date certain, and the market will take care of it.

Chairman BARTON. Are you okay on the December 31, 2008 date certain?

Mr. MCCOLLOUGH. Absolutely.

Chairman BARTON. And that is enough time to get the distribution system and the manufacturing system and educational system all in place, so that the market will work?

Mr. MCCOLLOUGH. That, as I say, the day that decision is made, and that comes to be the law, we will start the process.

Chairman BARTON. Okay. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Dingell.

Mr. DINGELL. Thank you, Mr. Chairman. Mr. Goldstein, I want to go through some things I think will happen, and then I want you to tell you me what you think. We are hearing that $500 million or a billion dollars may be set aside from spectrum auction revenues for a rebate program to cover means-tested over-the-air households. Now, first, somebody has to set up the program. That is going to cost money. I don't know how many billions or millions. Second of all, the consumer has got to buy a converter box that sends some type—and he has to send some type of documentation to the program administrator. The administrator receives that form and examines it for completeness. There is cost involved here. To verify over-the-air eligibility, the administrator has to send the address to a data base company, who has contracted with the billing systems of the country's 1,100 cable and satellite operators to obtain copies of their subscribers list. There is a cost here. Now, there would also be a cost for the cable and satellite billing systems to coordinate with the data base company. Then the data base company verifies the address, which is not listed as cable or satellite subscriber, and sends the answer back to the program administrator. There is a cost here. And of course, the administrator has to receive the address and match up the consumer's information. Then, to verify the means test, the administrator sends the consumer's information to the relevant entitlement program, let us say food stamps, which is administered by the states. There is a cost here which has to be addressed by the program again. The State agency would then verify whether the person is participating in the program. That would involve cost. The State agency would then send the verification back to the program administrator. There is a cost to the agency to send the administrator this information, and to receive and process the administration. At this point, some time later, the administrator would tell the Treasury Department to mail that household one $50 check, or one check for a certain amount. That includes cost. And if the administrator thinks he was inappropriately—if a consumer, rather, thinks he was inappropriately denied, there would be costs involving the dispute, including probable lawsuits. There also might be lawsuits about setting up the program in the first place. This program is getting, I think, a bit complicated.

Now, Mr. Goldstein, after each of these startup administrative costs were paid out, how can you estimate how much of the $500 million would be left aside to fund converter boxes to assist the disenfranchised families with the Nation's transition to digital television?

Mr. GOLDSTEIN. Congressman, we don't know how much it would cost to administer this program, for the very reasons that you have just talked about. We were unable to really estimate how much it would cost. There are just so many variables at this point, and so

we have not done that. What we have talked about in our previous testimony was the amount that it would cost simply if you, you know, multiplied the number of people who needed that converter box, say, who were over-the-air, or low-income, by the estimated prices of the boxes. The area that you didn't mention, one thing that is also important note in dealing with the eligibility requirements that you have just talked about is that both of the kinds of eligibility requirements, both whether it is over-the-air, or whether it is the low-income kinds of eligibility, there is a good deal of churn in both of those lists. We have been told that the cable company lists can churn as much as up to 10 percent a month, and quite a number of people go on and off various assistance programs, you know, routinely. So it is a very difficult thing to—it is a very challenging and complicated thing to try and do.

Mr. DINGELL. How much would that leave—well, how do we estimate how much this would leave to pay each other, each citizen, out of this fund which we are going to set aside? If we set aside a half a million, we have all these administrative costs that have to go on the top, how much finally goes to get to each consumer in the public, and how much does each consumer get out of this pocket full of money after everybody else has dipped their hand in it?

Mr. GOLDSTEIN. As I say, I don't know at this point, sir. We would have to wait until there is a better framework and approach for the bill, and then, either ourselves or CBO would have to try and do that, but at this point, as I mentioned, the variables are considerable.

Mr. DINGELL. Would the administrative——

Mr. GOLDSTEIN. I really can't——

Mr. DINGELL. [continuing] costs——

Mr. GOLDSTEIN. There is no precision that we could provide.

Mr. DINGELL. [continuing] be greater than not having administrative—not having all these administrative steps?

Mr. GOLDSTEIN. The business and industry do rebates all the time, of course. The problem is——

Mr. DINGELL. But we are——

Mr. GOLDSTEIN. [continuing] they don't do eligibility——

Mr. DINGELL. We are setting up a huge number of administrative steps that have to be taken. Wouldn't it be cheaper and easier just to say here fellows, here is your $50 bill for the—for what this is going to cost you, and avoid all these wonderful administrative costs that are going to be a fine, fine overhead for some deserving bureaucrat, or administrator in some business.

Mr. GOLDSTEIN. It may be. We have not costed out any of those. But you are right in recognizing the complexity of the program and the costs that are endemic to it.

Mr. DINGELL. Could it be that this is awesomely complex program, or a magnificently complex program, or a splendidly complex program?

Mr. GOLDSTEIN. I will probably leave the modifiers to you, sir, but it is a very challenging program with a considerable complexity, which will have to be unraveled, whether it is a rebate, whether it is a voucher, how—as long as there is eligibility requirements tied to it, it makes it more complex.

Mr. DINGELL. Mr. Chairman, I find this a fascinating set of questions, and I know my time has expired, so I would ask unanimous consent that I be permitted to put—to send a letter to our friends at the GAO, asking a series of questions on these matters, and that the response to that be inserted in the record.

Mr. UPTON. Without objection, that will be the case, and we——

Mr. GOLDSTEIN. We would be happy to comply. Hopefully, it will receive a timely response.

Mr. UPTON. Of course.

Mr. DINGELL. And Mr. Chairman, because of your kindness, I would also ask that I be permitted to ask some questions of our other witnesses today, because this does appear to be a somewhat complex question, and I think—and I am—I just would observe that I am contemplating putting forward an amendment which would give the names and the telephone numbers of the sponsors of this bill, so that they will be available for people that call when their sets go dark.

Mr. UPTON. I remind you that it is a discussion staff draft at the moment, so I would authorize unanimous consent that a couple of documents be part of the record. And I would yield to Ms. Blackburn.

Ms. BLACKBURN. Thank you, Mr. Chairman, and I thank all of our witnesses for being here. And I want to thank the committee chairman and the subcommittee chairman for their participation, and the work they have put into this, and Mr. Chairman, before I ask my questions, I do have one thing that I would like to just say. It is on the agenda today, but I think it is an important part of this discussion, and that is the issue with the broadcast flag, and the concerns that we have on that, and the fact that the—the decision being vacated here in DC, and today is not the time for that, but I hope at some point, we have a discussion on that issue, as we move forward on this.

I want to talk a little bit about the cost on all of this, not so much about the signals and the spectrum and all of that, but look at the cost. And Mr. Goldstein, I want to go back and let us visit for just a minute, if you will revisit the issue of the voucher program. And let us talk about how you see that being structured, what you think the cost of that would be, who would administer that program. What type bureaucracy are we talking about? If you want to define that just a little more succinctly, please, sir.

Mr. GOLDSTEIN. Sure. I will try, ma'am. As I mentioned, we have not costed out any of these programs, because of the variables that we are talking about. We have not done that, and so it is not possible at this time for us to tell you. Once, as I have indicated, once the programs have greater precision to them, either us or, more likely, CBO will be able to do that. What we were asked by the committee to do was simply, was to present the various challenges that some options might provide, to give some insight.

Ms. BLACKBURN. Sir, if I may interrupt for a moment. Your thoughts, then, are all still in theory.

Mr. GOLDSTEIN. Yes, ma'am.

Ms. BLACKBURN. Okay. All right. Great. Thank you, sir. Mr. Knorr, let me come to you. I want to go—first, let me move to page 10 of your testimony, if I may. And let us talk a little bit—you have

raised the issue of the disclosure of rates, terms, conditions. And I am interested in your thoughts on a couple of different things.

Looking at how—protecting the privacy and the sanctity of private contracts, while you are still providing legislators, regulators, local communities, with the type of valuated data on why cable rates continue to rise, looking at costs, and then I want you to say a little bit more, I want your thoughts on protecting that privacy, and then I would like for you to speak, if you will, to the programming pricing index, and you mention creating that to address the information black hole, and I want you to explain a little bit about how you would see that working, and why you think that would help. So if you will speak to that, please.

Mr. KNORR. Well, I think one of the central issues that we face, especially as a small cable operator, is that the—what—the costs that drive cable are really hidden from consumers, and hidden from everyone, primarily because of nondisclosure, very strict nondisclosure clauses, that are within the programming agreements that contain the content, including retransmission agreements from broadcasters. This really insulates the programmers that create content from the consumers that they are supposed to be serving.

What we think is very critical is to break down that insulation, and a first good step would be a PPI index, and that, basically, would be reporting similar to the reporting on rates that is given to the FCC today, that would contain the information on effective rates for programming, all programming, so that that could be compiled and indexed, and really indexed in the same way the rates are, and kind of provide a balanced picture to consumers and to officials on what is driving rates. We do think that that is—completely does insulate the details of the contract, which has been expressed as a concern, and provides that confidentiality. However, ultimately, the leverage of large media companies, it may need to go beyond that to fully paint the picture, because increasingly complex contract terms determine how customers receive their content, whether it is retransmission consent, whether it is tying. Basically, every opportunity, every lever at the disposal of large companies, because it is profit-driven, is being levered against a cable operator, to maximize distribution of content, regardless of indecency, regardless of the value of that content to consumers.

Ms. BLACKBURN. Okay. Thank you for that. My time has expired. Thank you, Mr. Chairman.

Mr. UPTON. Ms. Eshoo.

Ms. ESHOO. Thank you, again, Mr. Chairman, for holding this hearing, and thank you to all of the witnesses. I have three questions, two of Mr. Pitsch, and one of Mr. Yager. I think I will start out with Mr. Yager, since you have just one.

Your organization is running what I guess I would dub "snow job" ads. They are in today's Roll Call, and seem to me to be an attempt to somewhat frighten consumers and urge them to oppose moves to accelerate the transition. In your testimony, you say that broadcasters are more anxious than anyone to get the transition over and done with. I don't think this ad says that, but be that as it may. Do you fully support 2008 or earlier?

Mr. YAGER. I think 2008 is a very, very aggressive date to set in motion all of the things that are in this proposed legislation or draft bill.

Ms. ESHOO. The transition date, do you support 2008? Does the Association support that?

Mr. YAGER. I think what we support is a date that consumers eventually will accept. To put an arbitrary date on——

Ms. ESHOO. But how are you going to do that? Are you going to survey consumers? How——

Mr. YAGER. No. I—where we are right now is there are many elements in this draft legislation that have to come together in order for the 2008 date to work. And——

Ms. ESHOO. Okay.

Mr. YAGER. [continuing] until they come together, I don't——

Ms. ESHOO. I think you have given me the answer. You don't support it. Well, I think that fits with the ad: "Don't give over 20 million American homes a snow job." I mean, at some point, you can't hold on to both spectrums. I mean, you can't have all of it forever. So we are talking about a peaceful and sensible transition here, and at some point, I think broadcasters who are major players in this really need to decide where their advocacy lies. If you really want to be upfront and keep holding the position that you want to hold everything, then just say so. But we need you to help make this very important transition for people in the country.

Mr. Pitsch, the United States is now 16th in broadband penetration, down from 4th as recently as 2001. That is a sorry position for our country, in my view. The President has promised to deliver ubiquitous broadband by 2007. It seems pretty farfetched, and we really haven't seen anything, I don't think, on this from the Administration to move us toward the goal. What opportunities do you think the 700 megahertz spectrum present to provide the competition and the innovation, and I spoke about this in my opening statement, to deliver universal broadband? Let me ask my second question, and then you can provide your answers on both.

In 2001, the NTIA reported that relocation costs for moving the military from spectrum needed for third generation wireless systems was upwards of $2 billion. We also subsidized, as you know, Nextel's move from public safety spectrum with replacement spectrum worth hundreds of millions of dollars. Is there any reason we should not also be subsidizing television viewers that will be displaced as a result of this transition? I think that the committee and the Congress have already set this pattern, and established where it is really necessary, and it is a high priority to do so.

So would you comment or answer both of my questions? Thank you.

Mr. PITSCH. Yes. First, as to——

Ms. ESHOO. Yes to both? Okay, thank you. Teasing.

Mr. PITSCH. As to the value of the 700 megahertz frequencies, the propagation characteristics are such that we estimate, in rural areas in particular, and suburban areas, that the infrastructure costs at 700 megahertz would be one-fourth or one-fifth of what they would be at, say, 2.5 gigahertz, another alternative for wireless broadband today.

So this may be one of the most important things Congress can do to promote wireless broadband, particularly in rural areas and underserved areas. I think it would also hold the potential for creating competition. Intel and other companies want to embed this type of technology in our laptops and PDAs, and so on, dramatically reducing device costs. That could be very valuable.

Briefly, on the defense issue, I think you make a very valid point. When the Congress decided to move the defense frequencies to higher valued uses, it recognized that it could create a win-win situation by giving them new equipment. If the auction revenues are greater, I think a similar approach could be used here. I think we are not in the—we have not gotten into what the right structure for the subsidy program could be. I think, on the other side, one could legitimately say that many of the benefits from wireless broadband and laptop improvements and so on will go to higher income consumers. So we prepared—we are prepared to be constructive. I think you raise a valid point.

Ms. ESHOO. Thank you, Mr. Chairman.

Mr. UPTON. And we are—the House floor, you all heard the buzzers and beepers go on. We are like in the worst of all worlds right now. We have two votes on the House floor, so we are going to have to adjourn for those two votes, and then we are going to come back immediately after that, so I would guess we will take about a 20 minute intermission. Restrooms are on either end of the hallway, men's and women's. We will take about a 20 minute break. We are going to come back. Mr. Walden is next, and we will be able to do him, and maybe one other before, then, we get called again for two votes, and then we will have an hour before the last vote of the day. So that is—we will be back in about 20 minutes.

[Brief recess.]

Mr. UPTON. Going to get started. Is that vote over on the floor? Again, votes are going to be called here on the floor, two votes in 10 minutes. So we will just—I know there are long lines in those restrooms. Souder. If you could just shut that outer door, and Mr. Souder will be here for a moment. Mr. Walden.

Mr. WALDEN. I believe I get 8 minutes, Mr. Chairman. Thank you very much, Mr. Chairman. Again, I appreciate your hearing and our panel of witnesses today, and I went without an opening statement, because I wanted to get into the Q&A, but I can't help but make a few comments as I move toward that point.

As I listened to some of my colleagues talk about the need for every household in America, regardless of income, to get a converter for every television in America, I am struck by the phrase that we need a converter box for the rich, so we put up with tax cuts for the rich, and now we are going to hear about converter boxes for the rich, and it—amazing that Warren Buffett just bought the electrical utility that serves my State and most of the West, and yet I am going to get to buy him a converter box, because he can't afford it, and I am sort of amazed by all that nonsense.

I want to go to GAO. And I want to tell me, because I am a journalism major, not a math major, what it is going to cost if you have unlimited, no restriction on providing set-top converter boxes to 73 million people at $50 apiece.

Mr. GOLDSTEIN. Just for the boxes themselves, and not the administration of them, that is about $3.5 billion or $3.7 billion.

Mr. WALDEN. Good, $3.5 billion. I mean, the math is pretty——

Mr. GOLDSTEIN. I was a journalism major, too.

Mr. WALDEN. Oh. Well, congratulations. Maybe the Ducks will get to the Rose Bowl again some day. That is where I went. Well, yeah. We will deal with that one later.

Mr. McSlarrow, I want to ask a clarifying question. You said, I believe, in your comments, I think to one of us here, that we would see a channel for channel offset. In other words, if you had multichannel must-carry of some sort, there would be—basically would be—if you put on that channel your cable folks are at complete capacity and you have to take a channel off. Is that really what you testified to?

Mr. MCSLARROW. Sort of. And then let me—I appreciate the opportunity to clarify. What I am saying is—let me just take one example, a real world example.

Mr. WALDEN. Sure.

Mr. MCSLARROW. Cox in Northern Virginia.

Mr. WALDEN. Right.

Mr. MCSLARROW. It is actually a very robust plant. It is an 860 megahertz plant.

Mr. WALDEN. Okay.

Mr. MCSLARROW. So it is a pretty good pipe, 134 channels, every single one of them is full.

Mr. WALDEN. So there is no bandwidth capacity left.

Mr. MCSLARROW. Not at this time. Although we are, and this is why I think your question is a good one, we are obviously working on technologies, digital compression.

Mr. WALDEN. Right, right.

Mr. MCSLARROW. I mean, there are lots of things that are happening to squeeze more out of the bandwidth, but—and we are trying to bring on more advanced services, more speed for the high speed Internet service, and so all I am saying is you can't keep layering on all these requirements——

Mr. WALDEN. But that——

Mr. MCSLARROW. [continuing] without bursting the seams. And so yes, there will be operators, and probably my colleague over here, with the smaller operators, who clearly will not——

Mr. WALDEN. Right.

Mr. MCSLARROW. [continuing] be able to deal with this.

Mr. WALDEN. But not every system in America——

Mr. MCSLARROW. Not every system, no.

Mr. WALDEN. [continuing] will be channel for channel.

Mr. MCSLARROW. Not every system, no.

Mr. WALDEN. Okay. Mr. Yager, my colleague from California made the comment about broadcasters holding onto analog and digital. Can you talk to me about the kind of revenues you are generating as a result of having both the analog signal and the digital signal?

Mr. YAGER. I wish I could talk to you about the analog revenues. Unfortunately——

Mr. WALDEN. Or the digital revenues.

Mr. YAGER. The digital revenues. Unfortunately, I can't, because I am not aware of any small market, mid-sized market television station in the country that is generating any revenues at all right now off of their digital signal. As a matter of fact, we have costs involved in transmitting a digital signal.

Mr. WALDEN. And is there anybody else at this table, other than maybe CEA, but—that has expended as much to comply with Congress' 1997 act on DTV than broadcasters?

Mr. YAGER. No.

Mr. WALDEN. And I confess, I am a broadcaster, and broadcast for 38 years, we have nothing to do with TV, so I really don't have a dog——

Mr. YAGER. And the estimate is that broadcasters have spent someplace between $10 and $16 billion to convert to digital, and to the best of my knowledge, the return on that is de minimis.

Mr. WALDEN. Do you know any broadcasters that seek to be able to run two sets of transmitters, one digital and one analog, forever?

Mr. YAGER. No. I know of none that want to, or wouldn't love to see the end of the transition come as soon as possible.

Mr. WALDEN. All right. I want to go to our FCC witness, who is so far away, I cannot see your name, Mr. Chessen. And my question is a real life one. Okay. I am sitting in my hometown. I look across at a mountain in Washington called Underwood, where there are the translators for the local community television whatever it is, that does the translators for the Portland stations. I pick those up off air analog today. What happens when the over-the-air main channel analog goes away? How are those translators, how do they continue to provide service in an analog environment or convert to a digital environment?

Mr. CHESSEN. Last fall, we came up with rules for translators to transition to digital. We recognized they did not have a digital television transition laid out for them like the full power broadcasters.

Mr. WALDEN. Right.

Mr. CHESSEN. So we recently adopted rules that give them a couple options. Starting probably this summer, we could give them the opportunity to switch to digital immediately on that particular channel, or we also are planning on opening up a filing period for translators to file for a companion channel, so that they can have their own transition with two channels, just like full power broadcasters. Now, we recognize that it is probably not going to be on the same timeframe as the full power broadcasters, as you say——

Mr. WALDEN. Right. And in fact, doesn't your own notice of rulemaking indicate that some of those allocations for the digital translators won't be made until after the analog spectrum has been handed back?

Mr. CHESSEN. Right. Many translators won't be able to find that extra second channel until the spectrum opens up, when the full power broadcasters turn back their first channels.

Mr. WALDEN. So then tell me, in the real world, how all this is going to work for that 15 percent that still rely on over the air transmission of broadcast, but may indeed actually rely on those translators. In many of these rural areas, that is really how you get it.

Mr. CHESSEN. Well, at some period of time, after, again, they will go get a second channel hopefully to broadcast in digital, and for some period of time after the full power transition they are probably going to have to take the digital signal from the main station, convert it to analog to send out to their analog viewers. Then they will have their own transition time, subsequently, where they will be broadcasting still both in analog and digital, even once the full power broadcasters have gone all digital. And eventually, the FCC will then reclaim one of the channels from the translator.

We haven't set the deadline for that, but we plan on doing so in our next review of our DTV rules.

Mr. WALDEN. Mr. Yager, how will that work?

Mr. YAGER. I am a little confused, Congressman, as to how that would work. If we are going to have a hard date, give back date, and we are going to continue to feed translators with an analog signal from a transmitter, I am confused as to how that would exactly work. I don't see how the two are compatible.

Mr. CHESSEN. There will be just a digital signal going out from the main station.

Mr. WALDEN. Right.

Mr. CHESSEN. The translator will take that digital signal. It will down-convert on one channel to analog, because they are still serving analog viewers, and it will pass through a digital version on another channel for digital.

Mr. WALDEN. Which hasn't been allocated yet.

Mr. CHESSEN. Which has not yet been allocated to the translators, correct.

Mr. WALDEN. All right. But the analog translators will continue to function for how long?

Mr. CHESSEN. We have not yet set a date. We will try to make it as close to the overall transition as possible, but we said we would look at that in our next periodic review. I note that the Staff Draft sort of leaves open the possibility, by talking about full power transition being over, but that is something that perhaps could be clarified.

Mr. WALDEN. And you are—I am not up to when your periodic review process would occur. What kind of timeline is that, sir?

Mr. CHESSEN. I think it is slated to begin this year.

Mr. WALDEN. Okay.

Mr. CHESSEN. We do it every 2 years, and it is slated to begin again this year.

Mr. WALDEN. So in a 2-year cycle, you will look at this to see how this might——

Mr. CHESSEN. To see and set——

Mr. WALDEN. Because that is an issue I hear, representing a very rural district that is also very rugged terrain. I mean, I have talked to some stations that have dozens of translators to fill in just in their own market, and they are trying to deal with this.

Mr. CHESSEN. Yes, we have been working with the Translator Association and trying to make sure that they have a legitimate way to transition, too, because we recognize that lots of rural communities, especially out West, rely on those translators for service.

Mr. WALDEN. Yeah, and it is a big issue. I am sure my colleague from Wyoming would——

Mr. CHESSEN. One other thing.

Mr. WALDEN. Yes, sir.

Mr. CHESSEN. What is not in the bill, we are required by law, and this is sort of a caveat, we are required by the law to currently displace all translators at the end of the full power transition on channels 60 to 69.

Mr. WALDEN. Right.

Mr. CHESSEN. Even if, for instance, the public safety authorities are not ready to use it in that particular rural area. That is something, though, that we don't have the flexibility, we think, under the statute, to permit them to continue to operate on those channels even after the full power transition, and that is something that also, if Congress wished to clarify, could be clarified.

Mr. WALDEN. And that is channels 60 through 69?

Mr. CHESSEN. 60 to 69, we are precluded by law from permitting——

Mr. WALDEN. Do you know how many translators might be out there in those areas?

Mr. CHESSEN. I actually do.

Mr. WALDEN. You are prepared.

Mr. CHESSEN. There is 465 translators in 60 to 69, and there are 269 low power stations on those channels, so all of them would have to vacate those channels at the end of the full power transition, unless the law were changed.

Mr. WALDEN. All right. And I note Mr. Engel has returned. And I guess if I am de facto chairman, we are going to a work session. I got a few changes. But I just—I have to follow up on something you said, Mr. Souder, because I—is it Souder or Souder? Souder. Because I—as I readily admit, I have been—I am a broadcaster, been in a broadcast family. My dad got his ham license in 1934, and so, I have grown up around public service in small community radio broadcasting. I wired in the EAS in my stations. I know about Amber Alerts, and it—I have to tell you just the way you sort of talked about how broadcasters aren't first responders. I don't disagree. You are the ones out there with the fire trucks and the guns, and I readily appreciate that. But I would hope you would not diminish the partnership that has existed, and your comments—I heard them that way, and I found them not exactly flattering. Because I—we work very closely with our law enforcement and fire departments, always have, and maybe it doesn't work that way in the big cities, but I got to tell you, when there is an emergency, we drop our programming and we go live, and we interact, and we tell people where the wrecks are, to avoid them. We work with the fire departments and the police departments, and help give guidance, and I can't think of a time when we haven't—and I don't think I am alone in that. And so, I just—I know what happened on 9/11 around here, you know. And we—you get the EAS, and wasn't it the FCC that told the station in New York to quit using the EAS. And so I mean, I hope we can get over whatever that issue is that has got your folks all twisted up.

Mr. SOUDER. I think it is the use of the term first responder.

Mr. WALDEN. Okay.

Mr. SOUDER. I think in the general public, the first responder is viewed as those that first respond.

Mr. WALDEN. Yeah.

Mr. SOUDER. As opposed to some that might support us in many ways, and no one would deny that there is a strong, and there must be a strong partnership——

Mr. WALDEN. Yeah.

Mr. SOUDER. [continuing] between the first responder community and the broadcast industry——

Mr. WALDEN. Right.

Mr. SOUDER. [continuing] and many others——

Mr. WALDEN. All right. All right. Okay. I know I have exhausted my time. I think I have to go vote. I am going to turn the gavel over to my colleague from New Hampshire.

Mr. BASS [presiding]. The Chair recognizes Mr. Engel for 5 minutes.

Mr. ENGEL. Thank you, Mr. Chairman. We are all running to votes, from votes, and whatever. But we are all here. Mr. Chessen, can you tell me what the FCC is doing to work—in my opening statement, I mentioned the September 11 tragedy, and how New York now has transmitters off the Empire State Building, which is of lesser height than either the rebuilt World Trade Center or the new Freedom Tower would be. What is the FCC doing to work with New York broadcasters who have been affected by it, and are you aware of the difficulties of staying on the Empire State Building, and the ongoing plans for the new Freedom Tower?

Mr. CHESSEN. Yes, Congressman. We have been working with the New York broadcasters since the very moment on September 11, we, within hours, got them special emergency temporary authority to relocate. Ever since, we have been working with them very closely on trying to get them back on the air, and recognizing their unique circumstances. It has often been an express exemption to some of the other rules that we have. For instance, right now, we have a rule that prohibits modifications to digital stations. There is an express exception in there for the New York broadcasters affected by 9/11, and we continue to work with them as they try to find a permanent home, and we are well aware of the different moves they have tried to make, and the difficulties they have had in finding a permanent home, and we will continue to do that. But at the same time we are still trying to get as much service as possible to the New York City area, which is the No. 1 market in the country. So we are trying to recognize the unique circumstances and still make sure that we get service out there.

Mr. ENGEL. Thank you. I hope we can recognize that in the final, ultimate passage of this legislation, and the revision of this legislation.

Mr. Yager, obviously, you remember a few years ago when some satellite subscribers lost their distant network signals. I am sure you do.

Mr. YAGER. I remember it very well, sir.

Mr. ENGEL. Right. That didn't involve losing any local television stations. Am I correct about that?

Mr. YAGER. What it involved was losing network affiliate, I mean network stations that were being brought into local television markets, and what happened there is that, quite obviously, the satellite companies did not have authorization under the laws of the time.

They were bringing in illegal signals into our markets. Congress quite rightly told them to cease and desist bringing in illegal signals, and I think you know, and I certainly know the outcry that created. And there were about 550,000 households that were involved in that.

Mr. ENGEL. Well, I remember members receiving so many emails on that issue than we did for the impeachment proceeding. It was just an incredible and, as you pointed out, so many consumers lost their signal. I have been saying for a long time if we face such massive outrage over the loss of distant network signals, what would the response be from 20 million consumers who might lose all of their television service. I think that is something that we really need to keep in mind. I am not, you know, opposed to the transition, but I think we have got to keep these things in mind.

Mr. YAGER. I couldn't agree with you more.

Mr. ENGEL. Yes, thank you. Mr. Kimmelman, I agree with your statement about the need to hold harmless consumers who rely on over-the-air television. But I have to disagree with you regarding the broadcast flag. How else would you protect a songwriter's work, and the jobs of cameramen and makeup artists and just anybody in the entertainment industry? That is a concern that I have.

Mr. KIMMELMAN. Well, we share the concern that any piracy ought to be stopped. The question is whether you change the Federal Communications Communication into a regulator of all computer electronic equipment and everything that touches it, or whether you find a more narrow, tailored way to go after piracy. We think the flag, as it was proposed by the FCC, was vastly overbroad. We urge you, as you look at the issue, not to just resurrect a bad plan that would, in essence, indirectly and through the side door, start regulating all computer equipment.

The difficulty we have from the consumer side is that piracy is horrible, but what about plain old consumer copying of simple content for your family, for your friends. If you are going on vacation, the broadcast flag, while attempting to protect that, was in no way guaranteeing that consumers could make simple copies of digital content.

Mr. ENGEL. Yes, absolutely.

Mr. CHESSEN. Correct one thing for the record. The broadcast flag did not regulate computer equipment. It only regulated digital television over-the-air receivers, so regular computer equipment wouldn't be affected. It also did not in any way restrict copying. Consumers were free to make as many copies as they want of the content under the regulations. The only thing it tried to prevent was a very narrow thing, which is the mass Internet redistribution of broadcast content, in order to permit broadcasters to compete for content against cable and satellite, where that content could be protected.

Mr. KIMMELMAN. What it tried to do and what it actually would do are vastly different, I assert to you.

Mr. ENGEL. Thank you. I have no further questions, unless anyone would care to comment on any of the questions that I asked.

Mr. SHAPIRO. I would like to comment.

Mr. ENGEL. Mr. Shapiro. I thought you might.

Mr. SHAPIRO. Actually, but not what you probably think. I am not going to comment on the broadcast flag. What I would like to comment is your use of the number, and some others have used the number 20 million disenfranchised viewers. And I think it is important that the committee get to the facts, because there are facts here, and if the question is how many people does this affect, and there is two types of people, those that don't have cable or satellite, which is by six different surveys that we have done, is 13 percent of the 110 million American households. And then there are those that have cable and satellite. Do they have other TV sets which will be impacted? And only 14 percent of these people use an antenna to receive television programming on a second, third, or fourth television in their house. So when you see these ads that Anna Eshoo referred to, and you see these other claims, they are grossly exaggerated. But I don't want to diminish the fact that there will be people, a small segment of people, who will be upset, who may not get enough notice, and those are the ones I think you should focus on, and there are some very creative ideas, in addition to the rather lengthy ones that have been discussed, about ways of having those consumers get access, and if you look at the Berlin, Germany example, and at this point in history, Berlin is the only area I know of that transitioned from digital, to digital, and cutoff the analog signal. They just made these devices available, and they were—the government authorities were amazed that so few of their citizens took advantage and went for it, and it was not a very expensive government program.

Mr. ENGEL. Well, let me just say that I think we obviously, all of us, want the same thing. We don't want people inconvenienced, and we want this transition to go smoothly. I think that—and I applaud the chairman for holding these hearings. I just think that we need to be smart about it, and I am just very happy that we are not rushed to it by an 2006 deadline that I have long felt was far too premature. But I do, you know, understand what you are saying.

Mr. SHAPIRO. Thank you.

Mr. ENGEL. Thank you.

Mr. UPTON. Mr. Bass.

Mr. BASS. Thank you, Mr. Chairman, and I want—I was here at the very beginning, as you guys well know. I went over and presided over the entire military quality appropriation bill, amendments, and everything else, and now I am back here again.

Mr. RADANOVICH. That was easier.

Mr. BASS. Yeah. And I want to apologize for having missed all the testimony and the questions and everything else. This is a very important hearing, and I am going to ask a few questions. I hope I don't repeat myself, or repeat answers, and if I do, just summarize very quickly, and again, I apologize for the situation.

Mr. Shapiro, the FCC estimates that there are 16 million households that get exclusive over-the-air reception and the GAO estimates 20 million. Do you think that the NAB's estimate that there are 73 million unconnected televisions, do you think that is accurate? Or which estimate do you think is closest?

Mr. SHAPIRO. Well, let us walk through the numbers. Let us walk through the numbers. There are 110 million U.S. households

with a television set. Now, according to the last census, about 1.8 percent of American households don't have a television set, and let us agree that they are not relevant, because they won't be disenfranchised, because they already decided not to buy a TV. So we are at 110 million, 68 percent of those households, according to the NCTA, have cable service, paid for cable service. I am not even counting pirates. These are paid for cable providers. They all are served. There is another 22 or 23 million satellite subscribers. Those are—this is from SEC filings from DirecTV and EchoStar.

Mr. BASS. Did you say 68 percent or 68 million?

Mr. SHAPIRO. I am sorry. I——

Mr. MCSLARROW. Sixty six million.

Mr. BASS. Sixty six million. Okay, thank you.

Mr. SHAPIRO. Sixty six million, not a percentage.

Mr. BASS. Cable.

Mr. SHAPIRO. And with cable, it is 22 or 23 million—I am sorry, with satellite, it is 22 or 23 million. And put it together, you get around 90 percent, but you have to subtract some people. You have to subtract people who have both cable and satellite. And according—we have done research, we have called up people, we said do you have cable, do you have satellite, do you have both? And our estimate is that it is about 3 percent who have both cable and satellite. So you get to 87 percent of the American population has cable or satellite or both. So 87 percent of 110 million homes comes up with a number which I can't do in my head.

Mr. BASS. Okay.

Mr. SHAPIRO. And then you go to those people, so there is two sets of people. There is that 87 percent, and there is the 13 percent who have no cable or satellite. The 13 percent who have no cable or satellite, what are they doing? Well, it turns out that the 13 percent, they watch a lot less TV. Money really isn't the issue. They are just not interested in television, and that 13 percent has a lot of other attributes. About half of them are already hooked up to the Internet. Most of them have radios. Most of them have telephones. They are not going to be that disenfranchised. And also, we asked those 13 million, we actually went to people, we surveyed people who have no cable, no satellite, and we asked them what would you do if the government cutoff analog broadcasting. Twenty 2 percent said they would buy a new TV capable of receiving DTV signals, 42 percent said they would spend $50 to buy a set-top converter, 9 percent said they would subscribe to cable or satellite, and 22 percent of that 13 percent said they would do nothing. So the 22 percent are the ones who might be really angry and write letters.

Mr. BASS. Mr. Yager, do you have any response to that?

Mr. YAGER. Well, I—we have been using GAO figures in terms of the disserved or unserved households in this country, and when we are talking about 20.5 million households that are—receive over-the-air only signals, there are normally 2.3 television sets in most households. It is very easy to get to a 40 to 45 million set kind of universe there. Then, the rest of those households, 20 million, roughly estimated, are second, third, fourth, and fifth sets in consumers' homes that are not hooked to any MVT multiple distribution system. So it is very easy to get to the 73 million figure. I am not aware of Mr. Shapiro's figures. They are the first I have

heard them. I know he has used there are only 13 percent that are over-the-air——

Mr. BASS. Well, now, Mr. Goldstein, where did you get your numbers from?

Mr. GOLDSTEIN. I knew you would come to me sooner or later. Our numbers come from a survey that was done in 2004 by Knowledge Networks, with a 47 percent return rate. We purchased that information in order to do the work for this committee earlier this year. The information that we used was also purchased by NAB, I must say that, but at the same time, we, you know, the numbers that we have, we think, are valid. We are likely to check some of the numbers later this year, and ask some additional questions, but the numbers we have reported to the committee in—earlier this year in our testimony are still the numbers that we stand by.

Mr. BASS. All right. Well——

Mr. GOLDSTEIN. So we—just to add, Mr. Shapiro and I have agreed, actually, we are going to try and sit down in the very near future, and see if we can come to some understanding of the difference——

Mr. BASS. That would be really helpful.

Mr. GOLDSTEIN. [continuing] between our numbers.

Mr. BASS. That would be helpful, because—Mr. Chessen, how about you?

Mr. CHESSEN. We are somewhere in the middle. From the 13 percent to the 19 percent, our 15 percent number is derived from commercial sources, such as Nielsen and Kagan, which this is their business, and they get publicly available data and do surveys, and based on that, we come out with our report every year, and right now, the percentage that we report was 14.86 percent.

Mr. BASS. Thank you.

Mr. PITSCH. Congressman.

Mr. BASS. Yes, sir. Mr. Pitsch. Apologize.

Mr. PITSCH. Congressman Bass, in a study we just recently completed, and it will be released next week, we look at the same question, and our estimate is that there are 14 to 15 million households that rely primarily over-the-air, so a number much lower and closer to Mr. Shapiro's.

Mr. SHAPIRO. You are actually lower, then. It is 12 percent is what you are saying.

Mr. BASS. All right. Fair enough. Mr. Chairman, my time is expired. I will yield back to you.

Mr. UPTON. Mr. Inslee.

Mr. INSLEE. Thank you. I was thinking, after our opening comments this morning about this issue—and we have been using the word subsidy about this issue—of what, if any, subsidy there is going to be for people who experience this problem. And I was thinking that maybe that is really the wrong word, that leads to some not really precise thinking about this.

I really think it is an issue of compensation for a loss that the Federal Government is taking away from consumers, and I really think that we should start thinking about this issue as compensating citizens who are losing a working asset as a result of their Federal Government removing access to a spectrum which they own, by a conscious, Congressionally mandated decision. And if you

look at it in those terms, when you start to look at it as a compensatory issue, rather than something like an agricultural subsidy, or a subsidy for early childhood education, or Aid to Families with Dependent Children, it really leads to a different conclusion, one which would lead to suggest everyone ought to be having this takings, in a sense, it almost comes close to a property right in my view, because we were administering this public spectrum for the public, that they relied upon when they went out and bought a television set. And when they bought that television set, they thought that was going to be available to them as long as the grasses grow and the wind blows, and no one suggested to them that this was a temporary manifestation.

So I really think that we need—it is incumbent on our committee to design a compensation system for the loss of this asset, just as we would if this committee went in and disabled a person's refrigerator or air conditioning set, we are disabling a working asset that is dependent on a Federal public asset that every citizen of the United States has a partial ownership of. And I think that is how citizens are going to think about this, and whether it is 2 percent or 22 percent of the 13 percent Mr. Shapiro has suggested, or some larger number, it is going to be a large number when we start hearing about it. In fact, I almost would suggest before we pass this bill, maybe we should have a prototype where we have 1,000 people we do this to in each one of our districts next month, and then we all come back 30 days from now, and we just sort of see what happens. I think it may lead us to a more enlightened decision on what to do about this.

So assuming that the committee would go the direction where I would like it to do it, where we would compensate people for the loss of this asset, what is the best way to accomplish that, be it Federal acquisition and distribution of specified technology to do this, whether it is a voucher program, whether it is a situation like the Berlin experience, and Mr. Shapiro, if you can provide me any description of that, I would love to see that as well. I haven't been able to be here through the whole hearing, but what is your wisdom on the best way to do that? If we wanted to have the most comprehensive system of compensating people for their loss, what would it look like?

Mr. MCCOLLOUGH. Congressman, I think the simplest thing would be to provide a box at no cost. I believe if you build a box to replace the service, so there is no loss of service, essentially, you could build a box with an ATSC tuner, a digital to analog converter, and a simple RF only output, so that there would be no use of that box for anybody other than to receive over-the-air signals and bring them into a TV that couldn't receive them in digital format. But you couldn't take it and do other things, or with high definition outs, or so forth. It would be the equivalent, in this case, slightly better service. If you were to provide those at no cost, I don't think—I would think you would be surprised, as in the example Gary cited, that you won't have a whole line of folks lined up to get them. And if you do, fine. Then, they will have the same—they will have, actually, slightly better service than they are getting today over-the-air.

Mr. INSLEE. And why do you share that view that you don't think many people would actually take that option?

Mr. MCCOLLOUGH. I probably have seven TVs in my house. I have one from when I was serving in the Navy, this black and white in my attic that is not connected to anything. I have one in my garage that is sitting in the corner. I think, when you talk to folks who have lots of TVs, they have lots of TVs, and many of them aren't used or ever turned on. I wouldn't get out of my chair to go pick up the free box. If I was relying heavily on it, I absolutely would go get the free box. You will find out in a hurry who really needs one and who doesn't. I get anxious about subsidies and dollars passing all around. If you just say you need the box, come get it, folks who really need it will come get one.

Mr. INSLEE. Are there economic savings to Uncle Sam doing it that way?

Mr. MCCOLLOUGH. My guess is there will be a whole lot less boxes given out than there would be vouchers handed out. I can't know that for sure. That is speculation. And it would be a pretty straightforward process. And I do believe that would end up being probably the lowest cost alternative to Uncle Sam.

Mr. GOLDSTEIN. Congressman, I think the question has to come back to, and I think you are focusing on it, what is the policy you are trying to achieve first, and that drives the kind of program, in our opinion, based on what the research we have done. If, indeed, you are looking to create sort of a relatively broad program that doesn't have eligibility restrictions to it, you are most likely to use a fairly simple rebate kind of program. If, indeed, you wanted to restrict it, if it was simply for people who are over-the-air, or even more restricted, just to people who are low-income, you would more likely use a voucher program, we found in the research that we did. The other two options that we looked at, as we mentioned this morning, were government distribution. We didn't feel that, as we looked at it, that that seemed to be the most viable based on the kinds of interviews did. If the government itself physically distributed boxes in the way that, you know, it does various foods, to food banks and things like that, and that the other, the—a tax, a refundable tax credit, that, too, had a lot of difficulties associated with it, and administratively, might be more burdensome than you would need to get out of it. You would actually be forcing some people to file taxes who don't even file them just in order to do a—to get a box.

Mr. INSLEE. Well, my time is up. Thank you, Mr. Chair.

Mr. UPTON. Mr. Radanovich.

Mr. RADANOVICH. Thank you, Mr. Chairman. I am—I have got one question out of the text and then maybe another one. Mr. Abud, you expressed concern that the Staff Draft leaves it to cable, the discretion whether or not to convert your signals to analog. Would you rather that we require cable operators to carry your signal in analog format in lieu of carrying them in digital format, as Mr. McSlarrow suggests, or——

Mr. ABUD. Yeah, we would prefer to have the same treatment for all broadcasters, for all local broadcasters. My issue is getting it to everybody in terms of our viewers, No. 1, and No. 2, getting the same treatment for all broadcasters, for all local broadcasters.

Mr. RADANOVICH. Thank you. Thank you very much. I did have a question. I had a demonstration in my office the other day by—I got a chance to see an analog signal with a converter box, and what a digital—what it did by having gone through the digital converter. And I swear, when the analog signal, this was in my capitol office, I don't know if you guys have seen it, but when I looked at the analog signal, it was just snow. I couldn't see anything. And when it was hooked on, I could—it was incredible. I mean, it was just amazing, and I grew up in the Sierras, and we were always on the roof twisting the antenna when we grew up, to just try to get a signal out of Fresno, and there is a huge mountain in the way. And just thinking about how nice that would have been to have even at that time, but because of that, and it is remarkable, you really should get that demonstration——

Mr. MARKEY. Let me say this, Mr. Radanovich has the No. 1 website of all 535 Members of Congress, so this is—you are listening to Caesar here on this subject.

Mr. RADANOVICH. But how does that speak to—is there some potential there to speak to a must-carry rule or something, by having this converter on—a digital converter on an analog over-the-air signal to meet a must-carry requirement in a large, urban area? Is it—I mean, I can't help but think—to wonder that some people would just be happy with an analog over-the-air that got in some incredible digital pictures. I mean, am I out in left field on this, or is there some potential for that, or what? How does it—could it possibly speak to a must-carry rule?

Mr. CHESSEN. I do think it goes to the point of, whether there si a way to incentivize consumers to go out and buy these converter boxes. And one way to do that, using a must-carry approach, is the multicast approach. I think that there is a tie between the multicasting, possibly, and getting consumers an incentive to go out and buy these boxes. If you look at the experience in England, they were very successful with their over-the-air digital program and getting people to buy these converter boxes, because there are so many channels available. So a multicasting requirement actually, here, could give people incentive—everybody is assuming that the boxes are going to only be sold at the end of the transition. It is possible they could provide consumers with an incentive, if they got something more for their money, more than just the four or five broadcasters that they get over the air, that they could actually go out and buy them before, and that is one possible benefit of a multicast requirement.

Mr. RADANOVICH. Could it speak to a must-carry rule? I mean——

Mr. MCSLARROW. I guess, Congressman, the way I would look at it is, right now, as you know, cable is going through a digital transition itself, with no government subsidies or government mandates, and we have gone from 6 million digital customers 5 years ago to 26 million today, and it is accelerating, and we are providing lots of two way digital services.

And when we get to a transition, whenever that transition takes place, and we are faced with what do we do with the analog customers, what we are proposing is to allow us to down-convert, in some circumstances, just for the limited number of must-carry sta-

tions. In the meantime, you are exactly right. The converter boxes, or the more elaborate boxes that some people may want, particularly if they want high definition or DVRs, or those kinds of things, are increasingly going to penetrate the subscribership. So what you have a universe which, you know, we have gone through the numbers ad nauseam right now, but I think we all agree, the largest television universe is the cable customer universe, 66 million people, and what we are offering is to incur the cost themselves. It is not going to cost the government a dime. We will take care of the problem. No one on day one of the transition will see any difference from the day before. In the meantime, the digital transition is taking place. And when it comes to must-carry, I guess our concern is this. We are saying we will step up, we will do this. We are not asking you to place an obligation on anybody else. And near as I can tell, everybody at this table would love to place obligations on cable or some other industry. We are not going to ask you to do that. We will take care of it. So those 66 million people, you can park over here, they are done, and you still have the hard nut of the true over-the-air customers, but this is a vanishing problem, and the further out the date will be, the more likely it is that the transition will go easier, and you are going to have converter boxes that are $50, perhaps $30.

Mr. RADANOVICH. Right.

Mr. MCSLARROW. It gets easier. And as you said, today, with today's technology, people are going to want these kinds of devices, we hope. We are kind of betting our business plan on it. And so if we don't do anything to layer on requirements that suddenly put cable operators in the position of actually cutting people off from analog, which is what we would argue the discussion draft does, this can go pretty seamlessly.

Mr. RADANOVICH. All right. Thank you. And the only other point I wanted to make, too, was that in the way that this bill is going to develop, the selling of the spectrum is, I think, would generate something in—upwards of $10 billion. I am not a big subsidy person for these boxes. I think maybe if—on a lifeline basis, they might be reasonable, but whatever the cost of this subsidy is going to come out of, the $10 billion, which is credited toward savings and Medicare reform that we are doing in this same overall committee, so it is really, you know, we are kind of pitting Medicaid savings against financing of converter boxes. So, you know, I am interested in the idea, Charlie, but I yield back. Thanks.

Mr. UPTON. Mr. Stupak.

Mr. STUPAK. Thank you, Mr. Chairman. Let me pick up where Mr. Radanovich left off, because as you know, I feel when we sell the spectrum, on a date certain, part of that money has to go into law enforcement, to our first responders. I mean, where you saw with 9/11 the problems we had there, and having been law enforcement all those years, I guess I am still getting tired of when there is a flood, in order to communicate with the jurisdiction on the other side of the flood, you have to yell across the river, because the radios don't talk to each other. So interoperability is one of these things we really have to do, and Mr. Souder, you brought it up in your testimony, so just let me ask you a few questions, if I may.

We have this date that is sort of supposed to be a hard date, and I am sure you would not want to see that hard date slip when we go to converting over and selling this spectrum, correct?

Mr. SOUDER. Absolutely not. The sooner, the better, for a whole host of reasons.

Mr. STUPAK. So as you view this legislation, I am sure you want to see something, whether it is converter boxes, whatever we do, to do it in a way that will be consumer friendly, so we can get this spectrum sold, and hopefully, by then, myself, Mr. Fossella, Mr. Engel, who has a legislation, dedicate part of those proceeds to law enforcement first responders, so they can go to interoperability. I am sure you are interested in finding a careful and consumer friendly way in which we can establish a hard date and carry it through, I take it, right?

Mr. SOUDER. Absolutely so, and keep in mind that the law enforcement and public safety community are, in fact, consumers also. And similar to the gentlemen at the table with me, my 10 neighbors for the afternoon and morning, they are 911 consumers as well, so we do have a vested interest in both solutions.

Mr. STUPAK. And I take it you have no problem with our legislation. We have heard estimates that the broadband spectrum may yield at least $10 to $15 million, and so far, we have heard it should go to converter boxes, it should go to Medicare. We feel at least part of it should go to interoperability, something this country needs. So I take it you would be in support of our legislation to allow public safety officials to buy, purchase communications for interoperability?

Mr. SOUDER. Absolutely. But we have to have the spectrum to purchase the equipment to use on it.

Mr. STUPAK. Correct. Correct. Got to have the spectrum, get the hard date, give out the spectrum, give you the 700 megahertz, and then get the interoperability moving. Correct?

Mr. SOUDER. Correct. Absolutely.

Mr. STUPAK. Thanks. Mr. McSlarrow, you were talking about the 66 million people that you had, and according to some facts I have seen, or figures I have seen, there is like 134 million analog sets just connected to cable alone. Is that about right?

Mr. MCSLARROW. That is correct, sir.

Mr. STUPAK. Okay. And you were saying you are going to take care of the customer yourself, meaning cable is going to take care of it. So if we do a hard date, you will be ready to go, and those cable people will not lose anything.

Mr. MCSLARROW. Right.

Mr. STUPAK. Okay. What about the small cable systems that, you know, serve areas like I represent in very, very rural northern Michigan. How do they—how will they come into the picture?

Mr. MCSLARROW. Well, and we have representatives of smaller cable systems here, but obviously, my organization also has small systems, so I will just take a first crack, and maybe——

Mr. STUPAK. Sure.

Mr. MCSLARROW. —Patch can answer too. What we have requested from you all is that we be allowed to down-convert at the head end, and while a set-top box subsidy or cost would be in the billions of dollars, our estimate of that is that it is not insignificant,

but it is probably around $80 to $100 million, and that is spread out over, you know, thousands of cable systems. So it is a cost, but our view, and at least from small, medium, to large, it is a manageable cost.

Mr. STUPAK. Mr. Knorr, you want to add.

Mr. KNORR. Yes. We are on a little bit different metric than large cable operators. The largest systems, the average capacity is around 750 megahertz. The largest systems serve approximately 100,000 customers per head end, somewhere in that neighbors. And our customer base, our capacity is almost half that.

Mr. STUPAK. Sure.

Mr. KNORR. Our average system size is closer to 1,000 instead of 100,000. So our head end costs are multiplied, so whereas, you know, a head end cost for a small operator might be $100 or as much as $1,000 per subscriber, large cable companies, it is a tenth or a hundredth of that cost. So it is a significant burden on small operators, even—no matter what the option is.

In addition to that, we have very, very serious concerns about how the bill is written, because there is simply not the capacity for dual carriage on those small systems, and as the bill is written, if you have to carry the primary signal, that means rural systems in extreme rural Michigan will be forced to only carry an HD signal, which means every subscriber would need an HD receiver to receive the signal. If that is the only option, that would be a very significant expense for small cable operators and their customers, significant to the point that many operators would go out of business, and I think it is an important point that it is not just a matter of video competition in rural areas. It is also a matter of those companies that are providing broadband services in rural area. So it is also a digital divide question of those cable companies, if they cease to exist, in addition to losing video competition, those subscribers will be losing access to broadband services.

Mr. STUPAK. So is that the main challenge you see in this legislation as drafted, the small cable operators?

Mr. KNORR. I think that is the bullet that is aimed at the head of the small cable operators is the dual carriage requirements, and the requirements to carry the primary video signal unmodified, I think the options that the NCTA is proposing is very important for small systems is the ability and the option of carrying only the analog signals to certain constituencies. I think marketplace forces will take care of the options. Digital signals will still be available to these customers, if nothing else, through satellite. I mean, that is, you know, a marketplace force that exists, and if that community has demand for digital services, to be competitive, you will need to meet that demand.

But on the flipside, if it is a small community, there is not a lot of HD television sets. That community may be best served by making sure the analog signals are available as cost effectively as possible.

Mr. STUPAK. Well, thank you, Mr. Chairman, and thanks to our panel. I have been in and out all day for other hearings, but it has been a good discussion. Thank you.

Mr. UPTON. Mr. Gonzalez.

Mr. GONZALEZ. Thank you very much, Mr. Chairman, and I apologize for coming in late, and then asking a question when everybody has testified and had so many questions, but the question is really regarding, to Mr.—is it Chessen—Mr. Chessen, and that is, of course, I come from San Antonio. I represent half of that city. Spanish speakers predominate, and all studies indicate that those analog TVs happen to be located in many of the homes occupied by my constituents who are Spanish-speaking. And the question I have is what effort have you all made regarding the Spanish-speaking population out there, with these analog televisions, as far as educating them on what is going to happen, taking any steps, again, just part of the education process, and what are you doing? Is there any kind of Spanish language component to address those needs?

Mr. CHESSEN. We have a major comprehensive consumer education effort that we launched last fall. We have begun outreach to all segments. Part of what we have been doing, at least segments of it, are currently in Spanish language. I can't say that the entire website at this point is, but certainly elements of it are in Spanish, and we have continued plans to keep—continue doing outreach to all segments, and we are meeting with all sorts of constituent groups, and speaking to different groups, and doing everything we can within our resources and expertise to try to get the word out there. And we are making some progress, but obviously, there is a lot more that needs to be done.

Mr. GONZALEZ. Making reference to websites is just never going to get out. The message doesn't get out. Advocacy groups is a good idea, and utilizing the many that we do have, local, State and of national significance. So I would like to get back to your office, and maybe talk to the individual who might be in charge of that specific part of the whole endeavor, and see who they are working with, and maybe we can suggest some, a couple of different thoughts on it.

Mr. CHESSEN. Absolutely.

Mr. GONZALEZ. Okay. Thank you very much, and I yield back, Mr. Chairman.

Mr. UPTON. I am told that Mr. Markey has an additional question, and Mr. Inslee as well. Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman. You know, I remember back in 1995, when the Republican revolution took over, and there was a Contract with America. I don't know if any of you remember that, but Mr.——

Mr. UPTON. We are still waiting for your signature on it.

Mr. MARKEY. Yeah, Mr. Tauzin—well, my signature wasn't on it. That is the point, that there was one item that Mr.—one of the 10 commandments was the Private Property Protection Act of 1995, and what it said was that any time any private property was reduced by government regulations, that the citizens should be compensated. Mr. Inslee called it a takings. Mr. Tauzin, in that amendment, and I can actually feel the spirit, an analog form of Mr. Tauzin in this room right now. And in fact, he led the charge against my amendment in 1997, which would have mandated that no TV set could be sold, beginning in 2001, that couldn't receive a digital signal. And so his analog spirit still lives here, but that decision,

back in 1997, affects what we are doing right now. If we had done that then, we wouldn't even be having this hearing right now. We would have sold 180 or 200 million of these TV sets by 2008.

Mr. Kimmelman, quickly, I am going to do this very quickly. You give me a quick answer. Wireless policy. We are kind of coming down to only a couple of competitors in wireless. What can this change do to help wireless broadband competition?

Mr. KIMMELMAN. It is very simple, Mr. Markey. You have got to make sure the two dominant wireless players, Verizon Wireless and Cingular, owned by SBC and BellSouth, don't gobble up all the spectrum that you want to get all the money from through the auctions. You need more players in the wireless market to have competition.

Mr. MARKEY. Okay. Thank you. Mr. McSlarrow, you heard Mr. Abud talk about Spanish language stations. Could you respond to the concerns which were raised by Mr. Abud, and how you think the cable industry can respond to it?

Mr. MCSLARROW. Yeah. I have to say, and I actually tried to persuade him during the break, although I think unsuccessfully, that we actually have interests in common here. I think the concerns are perfectly legitimate. My only point would be we have, since we have a customer base, and a growing customer base, with an interest in either Spanish-speaking television and programming or targeted to that audience, in delivering it.

Now, what we have to remember is the universe of programming isn't just Spanish-speaking broadcasts. They also have Spanish-speaking cable networks, and we have things like CTV, which is English, but directed at a Hispanic audience, but we have Discovery en Espanol, we have History Channel en Espanol. They don't have must-carry rights. So my point would be why not allow all of those programming, networks broadcast to compete in the marketplace for carriage on a distribution platform that has some capacity constraints.

Mr. MARKEY. Okay. Let me go back to Mr. Abud quickly.

Mr. ABUD. Quickly. The relationship that the local Spanish language television stations have with their audience is very different than a national network. We provide them with service, and going to your point initially about what are we going to be giving in return. We provide a lot of community services, and having additional capacity to everybody is crucial for us to keep providing those services to the community.

Mr. MARKEY. Thank you, Mr. Abud, very much. By the way, McCollough, my brother-in-law lives in Palo Alto. He hasn't got the word yet. He sent me a brand new, beautiful, 27 inch analog TV set for Christmas. So he is a very intelligent guy. I didn't have the nerve to say I don't want this. Get me a digital one. You know what I mean? And I think a lot of people are in that situation. So together, there is a real consumer issue there, and I appreciate what you are saying.

Mr. MCCOLLOUGH. That is probably because he probably doesn't know when the transition date is.

Mr. MARKEY. He would be shocked. He would be shocked to know that—he is a very successful lawyer out there.

Mr. Goldstein, final question. In your testimony, when we talk about any eligibility requirements, such as a financial means testing or exclusively free over-the-air, it makes a consumer reimbursement fund both challenging and complex. It is not going to be easy to figure out how to put together that fund. And if we simply sent the FCC a set sum of money, say $500 million, and told the FCC to take care of consumers, that amount of money would be insufficient for making all consumers whole. So the FCC would have to limit eligibility in some way that ensured that that money was spent best, but is there a precedent for such a one time program that you have been able to find anywhere, where an agency was handed a sum of money, and said, and closed their eyes, then, and said try to do your best with it.

Mr. GOLDSTEIN. Not that we have been able to find so far. We have looked at a variety of programs, and we have discussed some in the testimony in the back, but they are not analogous to what we are talking about today, really, in terms, potentially, of the numbers of people, or in the one time approach that we are talking about here.

Mr. MARKEY. So we are in political terra incognita here. Is that——

Mr. GOLDSTEIN. It seems that way to us at this point, yes.

Mr. MARKEY. Yeah, this would be a challenge of unprecedented complexity, especially since, like 43 percent, I think, of food stamp eligible people don't even take food stamps, you know. So no matter what list you use, it is going to be incomplete in terms of the number of people who would potentially be qualified under a subsidy program that only helped the people who were in the bottom, you know, 20 or 30 percentile of income, and——

Mr. GOLDSTEIN. It would also have to be a live list, because there is significant churning in both kinds of lists, both cable lists, if you were going to try to pay against OTA, as well as in the various subsidy programs, that do offer food stamps and things like that. There is plenty of people coming on and off assistance programs all the time.

Mr. MARKEY. Okay. Thank you. Thank you, Mr. Chairman.

Mr. UPTON. Mr. Bass.

Mr. BASS. Thank you. Could you gentlemen all just answer with a yes, no. December 31, 2008, yes, no. Just go right down the line.

Mr. CHESSEN. We will meet whatever date Congress sets for us.

Mr. BASS. That will not be acceptable from now on.

Mr. GOLDSTEIN. I would have to say yes, but obviously, there are many challenges that remain.

Mr. SHAPIRO. Yes.

Mr. YAGER. I would say it would be very difficult. Okay.

Mr. MCSLARROW. We will be ready.

Mr. ABUD. We are ready.

Mr. MCCOLLOUGH. Yes.

Mr. KNORR. Yes, but——

Mr. BASS. Next.

Mr. SOUDER. Yes——

Mr. KIMMELMAN. By the way you are phrasing it, I would just say no, if it costs consumers.

Mr. PITSCH. Yes. Or earlier.

Mr. BASS. Fair enough. One last question. Mr. Yager, are there—is there anything we could incorporate under this bill, any provision, that would provide—I mentioned this in my opening statement, incentives to broadcasters or other parties, perhaps, to convert to digital, sole digital, nothing but digital, earlier than December 31, 2008.

Mr. YAGER. I think, if we got all of the pieces that have been outlined here today, and I heard Congressman Dingell's kind of questioning of Mr. Goldstein about how you would put a subsidy program together, how we are going to draft this legislation, and that it could go forward with no hitches, no problems, that we were sure that the consumer was not going to be deprived of his over-the-air television, broadcasters are there. We want to——

Mr. BASS. That is not what I asked. If there—I will make this—if—is there anything we could put into the bill that would have broadcasters say we want to convert earlier than then. We will take the heat. We want to convert early.

Mr. YAGER. No. I think the bill is——

Mr. BASS. Nothing we can do about that——

Mr. YAGER. Where it is is very good.

Mr. BASS. It doesn't need to be improved upon.

Mr. YAGER. Well, it could be improved upon in that one area that we talked about in terms of the must-carry for small market stations.

Mr. BASS. Anybody else have any other comments. You don't have to. Because we just had a vote called. All right. Thank you very much, Mr. Chairman.

Mr. UPTON. Mr. Inslee, do you have one more question before we adjourn?

Mr. INSLEE. I just wondered if you think it would be good to have a—the consumer needing a voucher for $50, or you get a voucher for $25, but the box will block out the Michael Jackson trial, if that is the consumer choice here. Mr. McSlarrow, could you respond to the assertion that the Hispanic community may not be well served by the cable industry's down-conversion proposals. Someone has made that suggestion, I think.

Mr. MCSLARROW. Sure. And I think it is exactly the opposite. What we were saying is the discussion draft today actually makes it an option for cable to offer digital only, and digital only including Spanish-speaking broadcast stations, to a market where we all know that most of their customers will be analog receivers. We are the ones who are saying give us the flexibility to offer those stations, so that we can reach the entire market. That is what we want, because they are our customers, too.

Mr. INSLEE. Thank you.

Mr. MARKEY. Mr. Chairman, if I may, and I appreciate your indulgence. Mr. Goldstein, if instead of ending it on December 31, 2008, we ended it on December 31, 2009, and another 30 or 35 million digital sets were sold in that year, how would that affect the subsidy that was needed, and the complexity of the distribution of a subsidy, in terms of the reduced number of people would then feel that they were eligible or would apply?

Mr. GOLDSTEIN. I am not sure how it would affect the complexity, if the same kind of eligibility requirements were still being utilized,

whether it—regardless of which kind we have talked about, whether it was over the air or whether it was low-income, but clearly, the more——

Mr. MARKEY. Would it have a substantial impact on the amount of money that would have to be part of the subsidy?

Mr. GOLDSTEIN. Well, certainly. If—the more TVs that are digital, the fewer converter boxes we may need to utilize, the better off we are going to be.

Mr. MARKEY. Okay. Thank you, Mr. Chairman.

Mr. UPTON. So does that mean that it would go under $500 million?

Mr. GOLDSTEIN. I don't know that yet.

Mr. UPTON. I just want to say, I appreciate all the many hours by the staff on both sides. Obviously, the members' involvement, your preparation, your testimony. We look forward to working with all of you as we get, for sure the right fix. I might just say to my friend, Mr. Markey, that I don't think Brother Barton will be very happy if this date moves any further than it is. But I won't tell him that on the last vote to spoil his Memorial Day break, as we finish up.

But again, we appreciate your testimony, we look forward to working with you, and we will adjourn the hearing for the vote.

[Whereupon, at 3:42 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF ECHOSTAR COMMUNICATIONS CORPORATION

EchoStar Communications Corporation ("EchoStar") thanks Chairman Upton, Congressman Markey, and the distinguished members of the Subcommittee for inviting EchoStar to discuss the staff discussion draft of the DTV Transition Act of 2005. EchoStar operates the DISH Network Direct Broadcast Satellite ("DBS") service, which provides hundreds of channels of digital video and other programming to more than eleven million subscribers nationwide.

As a distributor of television programming, EchoStar has long been interested in the nation's transition to digital television ("DTV") and the benefits the transition will bring to television viewers including EchoStar's subscribers. In the last Congress, EchoStar testified in support of the so-called "digital white area" proposal that was designed to hasten the lagging DTV transition by permitting satellite TV providers to offer DTV programming to households that are not served with a local over-the-air digital signal. EchoStar applauds Congress's passage of the digital white area provision as part of the Satellite Home Viewer Extension and Reauthorization Act of 2004 last December.[1] This law allows consumers, especially those in rural areas, to receive a network DTV signal via satellite when they cannot receive one from their local network affiliate over the air.

Congress is recognizing, however, that more may be necessary to get the transition done in an expeditious fashion. And this Subcommittee is accordingly considering today a draft bill that, while extending the transition deadline from December 31, 2006 to December 31, 2008, would make the new deadline a hard one. While the desire to impose a hard and fast deadline for completing the DTV transition is understandable, Congress should resist attempts by broadcasters to transfer the cost of the transition to cable operators and satellite carriers.

EchoStar has documented elsewhere the tremendous burdens that even single-feed DTV must-carry would mean for satellite distributors. These burdens are significantly greater than the ones for cable operators. This is due to two reasons: first, DBS is a national service, with a finite amount of spectrum that must serve broad geographical areas, in contrast with the local headend architecture of cable. Second, DBS suffers from a spectrum handicap compared to digital cable systems. For these and other reasons, EchoStar has detailed the constitutional problems that would at-

[1] Satellite Home Viewer Extension and Reauthorization Act of 2004 ("SHVERA"), Pub. L. No. 108-447, 118 Stat. 2809 (2004), § Section 204.

tend any obligation that requires a satellite TV operator to carry all stations in a market in high definition television ("HDTV").

But of course the so-called "multicast" and "dual must-carry" obligations would go even farther in being inappropriate as a matter of policy and law. EchoStar is referring to any measure that would require multichannel video programming distributors ("MVPDs") such as cable and DBS operators to shoulder the burden of carrying a multiplicity of DTV programming streams for each local DTV broadcaster (known as "multicasting"), or to carry simultaneously both an analog and digital programming stream for each local broadcast station (known as "dual carriage").

Significantly, the Federal Communications Commission ("FCC") in February declined to impose either a multicast or a dual carriage requirement because it found that such requirements would not pass constitutional muster under the *O'Brien, Turner I,* and *Turner II* criteria.[2] The FCC's order on this issue provides an illuminating discussion of why mandatory multicasting and dual carriage are ill advised.

While the staff's draft of the DTV Transition Act got it right on the multicast issue, it raises some concerns regarding dual carriage. There is no doubt that mandatory dual carriage would be unconstitutional. It will not further any important governmental interest as is required by *O'Brien, Turner I,* and *Turner II.* As the FCC found, there is no evidence that a lack of dual carriage will substantially diminish the availability or quality of broadcast signals available to over-the-air subscribers.[3] Nor would dual carriage promote diversity among programming voices since it only entails digital programming that simulcasts existing analog programming. So, even setting aside the burdens from such an obligation, the FCC has already found that there is no compelling government interest that it would advance.

Section 6 of the draft provides that a cable operator may convert a digital signal to an analog signal so long as the cable operator continues to provide its subscribers with the digital version of the signal. This flexibility is in fact not necessary for the distributor. For many years, a sizable proportion of MVPD subscribers will not be equipped with DTV sets, so allowing dual carriage for popular channels will be in the interest of the broadcaster anyway. But, in return for this unnecessary flexibility, distributors would appear to become subject to a form of back-door dual carriage, in the guise of a modified dual carry-one-carry-all. Certainly, EchoStar does not read this draft to impose dual carriage across the board. If a cable operator makes the analog signal of one retransmission consent local station available to subscribers (as it must in order to provide it to its analog customer), according to EchoStar's reading of the law, it need not do the same for all local stations in the same market. Nevertheless, if a cable operator makes the analog signal of one *must carry* local station available to subscribers (as it must if it is to provide it to its analog customer), it must do the same for all must carry stations in the same market. This is dual must carry. The draft further directs the FCC to adopt similar requirements for satellite television providers, which means that DBS operators such as EchoStar would become subject to this dual carriage regime. Although DBS systems are digital, many subscriber set-top boxes are only equipped to receive standard definition television. EchoStar might therefore be forced to dual carriage of certain popular channels to serve its subscribers. It also might be desirable to provide dual carriage of a very limited number of must carry stations. This latter plan would be thwarted by the bandwidth burden imposed by the draft's a dual carry-one, dual carry-all rule. Such a regime would be misguided.

EchoStar would also like to bring to the committee's attention a very vexing problem endemic to the entire must-carry regime. By requiring the carriage of non-local and duplicative signals that use up spectrum that could instead be devoted to other uses, must-carry actually diminishes the ability of satellite television to provide local service in as many local markets as possible. "Local" stations that merely broadcast a feed duplicative of a national programming network, such as affiliates of home shopping networks, are an example of this counter-productive effect of the must-carry regime. Carriage of such non-local and duplicative programming should not be required as part of the must-carry regime.

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[2] *In the Matter of Carriage of Digital Television Broadcast Signals: Amendment to Part 76 of the Commission's Rules,* Second Report and Order and First Order on Reconsideration, CS Docket No. 98-120, FC 05-27 (rel. Feb. 23, 2005) ("*FCC Digital Signal Carriage Order*") (citing *United States v. O'Brien*, 391 U.S. 367 (1968), *Turner Broad. Sys., Inc. v. FCC,* 512 U.S. 622 (1994) ("Turner I"), and *Turner Broad. Sys., Inc. v. FCC,* 520 U.S. 180 (1997 ("Turner II")).

[3] *See FCC Digital Signal Carriage Order* at ¶18 (pointing out that the focus of the governmental interest test in the Turner cases is not the economic health of broadcasting per se, but the benefits that broadcasting provides to consumers) (citing *Turner* II, 520 U.S. at 222).

For its part, EchoStar is preparing for and attempting to promote the DTV transition by, among other things: offering extensive HDTV packages *now*; purchasing satellites, such as its recently announced intention to acquire the Rainbow 1 satellite, which will be used to provide DTV programming; implementing internal system upgrades to enable EchoStar to handle more HD programming; and rolling out more set-top boxes with HD capability to consumers.

Congress should recognize, however, that the effectuation of the DTV transition itself will require more spectrum for satellite television services. An HD signal requires significantly more bandwidth than the bandwidth required by a standard definition analog signal. The FCC should make additional spectrum available to direct to home satellite service, including authorizing service to the U.S. from foreign DBS slots.

Congress should also acknowledge the reality that DBS operators compress digital signals in order to maximize the number of programming streams that may be carried, and confirm that such compression does not constitute "material degradation" under the must carry statute. Compression allows us to make the most efficient use of valuable spectrum resources without degrading signal quality received by our viewers. Indeed, EchoStar currently uses advanced compression techniques to deliver its current slate of high definition programming without noticeable degradation in picture quality for its subscribers, and a key underpinning to our future plans for transmitting high definition programming is the continued ability to use such advanced technology. Without this technology, EchoStar will simply be unable to offer a full slate of local broadcasters' DTV service, and our ability to advance the digital transition will effectively be negated. However, some broadcasters have demanded that the FCC prohibit the use of compression, equating compression with "material degradation" of the broadcast signal and suggesting that compression is unnecessary. These assertions are simply wrong.

In conclusion, EchoStar applauds the Subcommittee for deliberating on measures to effect the expeditious completion of the DTV transition. However, we urge you not to adopt the misguided dual carry-one, dual carry-all provision in the staff discussion draft.

RESPONSE FOR THE RECORD BY RICK CHESSEN, CHAIR, DTV TASK FORCE, FEDERAL COMMUNICATIONS COMMISSION, TO QUESTIONS OF REPRESENTATIVE BOBBY L. RUSH

Question 1: How many spectrum auctions has the FCC conducted?

Answer: The Federal Communications Commission ("Commission") has conducted 56 spectrum auctions.

Question 2: What is the average time it takes to complete an auction?

Answer: Spectrum-based services that are subject to competitive bidding or any other license assignment method typically require allocation and rulemaking proceedings conducted pursuant to the Administrative Procedure Act ("APA"). See 5 U.S.C. § 553. The APA mandates notice and an opportunity for public comment, to allocate or reallocate spectrum and to establish or modify the rules for the service to be licensed, which would include whether or not the service is subject to competitive bidding. Once the Commission establishes these rules, the time for conducting individual auctions varies widely depending upon the complexity of each auction. Also, the Commission has streamlined and improved its process and procedures since the initial auctions in 1994, so an average time—from the rulemaking process through the actual grant of the license—would not present an accurate picture of a typical auction in recent years. For the 22 auctions that the Commission has conducted since implementing an Internet-based bidding system in 2001, the average number of bidding days per auction has been 8-9 days (minimum = 1, maximum = 24), and the average number of calendar days per auction has been 12 days (minimum = 1, maximum = 37). The answer to Question 7 below provides a more thorough timeline of the complete auctions process.

A complete summary of completed and scheduled auctions can be found on the Commission's Auctions web site at http://wireless.fcc.gov/auctions/default.htm?job=auctions—all.

Question 3: How many licenses have been awarded through the auction process?

Answer: Bidders in the 56 auctions held to date have won 28,449 licenses. However, the Commission did not award some of these licenses because some winning bidders defaulted before the grant of the licensee applications.

Question 4: How many of these licenses have been returned to the FCC due to nonpayment, licensee failure to build out, or for other reasons?

Answer: Approximately 1,700 licenses of the 28,449 licenses won through the auctions process have been returned to the Commission due to nonpayment, bankruptcy

settlements, restructurings conducted by the Commission or failure to meet the Commission's build out requirements. Not all of the licenses returned to the Commission include the same amount of spectrum or entire market area originally auctioned because licensees may disaggregate and partition licenses after license grant. Thus, for some of the licenses, only a portion of the original license won at auction has been returned. In some cases, licenses were returned voluntarily by the licensees. After licenses are returned, the Commission can auction a new license for the same spectrum covered by the returned license.

Question 5: How many licensees have declared bankruptcy?

Answer: Thirty licensees with auction-related installment debt have declared bankruptcy. These licensees won licenses in the following services: 218-219 MHz Service, Broadband and Narrowband PCS, Multimedia Distribution Service, and the 900 MHz Specialized Mobile Radio Service. Licensees in other auctioned services have reorganized under bankruptcy (*e.g.,* Worldcom, Teligent, Winstar, Adelphia), but the Commission was not a creditor in those cases because the licenses won at auction had already been paid in full.

Question 6: What has the FCC done since the *NextWave* case to ensure that the Commission does not find itself in a similar situation when a licensee experiences financial difficulty?

Answer: In 1997, before any of the court decisions in the NextWave bankruptcy case (*FCC v. NextWave Personal Communications, Inc.,* 537 U.S. 293 (2003)), the Commission suspended the use of installment payments. It affirmed this decision in 2000. This action eliminated protracted payment periods when a winning bidder could enter bankruptcy or otherwise fail to meet its payment obligations. In addition, since the Supreme Court's decision in the *NextWave* case, payment procedures generally require the deposit of a winning bidder's final payment 20 business days after the close of the auction is announced. These payment procedures mitigate the risk that the Commission will not receive the full amount of the winning bid because of bankruptcy or other reasons. The Commission's rules do not subject broadcast auctions to this revised payment procedure, but in a Notice of Proposed Rulemaking released on June 14, 2005, the Commission proposed to change its rules to allow for more discretion in setting post-auction payment deadlines.

Question 7: What steps are involved in an auction? Please provide me with a list of such steps from planning to when the FCC hands over the license. Please include an approximate timeline for each step.

Answer:

Overview of Typical Auction Timeline:

- *Establishing Allocation and Service Rules*—The Commission must first—conduct a notice-and-comment rulemaking to allocate the spectrum for a particular use (e.g., satellite, fixed, mobile, broadcasting). The Commission must also conduct a separate—rulemaking to determine whether the service should be subject to competitive bidding and to develop rules governing the technical operations for the service and eligibility for licenses.
- *Pre-auction preparation*—Standard pre-auction procedures begin after release of final allocation and service rules for the spectrum to be auctioned. The Commission provides prospective bidders approximately six months from the announcement of a start date to prepare for the bidding to commence. These procedures include:
  - Auction Design Comment Public Notice ("PN")—approximately 4-6 months before bidding start date (seeks comment on auction procedures and provides 3-4 weeks for interested parties to submit comments and reply comments);
  - Auction Procedures PN—approximately 3-5 months before bidding start date;
  - Bidders' Seminar—approximately 60-75 days before bidding start date
  - Short-form Auction Application (FCC Form 175) Deadline—approximately 45-60 days before bidding start date;
  - Short-form Application Status PN —approximately 10-14 days after short-form deadline;
  - Upfront Payment Deadline—approximately 3-4 weeks before bidding start date;
  - Short-form Application Resubmission Deadline—approximately 3-4 weeks before bidding start date;
  - Qualified Bidder PN—approximately 10-12 days before bidding start date;
  - Qualified Bidders Registration—immediately after release of Qualified Bidders PN;
  - Mock Auction—approximately 2-5 days before bidding start date.

  The Commission uses this pre-auction process pursuant to the requirements of Section 309(j)(3)(E) of the Communications Act (added in 1997). The

timeline, along with additional explanation, is posted on the Commission's Auctions web site at: http://wireless.fcc.gov/auctions/default.htm?job=about—auctions&page=3

- *Duration of Bidding*—Length varies depending upon complexity of auction. As noted in the answer to Question 2, the average number of bidding days since 2001 has been 8-9 days.
  - Auction Closing PN—approximately 3-5 days after bidding ends.
- *Post-auction payment and award of licenses*—Licensing may take as little as two months for those applications not subject to petitions to deny, designated entity issues, tribal lands bidding credit requests, or competitive issues. Attachment A to this document contains a summary of auctions and post-auction processing times. Licensing steps include:
  - Long-form (FCC Form 601) License Applications Deadline—approximately 10 business days after Auction Closing PN is released;
  - Down payments due on winning bids—approximately 10 business days after Auction Closing PN is released;
  - Final payments due on winning bids—approximately 10 business days after down payment deadline (as noted above in response to Question 6, broadcast auctions have been subject to different procedures and final payments are due 10 business days following the issuance of a "Ready to Grant" PN after the long-form application has been processed);
  - Accepted for Filing PN—approximately 2 weeks after long-forms are filed;
  - Petitions to Deny due—10 days after Accepted for Filing PN is released (with Oppositions due five business days after a Petition to Deny and Replies due five business days after an Opposition);
  - Grant PN—approximately 20 business days after Accepted for Filing PN is released (assuming no petitions to deny, designated entity issues, tribal lands bidding credit requests, or competitive issues).

Question 8: At what point can the Federal government count as revenue the proceeds raised from the auction process?

Answer: Consistent with federal accounting standards, the Commission recognizes auction revenue at the time a public notice is released announcing that the license has been granted. The Commission transfers funds received from auctions as revenue at the end of the fiscal year in which the license is granted.

Question 9: What is the average amount of time it takes the Commission to count as revenue proceeds raised from the auction process?

Answer: The Commission recognizes funds received from auctions as revenue at the end of the fiscal year in which the licenses are granted. The Commission processes long-form applications for licenses won at auction and grants licenses throughout each fiscal year. For all of the licenses granted by the Commission as part of the auctions program, 35 percent were granted within 120 days, 56 percent were granted within 180 days, and 96 percent were granted within one year of the end of each auction. Approximately four percent of licenses granted have taken longer than one year. These special cases are typically due to circumstances such as Commission investigations into applicant qualifications, requests for waiver of Commission rules, petitions to deny, or delays due to tribal lands bidding credit notifications.

Question 10: What is the amount of revenue that has been generated by spectrum auctions?

Answer: As of September 30, 2004, the total revenue raised from the Commission's spectrum auctions is $26.8 billion. As of that date, more than $16.5 billion in actual receipts have been deposited into the U.S. Treasury.

Question 11: How many licensees have yet to build out in their license areas?

Answer: Commission licensees that have won their spectrum through auctions have complied with the build out rules 98 percent of the time. If construction does not occur by deadline, the license may be terminated and re-auctioned.

It is important to note the differences in build out rules for the wide variety of services subject to auction because the Commission adopts particular construction rules, benchmarks, and timeframes for each different service. In terms of timing, the Commission requires some licensees to undertake initial construction early or mid-way through their license terms, and provide for further construction by the expiration of the first license term. Rules applicable to other services require licensees to construct by the expiration of the first license term, and some licensees have construction permits requiring construction over a relatively short period of time. For licenses won at auction since the inception of the auctions program, some have construction deadlines that have already passed, while others have construction deadlines occurring months or years from now.

Also, there are a number of rule variations defining construction. Construction requirements include population-based (i.e., a certain percentage of the population of the licensed area must be covered), geographic-based (i.e., a certain percentage of the geographic area of the licensed area must be covered), a substantial service requirement (which is neither a bright-line population-based nor geographic-based requirement), and in the broadcast case, the requirement to construct facilities in the manner described in their application at a particular site.

Question 12: How has the auctioning of spectrum served the public interest?

Answer: The Commission manages the auctions program pursuant to Congressional directive. Congress first authorized spectrum auctions in the Omnibus Budget Reconciliation Act of 1993, (Pub.L. No. 103-66), amending the Communications Act of 1934 (auction authority is codified at 47 U.S.C. § 309(j)). Congress later amended this section of the code in the Balanced Budget Act of 1997 (Pub.L. 105-33; Aug. 5 1997) to expand and extend the Commission's auction authority. Legislative history indicates that Congress sees this program as an important option for licensing a limited national resource.

The auctioning of spectrum has led to the ubiquitous rollout of spectrum to licensees that have a financial stake in the rapid delivery of new services. This method of assigning spectrum is more efficient and less time consuming than past licensing regimes such as comparative hearings where licensing decisions sometimes took years to resolve. The Commission's ability to license spectrum quickly and efficiently spurs competition, leads to the development of new technologies, and aids in the growth of the telecommunications sector.

In addition, auctions serve the public interest goal of transparency and objectivity in government processes—the Commission publishes precise bidding procedures and each bidder begins the process knowing that the highest bid will result in a license. Finally, spectrum auctions return a portion of the value of the public spectrum resource to the United States Treasury. To date, auctioning spectrum has raised more than $26 billion.

Question 13: Has the auction process resulted in the spectrum being used in the most productive way?

Answer: This past September, the Commission adopted its Ninth Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, an annual report required by the Omnibus Budget Reconciliation Act of 1993. The information in this annual report demonstrates the impact of the auctions process. By the end of 2003, there were approximately 161 million mobile telephone subscribers, up from 16 million for year end 1993. At the same time, the average revenue per minute, a proxy for price per minute, dramatically decreased over that time from $0.44 in 1993, to $0.29 in 1998 and to $0.09 at year end 2003. In addition, the monthly minutes of use by mobile telephone users dramatically increased from 119 minutes in 1993, to 185 minutes 1998 and 507 minutes in 2003.

Question 14: What is the FCC doing to ensure that spectrum is being used in the most efficient manner?

Answer: The Commission uses several mechanisms for ensuring that spectrum is used in the most efficient manner. In circumstances where competitive bidding for spectrum licenses is required, the Commission has designed its competitive bidding mechanisms and service rules to serve several public interest objectives, including, but not limited to, the efficient and intensive use of the public spectrum resource. The Commission seeks to assure that licensed spectrum is put to its highest and best use based largely on the demands of the market and available technology. Licensees that have paid full value for spectrum licenses at auction or in the secondary market have every incentive to make the most efficient use of the spectrum, consistent with the particular rules of each service, the capabilities of existing technology, and the physical characteristics of the authorized frequencies being used.

In other radio services that have not been subject to competitive bidding (*e.g.,* private land mobile, public safety, and international satellite services), the Commission has adopted specific service and technical rules and licensing procedures that enhance efficient use. These rules are designed to ensure timely construction of facilities and to provide licensees with adequate spectrum for their stated purposes or pursuant to regional planning. They also achieve efficiency by, for example, mandating narrowband or other spectrally efficient technologies that use less spectrum.

Flexible secondary market policies also allow licenses in certain services to be freely transferred to other qualified entities under new streamlined procedures. In satellite and broadcast services, the Commission determines the specific amount of spectrum to allocate for the stated purposes imposes strict construction milestones and imposes financial qualifications or bonding requirements. In authorizing the use of unlicensed devices in many frequency bands, the Commission's Part 15 rules en-

sure that many low power devices can effectively share the spectrum without causing harmful interference to each other or licensed uses.

Question 15: Would greater flexibility in the FCC's authority to issue licenses result in greater diversity of license holders?

Answer: The Commission's current authority under Section 309(j) of the Communications Act provides discretion to achieve the statutory objectives put in place in 1993 to promote economic opportunity, avoid excessive concentration of licenses and to disseminate licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women.

As noted below in response to question 18, the Commission has promoted participation in auctions by women, minorities and small businesses through the offer of bidding credits to small entities and new entrants and the designation of small geographic license areas.

Question 16: Does the FCC want to see the auction process reauthorized? If so, what improvements does the FCC think should be made to the auction program?

Answer: The decision to reauthorize the auctions process is a policy decision squarely within the purview of Congress. The Commission's experience over the last 12 years demonstrates that the auctions process is a speedy, efficient mechanism for deploying spectrum. Auctions have assigned quickly licenses to the parties that value them most highly and facilitated efficient aggregation of spectrum, which has encouraged rapid deployment of service and permitted increased competition among service providers. The auctions process has proved to be a fair, objective, open, and transparent process that, as of September 30, 2004, has resulted in the recognition of $26.8 billion to the U.S. government.

If auction authority terminates in 2007, as currently provided by statute, the Commission would lose an important tool for resolving mutually exclusive applications and recovering a portion of the value of the spectrum for the public.

The current statutory framework governing auctions has permitted the program to evolve and successfully meet new challenges since the inception of the program. The flexible nature of the current statutory framework would allow the Commission to adapt the auctions program to technological and industry changes.

Question 17: How many women, minorities, and small businesses have been awarded licenses through the auction process?

Answer: The Commission has not required applicants to report statistics on these issues since the Supreme Court's decision in *Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995) ("*Adarand*") (holding that all racial classifications, imposed by federal, state, or local governmental actor, must be analyzed by a reviewing court under strict scrutiny).

During the pre-*Adarand* period, the Commission held four auctions in which it offered 733 licenses. In all, there were 64 minority-owned bidders that won 200 licenses, 73 women-owned bidders that won 292 licenses, and 16 bidders owned by minority women that won 59 licenses. There were also 171 small businesses that won 578 licenses. During the post-*Adarand* period, the Commission has conducted 52 auctions, through which 27,716 licenses were sold. The Commission's FCC Form 175 short-form application requests that applicants voluntarily report whether they are minority- or women-owned. Based on voluntary self-reporting, in the 52 auctions conducted since *Adarand*, there have been 115 women-owned bidders that won 846 licenses, 122 minority-owned bidders that won 832 licenses, and 35 bidders owned by minority women that won 258 licenses. There have also been 1,094 small businesses that won 15,428 licenses.

Question 18: What is the FCC doing to ensure that women, minorities and small businesses are able to successfully participate in the auction process?

Answer: The Commission employs a number of measures to promote the successful participation of women, minorities and small businesses in the auctions process. These measures include the following:

- Bidding credits: The Commission offers bidding credits to small businesses in most of its auctions (or to "new entrants" in auctions for broadcast construction permits).
- Band plans and geographic license areas: The Commission adopts different band plans and geographic license areas for different wireless services. The Commission frequently considers and adopts relatively small spectrum blocks and geographic license areas so that smaller entities need not bid on licenses for more spectrum or larger geographic areas than their business plans require.
- Available tools and support: The Commission's bidding system is a user-friendly Internet based bidding system (specifically designed for novice bidders). The Commission also makes available dedicated staff to address the specific needs of small bidders by telephone, fax, e-mail, or Internet as well as in person at

a free bidder seminar before each auction. Commission staff can provide step-by-step instruction regarding upcoming auctions; the auctions process; completion of auction applications; bidding procedures; and post auction processes. In addition, the Commission conducts outreach and education initiatives directed toward small bidders.

Question 19: Of the original C-block licenses awarded, how many of the licenses remain in the hands of the original small business licensees?

Answer: In September of 1996, the Commission granted most of the original 493 C block licenses to 89 eligible entrepreneurs and small businesses for a ten year term. NextWave received 63 of these licenses. The Commission's rules prohibited the original C block license winners from transferring their licenses to non-entrepreneurs within the first five years of the license term unless the licensee met the build out requirements. At this time, nine years after the initial license grant, seventeen of the original 89 licensees still hold a total of 62 licenses.

Question 20: What is the FCC doing to ensure that there is true diversity of licensees in the upcoming FM auction?

Answer: FM Auction No. 62 procedures are designed to promote the broadest possible participation in the November 2005 auction for 172 vacant FM allotments. The rules provide bidding credits of 35 and 25 percent to applicants that qualify as new entrants with no attributable interest in any other media of mass communications or attributable interest in no more than three mass media facilities, respectively. During the auction, the rules require applicants to report diminishments in their eligibility bidding credits so that those entities which qualify for new entrant bidding credits will have full and timely bidding information about their competitors.

In addition, the Commission will take the usual steps to help educate potential bidders about auctions procedures. Commission staff will hold an auction seminar on July 27, 2005, immediately prior to the opening of the short form filing window. The Commission also will make available a webcast of this event for those not able to attend. Commission staff will hold a "mock" auction on October 28, 2005 for qualified bidders. As part of the outreach for this specific auction, the Commission exhibited at the National Association of Broadcasters (NAB) Radio Show last fall and again at the NAB National Convention this past April. The Commission also plans to advertise in the July issues of Radio World Magazine and Radio & Television Business Report. These events and publications have a diverse, extensive audience that caters to both large and small bidders alike.

Analysis of an Accelerated Digital Television Transition

COLEMAN BAZELON, VICE PRESIDENT, ANALYSIS GROUP

MAY 31, 2005

This paper was sponsored by Intel Corporation.

I. INTRODUCTION AND SUMMARY

Television broadcasting in the United States is currently undergoing a transition from analog to digital transmission. A shift to digital television ("DTV") broadcasts not only provides viewers with more and better viewing options, but it frees a portion of the spectrum used by analog broadcasts for new uses. More specifically, the eventual end of analog broadcasts has already prompted the FCC to reorganize the 108 MHz of prime spectrum used by television channels 52 to 69. Under current rules, however, incumbent analog broadcasters could continue to operate in this spectrum—and thus prevent full use of the spectrum for new services—for many years to come.

This report presents and analyzes a generic proposal ("the Proposal") to accelerate the DTV transition. Under current law, analog signals will not be turned off until 85% of households in a given market qualify as DTV households. Less than 2% currently do.[1] At the heart of the Proposal is a plan to replace the 85% benchmark with

[1] Under 2% of households are able to view over-the-air digital signals. Comments of the National Association of Broadcasters and the Association for Maximum Service Television, Inc., *Over-the-Air Broadcast Television Viewers,* FCC MB Docket No. 04-210, August 11, 2004, at Attachment A, p. 5, and Eric A. Taub, "High Maintenance TV," The New York Times, June 24, 2004. Though many cable and satellite customers receive some digital broadcast signals through their subscription services, these households do not count towards the 85% unless the video provider includes all digital broadcast channels available in their respective markets. Cable and

Continued

a firm date for ending analog broadcast signals, thus freeing the 108 MHz of spectrum, including 60 MHz that still awaits auction. To make this hard shut-off date feasible, the Proposal includes a plan for supplying households that rely on over-the-air TV broadcasts with the converter boxes necessary for viewing digital broadcasts on analog television sets.

The Proposal will create significant value. The costs of implementing the proposal would be modest compared to the value created. Supplying households that rely exclusively on over-the-air broadcast signals with set-top converter boxes would likely cost no more than $1 billion.

The current market value of licenses to use the unsold 60 MHz would be $20 billion to $24 billion if the Proposal were enacted. (The net budget impact would be less: from $16 billion to $19 billion on the low end and from $20 billion to $23 billion on the high end.) These estimates of the spectrum's value are dwarfed by the social value of the Proposal, which would be an estimated $233 billion to $473 billion.

II. BACKGROUND ON THE DIGITAL TELEVISION TRANSITION

Since the first television license was issued by the Federal Radio Commission in 1928, TV stations have used analog signals—in which a moving image's electrical impulses are converted to radio waves—to broadcast their programming.[2] In recent years, new DTV technology has enabled broadcasters to digitize the signals before transmitting them over radio waves.

A widespread transition to digital transmission brings with it numerous benefits. It can bring the nation's over-the-air TV viewers a clearer picture, a greater quantity of programming, and a variety of new services. Most significant, because DTV broadcasts require less idle spectrum as a buffer between signals, a large section of highly valuable bandwidth in the 700 MHz band of spectrum ("the 700 MHz Band") can be made available for other commercial and public safety uses. The newly freed spectrum could be used to deliver a variety of advanced wireless services for which there is growing demand, such as wireless broadband. Consequently, any efforts to hasten a transition to DTV will create significant value for society.

Both viewers and broadcasters require additional equipment before DTV can take hold. Viewers who rely on over-the-air broadcasts need equipment that is capable of receiving the digital signals, whether a TV with a built-in digital tuner or a set-top converter box that enables the display of a digital signal on an analog TV set. Broadcasters must make significant investments to upgrade their transmission facilities. Neither viewers nor broadcasters, however, have an incentive to invest without the participation of the other.[3] With this fact in mind, the Federal Communications Commission (FCC) has been managing a transition to nationwide DTV broadcasting for almost 20 years.[4]

Currently, analog television licensees in the United States broadcast their signals over channels numbered 2 through 69.[5] Each channel corresponds to a 6 MHz block of spectrum in the 54 MHz to 806 MHz range. The Telecommunications Act of 1996 granted an additional digital channel to each analog television licensee, requiring that each station begin digital broadcasts while phasing out analog broadcasts.[6] The Balanced Budget Act of 1997 then specified the conditions under which a complete transition to DTV would take place. Most important, it established that the FCC would reclaim all analog licenses in any market in which 85% of TV households were able to receive DTV signals at the end of 2006.[6] Markets that did not reach the 85% threshold would continue broadcasting both analog and digital signals until the threshold was met.

According to the existing plan, once the analog broadcasts have been turned off, the digital channels in the 700 MHz Band, channels 52 to 69, will be transferred to the "core spectrum" in the 54 MHz to 698 MHz range. This can be done because "digital TV signals tolerate interference better than analog signals," and thus "more DTV stations can be fitted into less spectrum than the analog stations would oc-

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satellite systems have no obligation to carry digital broadcast signals as long as the analog signals remain. See Congressional Budget Office, *Completing the Transition to Digital Television,* September 1999 ("*1999 CBO Report*").

[2] *See, e.g.,* Federal Communications Commission, Historical Periods in Television Technology: 1880-1929 (http://www.fcc.gov/omd/history/tv/1880-1929.html).

[3] *See, e.g.,1999 CBO Report.*

[4] *See,* Congressional Budget Office, "The Scope of High-Definition Television Market and Its Implications for Competition," CBO Staff Working Paper, July 1989.

[5] The spectrum of would-be channel 37 is reserved for radio astronomy.

[7] *Telecommunications Act of 1996*, S. 652, 104Congress.

[8] *Balanced Budget Act of 1997*, H.R. 2015, 105Congress.

cupy."[8] Ending the DTV transition and clearing channels 52 to 69 would free the entire 700 MHz Band of spectrum for valuable commercial and public safety uses.

The 700 MHz Band consists of 108 MHz of spectrum in two distinct segments: a "lower" band, which consists of TV channels 52-59 ("the Lower 700 MHz Band"), and an "upper" band, which consists of channels 60-69 ("the Upper 700 MHz Band"). See Figures 1 and 2 (next page). Both possess favorable characteristics that distinguish them from other spectrum bands. Foremost among these is that radio signals in the 700 MHz Band travel farther for a given amount of radiated energy, which can reduce infrastructure costs by as much as half as compared to the 1.9 GHz band or three-quarters in comparison to the 2.5 GHz band.[9]

As shown in Figures 1 and 2, of the 108 MHz of total spectrum, 24 MHz is assigned to public safety users, another 24 MHz has been assigned by auction,[10] and 60 MHz still awaits auction. New, non-TV license holders in the 700 MHz Band are currently free to use their spectrum, but only if they do not interfere with existing analog television broadcasters. The broadcasters' signals have priority over new spectrum uses and thus encumber most of the spectrum in the 700 MHz Band. Table 1 shows the number of existing broadcasters in the 700 MHz Band. The broadcasters' continued encumbrance of the spectrum greatly reduces its value. When the FCC auctioned the C & D blocks in the Lower 700 MHz Band, for example, the licenses sold at enormous discounts to comparable spectrum license prices.

Major blocks in both bands—the A, B, and E blocks in the Lower 700 MHz Band and the C and D blocks in the Upper 700 MHz Band—remain unassigned. The value of this combined 60 MHz of spectrum under an accelerated transition to DTV is the focus of this paper.

TABLE 1. TELEVISION ENCUMBRANCE BY BAND AND LICENSE TYPE

Band	Digital Licensees	Analog Licensees	Total Licensees	Licensees per Channel
Lower 700 MHz	59	116	175	21.9
Upper 700 MHz	9	96	105	10.5
Total	68	212	280	15.6

Source: FCC TVQ TV Database, available at http://www.fcc.gov/mb/video/tvq.html.

III. A PROPOSAL TO ACCELERATE THE DTV TRANSITION

This report will evaluate a generic proposal ("the Proposal") to accelerate the DTV transition. The Proposal has the following key components:

- Analog stations would cease broadcasting no later than December 31, 2008.
- Households that rely exclusively on over-the-air broadcasting could be eligible to receive a set-top converter box or other compensation tied to a set-top converter box. Eligibility of over-the-air households could be related to income.
- Auctions for the Lower 700 MHz Band A Block, B Block, and E Block and the Upper 700 MHz Band C Block and D Block (collectively referred to as the "Auction Bands") would begin no later than April 1, 2008.
- The Auction Bands would be "liberally licensed", meaning that licensees would be constrained only by non-interference requirements when deciding how to use their licenses.

IV. THE VALUE OF THE PROPOSAL

An accelerated DTV transition will increase the market value of the spectrum in both the Lower 700 MHz Band and the Upper 700 MHz Band. It will also likely raise additional revenues for the federal government and create significant social value.

For purposes of this analysis, it is useful to divide the spectrum in the 700 MHz Band into three categories: the privately held bands, the public safety bands, and the Auction Bands. The latter refers to the 60 MHz of spectrum awaiting auction and is the focus of the valuation analysis below.

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[8] *1999 CBO Report*, p. *vii.*

[9] Letter from Charles C. Townsend, Aloha Partners, L.P., to the Honorable Joe Barton, Chairman, Committee on Energy and Commerce, U.S. House of Representatives, *et al.,* April 27, 2005. *See also* Testimony of Patrick P. Gelsinger, Chief Technology Officer and Senior Vice President, Intel Corporation, before the Committee on Commerce, Science and Transportation, U.S. Senate, June 9, 2004.

[10] Although 24 MHz of the spectrum have been auctioned to private users, some have returned their licenses to the FCC. Only about 20 MHz remain in private hands.

The independent estimates reviewed in this section do not account for the cost of the Proposal. (See Section V for estimates of the cost of the Proposal.)

A. The market value of the radio spectrum

The Proposal will enhance the value of all 108 MHz of spectrum in the 700 MHz Band by removing the current encumbrances in that band. The degree to which the value of a particular allocation or license is enhanced depends on the degree to which full-power broadcast licensees currently prevent the use of the spectrum.

Two independent estimates of the market value of the Auction Bands have recently been produced. *See* Table 2. The first estimate, by William P. Zarakas and Dorothy Robyn of The Brattle Group, is based directly on market comparables, including two major sales of broadband PCS (1.9 GHz) licenses in 2005 and the FCC's 2004 valuation of rights to 10 MHz of spectrum in the 1.9 GHz band. Zarakas and Robyn estimate that licenses for the Auction Bands would sell for $1.65 per MHz-Pop, or $28 billion in total. They argue that the prices paid for broadband PCS licenses in 2005 reflect the market's expectation that a significant increase in supply is imminent. Thus, they conclude that there is no reason to believe that the auction of 90 MHz of Advanced Wireless Services ("AWS") spectrum, which the FCC has said will occur as early as June 2006, will cause the price of the 700 MHz spectrum to drop significantly. They also argue that, to some extent, the market has anticipated the increase in supply from the 700 MHz Band, and that downward pressure on price from the unanticipated increase likely would be offset by technical advantages of the 700 MHz Band.

The second estimate, prepared by Charles C. Townsend of Aloha Partners, L.P., also reviews auctions and recent transactions. This analysis concludes that the current value of the spectrum is $1.63 per MHz-Pop. The analysis further estimates that the increased supply of spectrum expected in the next few years might reduce prices by as much as 33%, implying that auction bids could average $1.10 per MHz-Pop. Townsend discounts the lower number because he believes that increased demand for spectrum based services will mitigate the effects of increased supply of spectrum licenses. At these projected prices, the estimated revenues from the 60 MHz of the Auction Bands would be between $20 billion to $30 billion.[11]

TABLE 2. MARKET VALUE ESTIMATES OF 60 MHZ IN THE 700 MHZ BAND

Source	Price per MHz-Pop	Auction Revenues
Brattle Group	$1.65	$28 Billion
Aloha Partners	$1.10 to $1.63	$20 Billion to $29 Billion

Source: Letters from William P. Zarakas and Dorothy Robyn, The Brattle Group, and Charles C. Townsend, Aloha Partners, L.P., to the Honorable Joe Barton, Chairman, Committee on Energy and Commerce, U.S. House of Representatives, ***et al.,*** May 18, 2005 and April 27, 2005, respectively.

Supply effect. An accelerated DTV transition will increase the total amount of liberally licensed spectrum available. With a greater total supply of licensed spectrum, the price of spectrum would be expected to fall. The Brattle Group argues that the market has partially anticipated the increase in supply from the 700 MHz Band (and has fully anticipated the supply effect of the planned AWS auction), and that other factors will offset the unanticipated increase. Aloha Partners provides an estimate that takes into account the potential effect of increased supply, although that analysis discounts the probability of that outcome and places more weight on estimates of current market valuations. Nevertheless, I take a more conservative approach and assume that the price of spectrum will fall with the increased supply of spectrum from the 700 MHz Band.

The impact on price of an increase in the quantity of spectrum available can be estimated by applying the concept of elasticity.[12] An elasticity measures the ratio of the percentage change in quantity to a given percentage change in price. As an approximate example, an elasticity of demand of -3 implies that a 10% decrease in price would induce a 30% increase in quantity demanded at that new price. Likewise, an elasticity of demand of -0.5 would imply that a 5% increase in supply would require a decrease in price of 10% to induce enough increased demand to meet that

[11] $1.63 per MHz-Pop * 60 MHz * 296 million pops = $29 billion, but the Townsend analysis rounds that to $30 billion. Throughout this paper, I use 296 million as the estimate of U.S. population. This is interpolated for 2005 based on the Census Bureau's 2004 population estimate of 293.7 million and 2010 forecast of 308.9 million. See intercensal estimates and interim projections from U.S. Census Bureau.

[12] Ultimately, the Congressional Budget Office ("CBO") will score specific legislative proposals. The analysis in this section is only an estimate of what the CBO analysis could be.

new supply. The advantage of using elasticity to characterize the relationship between price and quantity changes is that it is unit-free; elasticity does not depend on the units used to measure price ($, £, Yen) or quantity (kHz, MHz, GHz).

I am not aware of any direct estimates of the elasticity of demand for spectrum. Nevertheless, some existing evidence can be used to point to a reasonable value of the elasticity of demand for spectrum. The demand should be at least as elastic as the demand for spectrum-based services such as mobile telephony. This means that, in general, one would expect demand for spectrum to be at least as responsive to a change in the price of spectrum as the demand for mobile telephony would be to a change in the price of mobile telephony. I estimate the elasticity of demand for spectrum to be -1.2. (*See* Appendix.)

In this analysis, I use the elasticity measure to recover the percentage change in price from a given change in quantity. The Proposal will increase the total supply of liberally licensed spectrum by 78 MHz. This includes the 60 MHz of the Auction Bands and the 18 MHz of the previously auctioned C Block and D Block in the Lower 700 MHz Band.

The existing base of spectrum includes current allocations and expected future allocations. The expected likelihood of any future allocation depends on many factors. In Table 3 below, I list current and future allocations and put subjective probabilities next to the future allocations. The AWS and Broadband Radio Service/Educational Broadband Service ("BRS/EBS") allocations were well known when the comparables used above were established, and they are expected to be useful allocations and thus have fairly high probabilities associated with them. The BRS/EBS licenses that allow high powered operations are less likely to be useful for new services and therefore have a lower probability attached to them.

The 78 MHz of privately licensed spectrum affected by the Proposal represents a 20% increase in the supply of spectrum. This estimate is derived by dividing 78 MHz by an expected base of liberally licensed private spectrum of 390 MHz.

TABLE 3. BASE OF LIBERALLY LICENSED PRIVATE SPECTRUM

Band Name	Location	MHz	Available	Probability
PCS	1.9 GHz	120 MHz	Now	1.0
Cellular	800 MHz	50 MHz	Now	1.0
SMR	800 MHz/900 MHz	14 MHz+5 MHz	Now/Within a few years	1.0
Nextel 1.9 GHz	1.9 GHz	10 MHz	Now/Very soon	1.0
BRS/EBS-low [1]	2.5 GHz	132 MHz	Within a few years	0.8
BRS/EBS-high [2]	2.5 GHz	42 MHz	Within a few years	0.1
AWS	1.7 GHz/2.1 GHz	90 MHz	Within a few years	0.9
	Total MHz	**463 MHz**	**Total probability-weighted MHz**	**390 MHz**

[1] Includes low-powered licenses only.
[2] Includes high-powered licenses only.

Sources: Congressional Budget Office, ***Where Do We Go From Here? The FCC Auctions and the Future of Radio Spectrum Management,*** April 1997; FCC Wireless Telecommunications Bureau, **Cellular Services** (http://wireless.fcc.gov/services/cellular/); FCC Wireless Telecommunications Bureau, 900 MHz SMR (http://wireless.fcc.gov/smrs/900.html); **Improving Public Safety Communications in the 800 MHz Band,** Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969 (2004); FCC Wireless Telecommunications Bureau, **BRS & EBS Radio Services** (http://wireless.fcc.gov/services/brsebs/); **Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 MHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems,** Second Report and Order, 17 FCC Rcd 23193 (2002).

Using the elasticity measure of 1.2 and the quantity increase of 20% implies a price decrease of 17%. My revised market value estimates of the 700 MHz band are presented in Table 4. The lower estimate reported by Aloha Partners is already adjusted for the effect of increased supply and does not require a further adjustment.

TABLE 4. REVISED MARKET VALUE ESTIMATES OF 60 MHZ IN THE 700 MHZ BAND

Source	Revised Price per MHz-Pop	Revised Auction Revenues
Brattle Group	$1.37	$23 Billion
Aloha Partners	$1.10 to $1.35	$20 Billion to $24 Billion

B. The budgetary value of the Proposal

In the case of the 700 MHz Band, estimated auction revenues do not translate directly into increased revenues in the federal budget. Auction design can have a significant impact on the proportion of the value of a spectrum license that is paid to the federal government. Throughout this analysis, I assume a well designed auction that extracts most of the value of the spectrum for the government. In any case,

estimated auction receipts must be reduced to account for 1) the costs involved in removing incumbents from the spectrum and 2) decreased revenues from auctions already included in budget estimates.

Cost of the proposal. The Proposal is estimated to cost the federal government no more than $1 billion. (See Section V.)

Baseline spectrum prices. Increasing the expected supply of liberally licensed private spectrum by 60 MHz will decrease the price of spectrum. This lower price will affect the revenues expected in other auctions.

The CBO budget baseline is an estimate of all federal receipts and expenditures. It includes all revenues from spectrum auctions expected under current law. The CBO budget baseline provides for incidental auctions totaling less than $1 billion, and it includes the following statement:

> The auction of rights to use portions of the electromagnetic spectrum constitutes another source of offsetting receipts. Such auctions are expected to continue until the Federal Communications Commission's (FCC's) authority expires at the end of 2007. CBO assumes that the FCC will auction at least 90 megahertz of spectrum for advanced wireless services sometime in 2006 and 2007. Those auctions will bring in about $15 billion through 2015, with the receipts being tallied in 2007 and 2008.[13]

Implicit in the CBO budget baseline estimate is the assumption that the auction will net the government approximately $0.56 per MHz-Pop.[14] This price associated with this spectrum does not necessarily reflect the price that will be paid at auction.

The CBO does not specify which bands of spectrum are included in the baseline estimate, but a likely candidate is the 90 MHz of AWS spectrum that consists of 45 MHz at 1.7 GHz paired with 45 MHz at 2.1 GHz.[15]

If the 90 MHz of spectrum in the CBO baseline were priced at the market values reported in Table 2, the $1.10 per MHz-Pop to $1.65 per MHz-Pop would translate into $29 billion to $44 billion in expected revenues under current law.[16] The implied price in the CBO baseline of $15 billion is substantially below that range of value estimates. CBO does not make the details of its baseline public, so it is impossible to know which other factors it includes in its estimate. One possible source of a discount could be the rules governing the clearing of federal users from the AWS band, rules that could delay indefinitely the full availability of the band to the new licensees. Consequently, we do not know what base price of spectrum, prior to the supply increase created by the Proposal, CBO is using for its estimate of receipts under current law.

Price impact of an increase in supply. The previous analysis of how increased supply would affect price also applies to the 90 MHz in the CBO baseline.

CBO has not estimated the impact that receipts from the sale of the Auction Bands would have on baseline revenues. Nevertheless, the analysis of elasticities applies equally to the implicit CBO baseline numbers. A 20% increase in spectrum and an elasticity of 1.2 implies a 17% decrease in the price of spectrum. If the CBO baseline is $15 billion for 90 MHz, then the decrease in those revenues associated with the additional 60 MHz of the Auction Bands would be $3 billion.[17]

If the Proposal were implemented, based on the valuations reported in Table 4, the value of the 90 MHz of spectrum would decrease to $1.10 per MHz-Pop to $1.37 per MHz-Pop, implying expected revenues of $29 billion to $36 billion.[18] This is $14 billion to $21 billion more than the CBO baseline estimate for this spectrum. The CBO is not free to increase its baseline during the legislative budget process. Therefore, the significant difference between the supply-adjusted market value of the 90 MHz and its lower estimated revenues in the baseline could justify ignoring the $3 billion adjustment to the current CBO baseline discussed above.

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[13] Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2006 to 2015,* January 2005, p. 62.

[14] $15 billion/(90 MHz * 296 million pops).

[15] *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems,* Sixth Report and Order, Third Memorandum Opinion and Order, and Fifth Memorandum Opinion and Order, 19 FCC Rcd 20720 (2004).

[16] $1.10 per MHz-Pop * 90 MHz * 296 million pops = $29 billion, and $1.65 per MHz-Pop * 90 MHz * 296 million pops = $44 billion.

[17] $15 billion * 0.17 = $3 billion. Alternatively, applying the Aloha Partners estimate of a potential 33% supply-induced decrease in price to the CBO baseline would imply a decrease in revenues of $5 billion. But using that larger decrease would be consistent only with the higher Aloha estimate for the 60 MHz of $23 billion.

[18] $1.10 per MHz-Pop * 90 MHz * 296 million pops = $29 billion and $1.37 per MHz-Pop * 90 MHz * 296 million pops = $36 billion.

Net budget impact. The Proposal's net impact on the budget would be $16 billion to $20 billion. See Table 5. This includes $20 billion to $24 billion in auction revenues from the sale of the Auction Bands; $1 billion in federal costs for the Proposal; and a possible loss of $3 billion in revenues from the 90 MHz in the budget baseline.

TABLE 5. NET BUDGET IMPACT OF THE PROPOSAL

Source	Budget Gain (Loss) Low	Budget Gain (Loss) High
Sale of 60 MHz Auction Band	**$20 Billion**	**$24 Billion**
Federal Costs of Converter Boxes	($1 Billion)	($1 Billion)
Budget Impact, No Baseline Adjustment	**$19 Billion**	**$23 Billion**
Loss from 90 MHz in Budget Baseline	($3 Billion)	($3 Billion)]
Total	**$16 Billion**	**$20 Billion**

C. The social value of the Proposal

The social value that would be created by the Proposal includes the increase in market value of the spectrum, the increase in consumer welfare from the Proposal, the benefits to public safety users, and, potentially, the welfare effects associated with auction revenues that offset distortions caused by federal borrowing or taxing activities.

Increase in market value of the spectrum. The willingness of wireless companies to pay for spectrum sets the market value. That willingness to pay is derived from the companies' expected profits from spectrum-based services and is called producer surplus. It constitutes one contribution to the social value of the spectrum.

Increase in consumer welfare. The consumer welfare generated by increased spectrum allocations is large and typically many times the producer surplus. One noted study by Thomas Hazlett and Roberto Muñoz finds that the increase in consumer welfare associated with a 60 MHz increase in spectrum allocated for mobile phone use in the U.S. is $24 billion per year.[19] The analysis indicates that the consumer surplus would be almost 18 times the producer surplus associated with that spectrum.[20]

The Hazlett and Muñoz estimate is not directly applicable to the analysis of an accelerated DTV transition for at least two reasons. First, it does not account for the Proposal's interaction with other allocations of spectrum expected in the near future. Hazlett's and Muñoz's estimate may be applicable to the 60 MHz of the Auction Bands, but to be properly applied here, it also needs to account for changes in consumer surplus associated with the 90 MHz anticipated in the CBO baseline or the effects on the BRS/EBS allocations at 2.5 GHz. Consequently, the increase in consumer surplus could be less than the $24 billion per year estimated by Hazlett and Muñoz. How much less is uncertain, but Congressional testimony by Dr. Hazlett before the U.S. Senate Commerce Committee provides an indication. In that testimony, Dr. Hazlett reported the information in the following table:

TABLE 6. ANNUAL CONSUMER GAINS FROM INCREASED SPECTRUM AVAILABILITY

	Increase in Spectrum Available for CMRS		
	80 MHz	140 MHz	200 MHz
Change in Consumer Surplus	$31.9 Billion	$55.1 Billion	$77.4 Billion
Marginal Surplus of 60 MHz	N/A	$23.2 Billion	$22.3 Billion

Source: Testimony of Thomas W. Hazlett before the United States Senate Commerce Committee, June 9, 2004.

The table indicates that the value of the consumer surplus from additional increments of spectrum declines, but at a fairly slow rate over the relevant range. Compare the change in consumer surplus of $23.2 billion when the total additional spectrum is increased from 80 MHz to 140 MHz with the change in consumer surplus of $22.3 billion when the total additional spectrum is increased from 140 MHz to 200 MHz.

The Hazlett and Muñoz analysis explicitly assumes that the additional spectrum will be allocated for Commercial Mobile Radio Services ("CMRS"). Although CMRS

[19] Thomas W. Hazlett and Roberto E. Muñoz, "A Welfare Analysis of Spectrum Allocation Policies," Manhattan Institute for Policy Research, June 10, 2004, p. 17.

[20] 18 = ($24 billion/0.05)/($27 billion). See Thomas W. Hazlett and Roberto E. Muñoz, "A Welfare Analysis of Spectrum Allocation Policies," Manhattan Institute for Policy Research, June 10, 2004, p. 17.

uses may be the highest-value uses for additional allocations, the Proposal does not restrict the Auction Bands to CMRS uses. Because the new allocations can at least be used for CMRS, the Hazlett and Muñoz value estimates, including estimates of consumer surplus, set a lower boundary on the estimates for even less restricted spectrum.

Taking into account these considerations, a plausible and conservative estimate of the range of ratios of consumer surplus to producer surplus would be between 10 to 1 and 18 to 1.[21] The estimates of the value of the Auction Bands reported in Table 5 range from $20 billion to $24 billion dollars, implying consumer surplus increases of at least $200 billion to $432 billion.

Public safety benefits. Although it is difficult to estimate the Proposal's impact on the value of the public safety allocations in the 700 MHz Band, the Proposal provides significant benefit to public safety spectrum users by clearing the incumbent broadcasters from the public safety bands. From a public policy perspective, the opportunity cost to the government of allocating 24 MHz of 700 MHz Band spectrum to public safety is the receipts the spectrum could garner in an auction.[22] In this case, the current public safety allocation would be valued at approximately $8 billion to $10 billion.[23] The total benefit of those bands could be more than the opportunity cost of the allocation, but placing a monetary value on those total benefits is beyond the scope of this analysis.

Federal financing effects. Federal financing activities, whether through increased taxes or increased borrowing, create distortions in the economy. Reducing federal financing activities therefore reduces economic distortions, and, holding all else equal, increases economic activity. To the extent that auction revenues reduce the federal government's funding requirements, they create an added bonus of reducing distortions created by the federal government's financing activities. The economic cost of an additional dollar of federal spending is estimated to be about $1.33.[24] Consequently, the financing dividend is typically estimated to be about one third of the auction revenues.[25] Applying this proportion to the estimated net budget receipts would yield a financing dividend of approximately $5 billion to $7 billion.[26]

The social value of the Proposal. Combining the producer surplus, consumer surplus, public safety benefits, and federal financing effects leads to an estimate of the total social value of the Proposal of $233 billion to $473 billion. *See* Table 7.

TABLE 7. SOCIAL BENEFITS OF THE PROPOSAL

Source	Amount (billions)	
	Low	High
Producer surplus	$20	$24
Consumer surplus	$200	$432
Public safety	$8	$10
Federal financing effect	$5	$7
Total	$233	$473

[21] A ratio of 10 to 1 is also consistent with the ratio of consumer surplus to private value noted in Gregory L. Rosston, "The Long and Winding Road: the FCC Paves the Path with Good Intentions," 27 *Telecommunications Policy* 501, 513 (2003).

[22] In the context of a spectrum trade involving Nextel, the FCC notes the difficulty of putting a dollar value on public safety spectrum. "We believe that no strictly economic analysis can satisfactorily resolve the ultimate question of whether interference-free public safety communications—a largely unquantifiable benefit—has a dollar value commensurate with the fair market value of the 1.9 GHz spectrum Nextel will receive. However, we still believe such financial analyses are relevant . . ." *Improving Public Safety Communications in the 800 MHz Band,* Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969 ¶ 284 (2004).

[23] $1.10 per MHz-Pop * 24 MHz * 296 million pops = $8 billion and $1.37 per MHz-Pop * 24 MHz * 296 million pops = $10 billion. If the 24 MHz were sold to private users, the impact on price of the increased supply would be approximately an additional -4% ((24 MHz/(390 MHz + 60 MHz))/elasticity of -1.2).

[24] Michael H. Rothkopf and Coleman Bazelon, "Interlicense Competition: Spectrum Deregulation Without Confiscation or Giveaways," New America Foundation, Spectrum Series Working Paper No. 8, August 2003.

[25] Thomas W. Hazlett and Robert E. Muñoz, "What Really Matters in Spectrum Allocation Design," AEI-Brookings Joint Center for Regulatory Studies, Working Paper 04-16, August 2004.

[26] $16 billion * 0.33 = $5 billion and $20 billion * 0.33 = $7 billion.

V. THE COSTS OF THE PROPOSAL

The costs of accelerating the end of the DTV transition are driven by the number of set-top boxes distributed, the costs of those boxes, and the costs of administering the program. The Government Accountability Office (GAO) has provided one such cost estimate.[27] Scrutiny of its analysis indicates that the GAO likely overestimated the costs of an accelerated transition.

A. The number of set-top boxes

Crucial to determining the number of set-top boxes distributed is the number of households that will rely on over-the-air analog television broadcasts at the end date of the transition. These are the television households that do not subscribe to a multi-channel video distribution system. Different estimates of the number of over-the-air-only households are presented in Table 8.

TABLE 8. RECENT ESTIMATES OF TELEVISION HOUSEHOLD DATA

Source	Date Published	U.S. TV Households	MVPD Subscribing Households [1]	OTA Households
FCC	Feb. 2005	108.4 [3]	92.3	16.0
GAO	Feb. 2005			20.8
Deutsche Bank	Apr. 2005	109.9 [3]	88.2	21.8
Wachovia	Apr. 2005	110.3	97.2	13.2
Vintage Research	Feb. 2005	109.6 [3]	100.4	9.1
NAB	Aug. 2004	108.4 [3]	87.9	20.5
CEA	Aug. 2004	107.3 [2]	93.4	13.9
2006 Projected		**109.0**	**94.4**	**14.6**

Data is in millions.
[1] Figures indicate MVPD subscriptions net of double-subscribers when possible.
[2] The Consumer Electronics Association uses 2002 Census data to determine its number of TV households.
[3] These sources all use year-end 2003 or 2004 Nielsen Media Research data as a basis for their numbers of U.S. TV households.
Sources: Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Eleventh Annual Report, 20 FCC Rcd 2755 (2005); U.S. Government Accountability Office, ''Digital Broadcast Television Transition: Estimated Cost of Supporting Set-Top Boxes to Help Advance the DTV Transition,'' February 17, 2005; Douglas Mitchelson and Christopher Gilbert, Deutsche Bank, ''Cable/Sat Spotlight—1Q05 Preview,'' April 27, 2005; Jeff Wlodarczak and Royden Summers, Wachovia Capital Markets, ''Reports of Demise of DBS Greatly Exaggerated,'' April 14, 2005; William Kidd and Alden Mahabir, Vintage Research, ''It Takes More Than the Bundle To Beat DBS,'' February 2, 2005; Comments of the National Association of Broadcasters and the Association for Maximum Service Television, Inc., **Over-the-Air Broadcast Television Viewers,** FCC MB Docket No. 04-210, August 11, 2004; Comments of the Consumer Electronics Association, **Inquiry into Over-the-Air Broadcast Television Viewers,** FCC MB Docket No. 04-210, August 11, 2004.

I estimate that in 2006 there will be 14.6 million over-the-air-only television households. This estimate is based on Census Bureau numbers of 111.4 million households in 2006.[28] This number is reduced by 2.1% to account for non-TV households, resulting in an estimate of 109.0 million television households.[29] I then take the FCC's June 2004 estimate of Multichannel Video Program Distributor ("MVPD") subscribers, 92.3 million households, and make two adjustments. First, I increase the number by 2.7% annually for the trend growth in MVPD subscribers.[30] Second, I reduce the number by 3% for the number of households that subscribe to both cable and a Direct Broadcast Satellite service.[31] Although I do not make an adjustment here, it would be appropriate to decrease the number for the households that receive an MVPD service but are not included in reported subscriber totals.[32] These adjustments provide an estimate of television households that receive an MVPD

[27] U.S. Government Accountability Office, "Digital Broadcast Television Transition: Estimated Cost of Supporting Set-Top Boxes to Help Advance the DTV Transition," February 17, 2005 ("*GAO Report*").

[28] The household estimate for 2006 is based on (1) the American Community Survey (ACS) household estimate of 108.4 million for 2003 and (2) the annual growth rates implied by the Census Bureau's 2004 population estimate of 293.7 million and 2010 forecast of 308.9 million. I believe that the Census Bureau's ACS household number is a more appropriate estimate of the total number of households than the figures reported in the oft-cited Current Population Survey. This is because data from the larger ACS sample are adjusted to more accurately reflect household definitions from the decennial census.

[29] This represents 1 minus 97.9% (the average of 98.3% television households estimated by Deutsche Bank and 97.5% television households estimated by Wachovia). Douglas Mitchelson and Christopher Gilbert, Deutsche Bank, "Cable/Sat Spotlight—1Q05 Preview," April 27, 2005, and Jeff Wlodarczak and Royden Summers, Wachovia Capital Markets, Reports of Demise of DBS Greatly Exaggerated, April 14, 2005.

[30] This is an average of annual subscriber growth as reported by the FCC from 2001-2005. This figure falls roughly in the middle of the range reported by other analysts.

[31] *GAO Report* and Comments of the Consumer Electronics Association, *Inquiry into Over-the-Air Broadcast Television Viewers,* FCC MB Docket No. 04-210, August 11, 2004.

[32] This would include households that steal the service.

service of 94.4 million in 2006. The difference between that number and all television households is 14.6 million, the estimate of the number of over-the-air-only television households.

There is a well-known relationship between income and the choice not to subscribe to an MVPD.[33] Income is an important reason for choosing not to subscribe: two-thirds of non-subscribing households are within 300% of the poverty level, but less than half of all households are within that same range.[34] Income, however, is not the only determinant. A study of household cable subscribers from 1997 found that 22% of households that did not subscribe to cable television had a household income of $50,000 or more.[35] Another study found that only 30% of non-subscribers cite income as a reason for not subscribing.[36] The FCC also cites a lack of interest in television and other reasons such as a lack of foreign language programming for households' decisions not to subscribe to a MVPD.[37]

B. The cost of set-top boxes

Today, a set-top converter box can be purchased for $80 to $1,000.[38] Producing several million set-top converter boxes over the course of a year or two will likely provide sufficient economies of scale in production to allow a significant fall from current price levels. How far they fall will depend on the total demand for the boxes and the time allowed for their production. At least one industry participant estimates that the retail cost of set-top converter boxes could be $65 within half a year of the first order and fall to $50 within one and a half years.[39] I take this as a reasonable estimate of retail costs.

C. Administrative costs

Administrative costs are a relevant cost of the Proposal. These include the salaries, overhead costs, and expenses of administering the program. By far the greatest expense of the program would be the costs of distributing the set-top boxes to the eligible households. In this analysis, I assume that the boxes are sold by retailers, and that the federal government reimburses retailers for the costs of the set-top converter boxes distributed to eligible households. This approach assumes that the distribution costs are covered in the retail price of the box.

Additional administrative costs will be incurred for processing and auditing the reimbursement requests from retailers. Further costs may also be incurred in establishing a database of eligible households. I assume that these costs will be a small fraction of the retail cost of a set-top box.

D. Total costs of the Proposal

I assume that the cost per set-top box will range from $50 to $65, inclusive of administrative costs. The total cost of the proposal is the number of set-top boxes distributed times the cost per set-top box. These estimates are presented in Table 9. Overall, the costs of the proposal would be no more than $1 billion.

TABLE 9. TOTAL COST OF PROPOSAL

Scenario	# of boxes (millions)	Cost per box including administrative costs	Total cost of the Proposal (millions)	GAO Estimate (millions)
200% of poverty	7.3	$50-$65	$365-$475	$463-$925
300% of poverty	9.7	$50-$65	$485-$631	$626-$1,252
All OTA only TV HHs	14.6	$50-$65	$730-$949	$1,042-$2,083

Source: Author's calculations and U.S. Government Accountability Office, "Digital Broadcast Television Transition: Estimated Cost of Supporting Set-Top Boxes to Help Advance the DTV Transition," February 17, 2005, p. 14.

[33] Federal Communications Commission, "Media Bureau Staff Report Concerning Over-the-Air Broadcast Television Viewers," MB Docket No. 04-210, February 28, 2005, ¶ 10 ("FCC OTA Report").

[34] *GAO Report,* pp. 14-15.

[35] Robert Kieschnick and B.D. McCullough, "Why Do People Not Subscribe to Cable Television? A Review of the Evidence," presented at the Telecommunications Policy Research Conference, October 1998, Tables 2 and 3 (as cited in *1999 CBO Report*).

[36] Comments of the Consumer Electronics Association, *Inquiry into Over-the-Air Broadcast Television Viewers,* FCC MB Docket No. 04-210, August 11, 2004, p. 4.

[37] *FCC OTA Report* ¶ 15-16.

[38] *FCC OTA Report* ¶ 17.

[39] Letter from David Pederson, Vice President, Corporate Strategic Marketing, Zoran Corporation, to Mr. Alan Stillwell, Senior Associate Chief, Office of Engineering and Technology, Federal Communications Commission, FCC ET Docket 05-24, May 16, 2005.

APPENDIX

To understand why the elasticity of demand for spectrum should be at least as large as the elasticity of demand for mobile telephony, first observe that the demand for spectrum is a "derived demand." It is derived from the demand for the services that use it as an input. For example, the value of a television broadcast license is derived from the value of a television broadcast station. If television broadcasting becomes more profitable, for example, because of a rise in advertising rates, then the derived demand for a television broadcast license increases.[40] Likewise, the demand for licenses in the 700 MHz Band will be based on the value of the services supplied by operators using these licenses. Consequently, the demand for spectrum is related to the demand for spectrum-based services.

Economists have long had an interest in the elasticity of derived demand.[41] Ultimately, the elasticity of a derived demand depends on the specifics of the markets for the final good or service, the markets for other inputs, and the way the input is used in creating the final good or service. Nevertheless, it is possible to characterize whether the derived demand is likely to be elastic or inelastic and compare it to the elasticity of demand in the output market.

The Marshall-Hicks criteria outline the determinants of the elasticity of derived demand.[42] Applied to radio spectrum, they are:

- *The availability of substitutes for spectrum (Substitutability of inputs).* One determinant of the elasticity of demand for spectrum is the degree to which wireless service providers can substitute away from spectrum when its price increases. With current technology, companies must have some spectrum below 3 GHz to provide mobile services. One significant advantage of wireless systems that use cellular architecture is the ability to subdivide a cell into several smaller cells. This increases the reuse of frequencies and therefore increases the capacity of the wireless system. Consequently, capital—in the form of more cell sites and supporting infrastructure—can be substituted for more spectrum to increase capacity (or used to maintain capacity with less spectrum). The more the production technology allows capital to substitute for spectrum, the more elastic the derived demand for spectrum will be.
- *The elasticity of supply of capital and other inputs into the final wireless service (Complementary input elasticity).* If the inputs other than spectrum used to produce a wireless service have an inelastic supply—*i.e.,* it will cost proportionately more to purchase additional supply of those inputs—then it is costly to substitute away from spectrum and into those other inputs. Much of the capital that can substitute for spectrum—radios, for example—is likely to be supplied very elastically. Other capital—possibly towers—may be somewhat less elastic in supply. Overall, as capital goods are substituted for spectrum, their price is not likely to increase significantly. This tends to make the demand for spectrum more elastic.
- *The proportion of total costs associated with spectrum (Input costs as a portion of total costs).* The smaller the proportion of spectrum costs in providing the wireless service, the less it is necessary for the service provider to change its demand for spectrum in response to a change in the price of spectrum.[43] The smaller the portion of total costs spent on spectrum, the smaller the impact a given percentage price change in spectrum will have on the total costs of wireless services. A smaller share, therefore, tends to make the derived demand less elastic. Spectrum is an important component of production, but not overwhelmingly so. One rule of thumb states that spectrum costs are equal to capital costs. If depreciation and amortization are 20% of revenues and revenues are approxi-

[40] Because the supply of television licenses is fixed, the increased demand is completely absorbed into an increase in the license price.

[41] Much of the interest was in analyzing the demand for labor to see if it was inelastic and, thus, susceptible to union wage bargaining demands. See "Derived Demand" in *The New Palgrave: A Dictionary of Economics,* John Eatwell, *et al.,* ed., New York: Palgrave Publishers, 1998.

[42] Morley Gunderson and W. Craig Riddell, *Labour Market Economics,* 3Ed., McGraw-Hill Ryerson, 1993, pp. 203-206.

[43] This condition, known as "the importance of being unimportant," is relevant only if the elasticity of demand for the final output is greater than the elasticity of substitution between the inputs. In other words, if the demand for the final service is more sensitive to price than the ability to substitute away from spectrum when its price increases, then derived demand is more likely to be inelastic if "the importance of being unimportant" criterion holds. See Morley Gunderson and W. Craig Riddell, *Labour Market Economics,* 3Ed., McGraw-Hill Ryerson, 1993, p. 206.

mately equal to total costs,[44] then spectrum costs equal approximately one fifth of total costs. Spectrum costs do not appear to be so small that operators are indifferent to their level. Consequently, the portion-of-total-costs criterion does not strongly support an inelastic demand for spectrum.

- *The elasticity of demand for spectrum based services (Output demand elasticity).* The elasticity of demand for the final wireless services affects the elasticity of demand for spectrum because it either mutes or amplifies the effect of the input price change. As discussed below, demand for spectrum based services is elastic, indicating an elastic demand for spectrum.

These four factors are summarized in Table A.

TABLE A. MARSHALL-HICKS CRITERIA APPLIED TO SPECTRUM

	In wireless production	Effect on elasticity of derived demand for spectrum
Substitutability of inputs	Medium	More elastic
Complementary input elasticity	Elastic	Elastic
Input costs as a portion of total costs	Medium	Not inelastic
Output demand elasticity	Elastic	Elastic

Recent elasticity estimates of mobile telephony in the US range from -1.12 to -1.29.[45] Mobile telephony is only one use of liberally licensed wireless spectrum. It is likely that additional allocations of spectrum will be used for wireless broadband services. Adding other potential services to the demands from the mobile phone market increases the total demand for spectrum licenses. Any given percentage decrease in price will be met by increased demand in the mobile phone market plus increased demand in the wireless broadband market. Demand for wireless broadband is likely to be at least as elastic as demand for mobile phones.[46] Therefore, the sum of the two demands will be at least as elastic as the demand for mobile phones alone.

I conclude that demand for spectrum is at least as elastic as the demand for spectrum-based services, and that demand for spectrum-based services is at least as elastic as the demand for mobile phone services. Based on the average of the two estimates of the elasticity of demand for mobile phone service in the U.S., I conclude that the elasticity of demand for spectrum is -1.2 or greater (in absolute value).

[44] *See, e.g.,* Sprint Corporation, SEC Form 10-K/A, for the period ending December 31, 2004 (filed April 29, 2005), and Nextel Communications, Inc., SEC Form 10-K, for the period ending December 31, 2004 (filed March 15, 2005).

[45] Allan T. Ingraham and J. Gregory Sidak, "Do States Tax Wireless Services Inefficiently? Evidence on the Price Elasticity of Demand," 24 *Virginia Tax Review* (2004) (forthcoming).

[46] The elasticity of demand for wired broadband is estimated to be between -1.2 and -1.46. Robert W. Crandall, *Competition and Chaos: U.S. Telecommunications Since the 1996 Telecom Act,* Brookings Institution Press, 2005, p. 120 Demand for wireless phone service is more elastic than demand for wired phone service. For similar reasons, the elasticity of demand for wireless broadband services is expected to be more elastic than the elasticity of demand for wired broadband services.

April 27, 2005

Honorable Joe Barton
Chairman
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Honorable John D. Dingell
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Honorable Fred Upton
Chairman
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Honorable Edward J. Markey
Ranking Member
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Messrs. Barton, Dingell, Upton, and Markey:

This response from Aloha Partners is intended to aid the Commerce Committee in estimating the likely proceeds that will be generated from the sale of 60 MHz of 700 MHz spectrum.

Aloha Partners is the largest licensee of 700 MHz spectrum in the U.S. Aloha includes investors who have bid in every major Federal Communications Commission (FCC) auction in the past 10 years and have purchased thousands of FCC licenses.

Summary

Aloha estimates that the 700 MHz auction could generate between $20 billion to $30 billion for the U.S. Treasury.

Aloha, which plans to bid for the 60 MHz of available 700 MHz spectrum, expects the auction to be highly competitive. The high demand for spectrum is driven in

part by the explosive growth in the demand for wireless services. Over the past 8 years, wireless minutes of use have increased over 18-fold, the number of customers has increased over 400 percent, and wireless data revenues have gone from under $100 million to over $4 billion.

The 700 MHz auction offers a unique opportunity to purchase spectrum that is widely considered to be the best spectrum available today. The value of 700 MHz spectrum derives from its propagation characteristics. Each tower broadcasting at 700 MHz can cover twice as large an area as a transmitter broadcasting at 1900 MHz spectrum (and four times as large an area as a transmitter broadcasting at 2500 MHz WiFi spectrum). Thus, it is far less expensive to construct new networks with 700 MHz spectrum than with 1900 or 2500 MHz spectrum. Moreover, the 700 MHz auction will be for six large regional blocks that will make it easy for new entrants to create a national footprint. Aloha expects that the new entrants will include cable TV companies (like Cox and Comcast), entertainment companies (like Sony, Disney, Time Warner), and venture capital backed companies (like McCaw, NextWave, MetroPCS).

Background

Selling spectrum is analogous to selling a commercial apartment building. Three factors determine the expected sales price:

1. The amount of spectrum (MHz) to be sold in a particular area. The amount of spectrum is equivalent to the size of a commercially zoned lot – the bigger the better.

2. The location of the spectrum license. Like commercial real estate, spectrum in higher income areas is more valuable than spectrum in lower income areas where demand for spectrum-related services will be less.

3. The number of people included in the license area is analogous to the number of square feet inside a building – the greater the number, the more valuable the spectrum.

The wireless industry has developed a short hand for comparing spectrum sales: the cost of each MHz sold divided by the population in the license area for that spectrum. This is known as the "cost-per-MHz pop." For example, in July 2004, NextWave sold 10 MHz of 1900 MHz spectrum in Sarasota, Florida for $8.5 million. The cost-per-MHz pop for the Sarasota license was $1.25 ($8,500,000/10 MHz/680,000 people). At the same time, NextWave also sold 10 MHz of 1900 MHz spectrum in New York City for $930 million. The cost-per-MHZ pop for the New York license was $4.60 ($930,000,000/10 MHz/20,202,000 people). New York was considered almost 4 times more valuable than Sarasota because of its size, demographics, and population density.

Overview

Last year the FCC's Digital Television Task Force summarized their assessment of 700 MHz spectrum. They stated "700 MHz is "beachfront" spectrum with propagation characteristics that make it ideal for providing wireless service." 700 MHz can cover over twice as much territory as 1900 PCS spectrum and as a result will cost half as much as 1900 MHz to build a nationwide network. Thus, once the DTV transition is complete, it is likely that the value per MHz pop of 700 MHz spectrum will be equal to or greater than the value per MHz pop of 1900 MHz spectrum (particularly to new entrants desiring a nationwide footprint).

In order to determine the price at which 700 MHz is likely to sell at auction, Aloha reviewed 10 years of transactions of 1900 MHz spectrum. Beginning in 1995, the FCC auctioned off 60 MHz of nationwide 1900 spectrum (Auction #4) for an average of $.50 per MHz pop. It is significant to note that over half of the spectrum in auction #4 was purchased by new entrants such as Sprint, Omnipoint and Cox Communications. Twelve months later, the FCC auctioned off an additional 30 MHz of nationwide 1900 MHz spectrum (Auction #5) for $1.33 per MHz pop. In this case another set of new entrants (most of whom had not participated in Auction #4) purchased over 95 percent of the spectrum. These were venture capital-backed companies like NextWave, DCR PCS, and GWI PCS. Because the government provided 80 percent financing for winning bidders, it is difficult to estimate with certainty what the all cash equivalent bids would have been. However, based on the number of bidders and the amount of their down payments, the all cash price is likely to have been between $.50-.75 per MHz pop.

The FCC auctioned off another 30 MHz of nationwide 1900 MHz spectrum (Auction #11) in 1997. The average price paid in Auction #11 was $.33 per MHz pop, a 33 percent decrease from the original Auction #4 price of $.50 per MHz pop. As in the prior two auctions, the majority of winning bidders were new entrants. The significant point to make here is that in spite of over 90 MHz of spectrum being sold in the prior 18 months, the 30 MHz of spectrum purchased in Auction #11 sold at only a 33 percent discount to the original Auction #4. Equally significant is that, like the prior two auctions, the majority of this spectrum was sold to new entrants, not established wireless carriers. Similar to the 1900 MHz auctions in the mid 1990s, Aloha believes that the 700 MHz auction will attract a large number of new entrants such as cable TV operators, entertainment companies, and venture capital-backed companies.

Since 1997, the value of Auction #11 licenses has increased over 400 percent to $1.43 per MHz pop. Paul Kagan Associates ("Kagan"), a well respected source for spectrum valuations, produces an annual analysis of the Auction #11 license sales. The Kagan analysis shows that the price per MHz pop peaked in 2000-2001 during the high technology boom and then declined over the next 24 months. Beginning in 2004, however, prices started back up and are now selling for $1.43 per MHz pop (slightly over four times the original price of $.33 per MHZ pop paid in the 1997 auction).

Paul Kagan Associates
D & E & F Block
Auction 11 License Sales

	1997	1999	2001	2003	2004
Cost / MHz Pop	$.33	$1.20	$3.55	$1.35	$1.43

The transactions that Kagan Associates analyzed in 2004 covered a disproportionate number of small, rural market transactions which understated the cost per MHz pop of spectrum available on a national basis. Two recent transactions expand upon the Kagan Associates analysis and represent national footprints. The first is the value set by the FCC in its exchange for 10 MHz of nationwide 1900 MHz spectrum with Nextel last fall. The FCC valued 10 MHz of clear 1900 MHz spectrum at $4.9 Billion ($1.63 per MHz pop). The second example is the sale of slightly under 20 MHz of 1900 MHz spectrum by NextWave early in 2005. NextWave conducted two auctions in order to sell this spectrum. The first was a private auction covering a population of 74 million, over 75 percent of which were in the largest 10 markets. These licenses sold for an average of $2.80 per MHz pop. The second auction was a public auction (Auction #58) conducted by the FCC. This auction was made up mostly of small markets covering a population of 105 million, less than 20 percent of which were in the largest 10 markets. Large urban markets sell at a significant premium to small rural markets. Thus, it was not surprising that this public auction only generated an average of $.98 per MHz pop, less than half the price generated by the private auction for spectrum in the big urban markets. Taken together, the public and private auctions generated more than $5 Billion (or $1.63 per MHz pop) for licenses that covered nearly 60 percent of the US population.

These recent transactions indicate that today a company would need to pay approximately $5 billion (or $1.63 per MHz pop) to purchase 10 MHz of spectrum that covered the entire U.S. population. The dramatic increase in spectrum values during the past seven years is due to four factors:

1) an 18-fold increase in minutes of use from 63 billion in 1997 to 1.1 trillion in 2004;
2) a 75 percent reduction in the network cost to provide incremental capacity from $.78 per minute in 1997 to $.09 per minute in 2004;
3) a nearly four-fold increase in the number of wireless customers from 55 million in 1997 to over 180 million in 2004; and
4) a 40 times increase in wireless data revenues from under $100 million in 1997 to over $4 billion in 2004.

The dramatic increase in network usage coupled with an equally dramatic decline in the network cost of providing service has fueled a growing demand for additional spectrum. Industry experts expect this trend to continue.

Impact of Advanced Wireless Spectrum Auctions

Some analysts have argued that the FCC's sale of 90 MHz of 1900 MHz spectrum in 2006 could significantly lower the prices paid in the 700 MHz auction. Aloha believes that the 1900 MHz auction will have little impact on the 700 MHz auction because each type of spectrum will appeal to a different set of buyers.

The 1900 MHz spectrum will be valued most by established wireless carriers that have already built 1900 MHz networks across the country. These carriers will prefer to add additional spectrum to their existing networks rather than build new cell sites, because it will be easier and less expensive to add new spectrum than new towers.

For new entrants it is a very different story. Aloha estimates that the cost to build a nationwide 1900 MHz network is approximately $6.8 Billion. The cost of a 700 MHz nationwide network, however, will be approximately half that amount ($3.6 Billion) because each tower broadcasting at 700 MHz covers twice as many square miles as towers broadcasting at 1900 MHz.

Similar to Auctions #4, #5 and #11 in the mid 1990s, Aloha expects that the majority of buyers for the 700 MHz spectrum will be new entrants. These new entrants are likely to fall into five groups.

1) Major Cable Companies such as Comcast, Cox or Time Warner. Cable companies have recognized that they need a wireless product to bundle with their telephone and video offerings. While they may resell T-Mobile's or Sprint's network in the short term, in the long term they will want control of their own network and customers. These companies will probably need 30-40 MHz to have enough capacity to compete with the wireless carriers.

2) Major Entertainment Companies such as Sony, Disney, or Time Warner. The initial mobile TV trials in Europe and South Korea have demonstrated a significant demand for TV on cell phones and small devices. QUALCOMM has announced that it will spend $800 million to build out a nationwide 700 MHz mobile TV network by 2006. QUALCOMM only has 6 MHz today and probably needs an additional 5-10 MHz to be successful. QUALCOMM recognized that 700 MHz is the ideal frequency to deliver mobile TV because it travels so far and because 700 MHz is already used by UHF television stations. Major entertainment companies are just beginning to recognize the potential of mobile TV and are starting to conduct mobile TV trials in the US. Once the trials are complete, these companies are likely to want to be able to deliver their content over their own networks rather than be captive to the wireless companies. These networks are likely to need 10-20 MHz each to be competitive.

3) Major Satellite Entertainment Companies like EchoStar, DirecTV, XM, and Sirius. EchoStar and DirecTV can deliver high-speed data very inexpensively to their existing customers by using their existing satellite transmitters. However, it

is very costly for customers to send back high speed data to the satellite because doing so currently requires a large, expensive up-link transmitter. 700 MHz spectrum could easily solve this problem by providing an inexpensive terrestrial return path for satellite customers, particularly those in rural areas. These companies will probably each need at least 10-20 MHz to have enough capacity. Satellite radio companies have a different need that 700 MHz can solve. To receive the XM or Sirius radio signal requires a large antenna and a lot of power because the signals are being sent from far away. This now limits satellite radios to vehicles and in-home applications. 700 MHz could provide these companies with a very inexpensive way to provide their products to mobile handheld devices. These companies will probably each need 5-10 MHz to be successful.

4) Venture Capital-backed wireless companies such as NextWave, MetroPCS, Aloha Partners and Clearwire. Similar to the mid 1990s when venture capital backed companies saw an opportunity to enter the wireless market using new spectrum, the 700 MHz auction will provide a very cost effective way to build IP-based networks that can deliver high speed mobile data, voice over IP, and mobile video. Craig McCaw recently purchased Clearwire with the stated intention of providing high-speed wireless internet access. Last month, Bell Canada made a $100 million investment in Clearwire in order to provide voice over IP in the U.S. These networks will probably require 20-30 MHz each to be competitive.

5) Mobile Computing Companies such as Microsoft, Intel and Cisco. Wireless high speed internet has the potential to be a competitive alternative to both DSL and Cable. In rural areas, 700 MHz should offer a more affordable solution than DSL or cable. The mobile computing companies have formed the WiMAX forum to accelerate the development of wireless networks and consumer equipment. This group includes over 200 members such as Microsoft, Intel, Cisco, Motorola, Siemens, and Mitsubishi. Intel executives are leading the WiMAX forum and have indicated that 700 MHz is the best spectrum for mobile internet access available in the foreseeable future. Thus, it is very likely that the WiMAX forum members will produce inexpensive 700 MHz equipment within the next several years if a DTV transition date is established. It is also likely that a number of these WiMAX forum members will be active participants in the 700 MHz auction.

Conclusions

At the current price of $1.63 per MHz pop for nationwide spectrum, 60 MHz of 700 MHz spectrum could generate total auction receipts of approximately $30 Billion. Taken together with the auction of 90 MHz of Advanced Wireless Spectrum currently scheduled for July 2006, auctioning the 700 MHz spectrum will result in more than 150 MHz of spectrum being sold by the end of 2006. Aloha recognizes that the last time this much spectrum was auctioned in a 2-year period, the price per MHz pop for spectrum auctioned at the end of the 2-year period (Auction #11), sold for 33 percent less than the price

of the spectrum sold at the beginning of the period (Auction #4). If a similar pattern were to occur with the 700 MHz auction, it would mean that the 700 MHz spectrum could sell for $1.10 per MHz pop or about $20 Billion. Aloha does not believe that this is likely to happen because of the significant pent up demand for new spectrum and the significant number of new entrants.

On behalf of Aloha Partners, I thank you for the opportunity to convey our views on this important public policy. Please do not hesitate to contact me should you or your staff wish further information on this matter. My number is 401-458-1901.

Sincerely,

Charles C. Townsend
Managing General Partner
Aloha Partners, L.P.

ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS - INTERNATIONAL (APCO)

CONGRESSIONAL FIRE SERVICES INSTITUTE (CFSI)

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE (IACP)

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS (IAFC)

MAJOR CITIES CHIEFS ASSOCIATION (MCC)

MAJOR COUNTY SHERIFFS' ASSOCIATION (MCSA)

NATIONAL ASSOCIATION OF COUNTIES (NACo)

NATIONAL LEAGUE OF CITIES (NLC)

NATIONAL SHERIFFS' ASSOCIATION (NSA)

May 25, 2005

The Honorable Joe Barton
Chairman
House Committee on Energy and Commerce
Washington, DC 20515

The Honorable John Dingell
Ranking Member
House Committee on Energy and Commerce
Washington, DC 20515

The Honorable Fred Upton
Chairman
House Subcommittee on Telecommunications and the Internet
Washington, DC 20515

The Honorable Ed Markey
Ranking Member
House Subcommittee on Telecommunications and the Internet
Washington, DC 20515

Dear Chairmen and Ranking Members,

Last year Congress stated in the National Intelligence Reform Act that it "must act to pass legislation in the first session of the 109th Congress that establishes a comprehensive approach to the timely return of analog broadcast spectrum as early as December 31, 2006." We are pleased that the Commerce Committee is beginning to move towards fulfilling that obligation. As the leading associations representing public safety and local government, we urge members of Congress to work together to pass legislation that will establish a truly firm date for the spectrum to be available for public safety -- ideally December 31, 2006.

Nothing has changed since the adoption of the National Intelligence Reform Act. Further delay in the release of the spectrum puts the safety of first responders and the public in danger. One of the most valuable lessons first responders learned on 9/11 was the need to have mission critical interoperable communications. Let us not forget those lessons learned on that tragic day when so many first responders lost there lives because they were not able to communicate.

As we have continuously stated for more than eight years, additional spectrum is required to alleviate dangerous congestion on public safety systems, especially in major metropolitan areas. Existing public safety spectrum bands are completely full in such areas with no room for expansion. This spectrum congestion existed back in 1997 when the Congress required that 24 MHz from the 700 MHz band be reallocated to public safety. The congestion is even worse today, due to population expansion and the new homeland security obligations imposed on public safety agencies since 9/11. There is a most urgent need to resolve this chronic problem promptly.

In the past several years, public safety agencies have also identified the need for additional spectrum in the 700 MHz band to implement new high speed data and video systems that will greatly enhance their ability to protect the safety of life and property in today's increasingly dangerous world. Thus, we urge that the legislation to establish a firm date to end the DTV transition not preclude future allocations of additional 700 MHz band spectrum for public safety to address broadband requirements. Such spectrum needs are now being examined by the FCC and the Department of Homeland Security, as required by the National Intelligence Reform Act

Again, we ask Congress to take action now to clear the spectrum. As Congress stated in the National Intelligence Reform Act "any delay in the adoption of the legislation will delay the ability of public safety entities to begin planning to use this needed spectrum."

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The Brattle Group

Cambridge
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May 18, 2005

Honorable Joe Barton
Chairman
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Honorable John D. Dingell
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Honorable Fred Upton
Chairman
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Honorable Edward J. Markey
Ranking Member
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Messrs. Barton, Dingell, Upton and Markey:

The Committee on Energy and Commerce is investigating ways to free up a potentially productive block of spectrum in the 700 MHz band that is now used to provide traditional broadcast television. To help inform the Committee's analysis, QUALCOMM Incorporated recently asked *The Brattle Group* to estimate how much revenue the U.S. Treasury would receive if the Federal Communications Commission (FCC) auctioned licenses for the remaining 60 MHz of spectrum in this band, which the FCC has allocated for commercial use.[1]

[1] The focus of attention has been on channels 52-69 in the 700 MHz band, which occupy 108 MHz of spectrum. Of that, 48 MHz are not available for auction (6 MHz comprise guard bands, 24 MHz have been designated for public safety, and 18 MHz have been licensed in previous auctions). The remaining 60 MHz, which are the focus of this letter, consist of Blocks C and D in the Upper 700 MHz Bandplan, and Blocks A, B and E in the Lower 700 MHz Bandplan. For bandplan displays, see:

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SUMMARY

We use a market comparables approach to calculate the value of licenses in the 700 MHz band because there is a well-established market for equivalent assets. Specifically, we look at sales of broadband personal communications services (PCS) licenses, which use the 1.9 GHz band. The two major sales of broadband PCS licenses that have occurred this year, taken together, yielded a price of $1.60 per MHz-pop.[2] This is consistent with the FCC's 2004 estimate, itself based on market comparables, that 10 MHz of nationwide 1.9 GHz spectrum was worth $1.70 per MHz-pop. Thus, we take the simple average of these two figures ($1.65 per MHz-pop) as our base estimate of the value of nationwide spectrum in the 700 MHz band.

We then analyze two main arguments for adjusting that base estimate. Most important, we consider whether a potentially large increase in the supply of broadband spectrum will significantly reduce its price, as some people argue. We conclude that the prices paid for broadband PCS licenses in 2005 reflect the market's expectation that a significant increase in supply is imminent. Thus, there is no reason to believe that the FCC's planned auction of 90 MHz of 3G spectrum will cause the price of spectrum to drop significantly. There is greater market uncertainty regarding the 700 MHz spectrum, however, so price may drop somewhat if and when that spectrum becomes available for auction.

We also look at the technical features of the 700 MHz band (propagation characteristics and power limits) that make it superior to the 1.9 GHz band for providing broadband wireless services. Most important, these technical advantages allow for significantly lower infrastructure costs; the savings to a licensee building a nationwide network could be worth as much as $0.43 per MHz-pop. All else being equal, some bidders would be willing to pay $0.43 per MHz-pop more for 700 MHz spectrum than for 1.9 GHz spectrum to capture these savings.

In sum, our base estimate should be adjusted upward to reflect the superior technical features of the 700 MHz band, but some downward adjustment is also appropriate to take account of the impact of increased supply that the market has not yet anticipated. Since we do not have a rigorous basis for quantifying either factor, we refrain from making any adjustment, in effect, treating the two factors as canceling one another out. Thus, we conclude that *our base estimate remains our best estimate: an FCC auction of licenses for 60 MHz of 700 MHz spectrum will yield $1.65 per MHz-pop, or about $28 billion, assuming that the spectrum is unencumbered.*

Our estimate represents only the auction revenue (*i.e.*, Treasury receipts) that this 60 MHz of spectrum would generate if it were freed from current restrictions. Lifting the restrictions on this spectrum would also generate significant consumer benefits in the form of new services and lower prices, and these consumer benefits likely would exceed the auction receipts in value by a significant amount.

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http://wireless.fcc.gov/auctions/data/bandplans/700band.pdf; and
http://wireless.fcc.gov/auctions/data/bandplans/700lower.pdf.

[2] We express the revenue generated by a license auction or a secondary trade as the price paid per MHz of spectrum divided by the population (pop) covered by the licenses (price per MHz-pop).

I. Valuation Approach

Economists use two basic techniques to estimate the value of spectrum licenses. The *income approach* is based on the assumption that the value of a spectrum license is equal to the expected future benefits (income) to the license holder discounted at a rate that reflects the time value of money and the risk involved. The *market comparable (or market) approach*, which has its roots in real estate, observes the prices paid for equivalent licenses in the market. The two approaches should yield similar results because the prices paid for comparable licenses reflect the present value of the future income stream that ownership of the license being valued would provide.

We use the market comparable approach to estimate the value of licenses in the 700 MHz band, because there is a well-established market for equivalent assets on which to base our analysis.[3] As described below, we look at sales of broadband PCS licenses in both the *primary* market (*i.e.*, auctions) and the *secondary* market over the last decade. The prices paid in several recent transactions give us a base estimate of the value of 700 MHz licenses. We then analyze three possible rationales for adjusting this estimate: technical advantages of the 700 MHz band; the growing supply of spectrum; and the potential for the 700 MHz licenses to be encumbered.

II. Base Estimate

A. Review of 1.9 GHz Transactions

1. Auctions

Since Congress authorized their use in 1993, the FCC has held 60 auctions of spectrum licenses, for applications ranging from direct broadcast satellite to paging to personal communications services (PCS). PCS systems, which were licensed originally to provide competition for cellular telephony, encompass a wide range of mobile wireless technologies for voice and data communications. Broadband PCS licenses, which use a 120-MHz portion of the 1.9 GHz band, have been assigned entirely through auction. Spectrum experts agree that, although the 700 MHz band has technical and cost advantages relative to the 1.9 GHz band, broadband PCS licenses offer a very good basis for estimating what 700 MHz licenses would be worth.

The FCC has held five major auctions of broadband PCS licenses, as summarized in Table 1. The broadband PCS spectrum was divided into three blocks of 30 MHz each (A, B and C) and three blocks of 10 MHz each (D, E and F).[4] Auctions 4, 5 and 11, which were held between 1995 and 1997, assigned all 120 MHz of this new spectrum. The two most recent auctions (35 and 58) reassigned licenses that had been cancelled or terminated—most as part of the NextWave bankruptcy. The results of the auctions were wide-ranging: the price per MHz-pop varied from a low of $0.33 (Auction 11) to a high of $4.18 (Auction 35). Moreover, individual auctions included hundreds of licenses; thus, the (weighted average) prices shown in Table 1 mask significant price differences *within* auctions.

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[3] The income approach is widely used by bidders to help determine the appropriate bid. However, in this case, it would require an analyst to estimate would-be licensees' costs and revenues, and the results would highly sensitive to key assumptions, such as the cost of capital. By contrast, the comparable approach is direct and transparent.

[4] Blocks A and B were initially assigned on the basis of 51 Major Trading Areas (MTAs). Blocks C, D, E and F were assigned on the basis of 493 Basic Trading Areas (BTAs).

Table 1
FCC Broadband PCS Auctions

Transaction	Block	Date	Spectrum	Geographic Service Area	Price / MHz-Pop
Auction 4	A & B	1995	1.9 GHz	National	$0.51
Auction 5	C	1996	1.9 GHz	National	$1.35
Auction 11	D,E & F	1997	1.9 GHz	National	$0.33
Auction 35	C & F	2001	1.9 GHz	National	$4.18
Auction 58	C, with A, D, E & F	2005	1.9 GHz	Regional	$0.98

Much has been written about the FCC's PCS auctions. Although there is no definitive explanation for the price differences, analysts point to at least four factors. Market conditions are one reason for price differences. Prices in Auction 5 (C block) were significantly higher than prices in Auction 4 (A & B blocks), in part because the intervening year saw major improvements in wireless communications technology and continued strong growth in consumer demand for wireless telephony.[5] In Auction 35, which occurred during a period of lofty investor expectations, bidders paid higher prices still for licenses; European carriers also bid unusually high prices for third-generation cellular licenses at around the same time.

Auction rules are another reason that prices differ. The FCC restricted participation in Auction 4 by existing cellular licensees in an effort to encourage new entry into the telecommunications market. The conscious tradeoff was that fewer bidders participated, which kept bids artificially low. In Auction 5, FCC rules—specifically, overly generous financing terms designed to encourage small business participation—had the opposite effect, attracting a large number of bidders and artificially inflating bids. According to the Congressional Budget Office (CBO), absent these incentives, Auction 5 would have yielded $0.80 rather than $1.35 per MHz-pop.

A third factor is the level of competition in the auction. As indicated above, the yield in Auctions 4 and 5 was directly related to the number of bidders, which in turn was influenced by FCC rules. Similarly, in Auction 11, the low yield ($0.33) was consistent with the small number of bidders (the eligibility ratio—a crude measure of the level of bidder competition—was only 1.7, compared to 6.7 for Auction 5 and 1.9 for Auction 4). This low participation rate was a reaction to the speculative bidding in Auction 5 and reflected a temporary dip in the telecommunications market—two factors that contributed to the subsequent bankruptcy of NextWave and the other C-block licensees.

Finally, characteristics of the licenses themselves help explain price differences. One important characteristic is the geographic scope of spectrum coverage. The first four auctions assigned licenses for every market in the country—in effect providing valuable nationwide spectrum rights. By contrast, Auction 58 consisted of a miscellaneous assortment of licenses, most of them in second and third tier markets, and did not provide the opportunity for nationwide

[5] Congressional Budget Office, *Where Do We Go From Here? The FCC Auctions and the Future of Radio Spectrum Management* (April 1997), at 19-22. Unless other indicated, the information in this section comes from this report.

coverage. The size of the spectrum block is another relevant characteristic. All else being equal, licenses in the 30-MHz blocks (A, B and C) are more valuable per MHz-pop than those in the 10-MHz blocks (D, E and F) because the larger blocks give licensees greater flexibility.

2. Secondary Market Transactions

Broadband PCS licenses have traded in the secondary market as well. Table 2 summarizes eight relatively recent secondary market trades. The list is not exhaustive. Rather, it consists of seven transactions that the FCC examined in 2004 as part of an unusual valuation exercise described below. Table 2 also includes a 2005 transaction in which Verizon Wireless purchased NextWave's PCS licenses in 23 largely metropolitan markets.

Table 2
Secondary Market Sales of Broadband PCS (1.9 GHz) Licenses

Transaction	Date	Seller	Buyer	Price / MHz-Pop
50 Licenses	2002	Northcoast	Verizon	$1.58
Spectrum in 34 Cities	2003	NextWave	Cingular	$1.66
62 Spectrum Licenses in 57 Areas	2004	Qwest	Verizon	$1.36
10 MHz, 3 BTAs (San Francisco-Oakland-San Jose, Sacramento, Las Vegas)	2004	Cingular	T-Mobile	$1.67
10 MHz New York BTA	2004	NextWave	Verizon	$4.74
10 MHz Sarasota-Bradenton BTA	2004	NextWave	MetroPCS	$1.37
10 MHz Tampa-St. Petersburg-Clearwater BTA	2004	NextWave	MetroPCS	$1.33
19 10MHz and 4 20MHz Licenses in 23 BTAs	2005	NextWave	Verizon	$2.80

These secondary market transactions reflect far less variation in price than the broadband PCS auctions, largely because the FCC selected them (or at least the first seven) as representative of the value of nationwide spectrum in the 1.9 MHz band. The two outliers are the 2004 and 2005 sales of NextWave licenses to Verizon, which yielded $4.74 and $2.80 per MHz-pop, respectively. These licenses commanded higher prices because they serve New York City and other large metropolitan markets. Such markets typically bring higher prices per MHz-pop because they are more densely populated, and thus less expensive to serve, and more affluent.

B. Selection of Comparable Transactions

1. FCC's Point Estimate

In a 2004 Report and Order, the FCC concluded that 10 MHz of nationwide spectrum in the 1.9 GHz band was worth $1.70 per MHz-pop.[6] This unusual finding (the FCC does not put a value on spectrum as a rule) was part of a complex regulatory proceeding that involved a dispute between Nextel Communications and Verizon Wireless over the value of that spectrum. The FCC analyzed competing valuations provided by experts for the two companies. These valuations, which ranged from $1.25 to $1.82 per MHz-pop, used both income and market approaches. However, the FCC ultimately based its estimate solely on market comparables.

[6] In the Matter of Improving Public Safety Communications in the 800 MHz Band, FCC, "Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order" (August 6, 2004).

Specifically, after reviewing the seven pre-2005 transactions summarized in Table 2, the FCC identified the first two (Northcoast-Verizon and NextWave-Cingular) as its benchmarks and calculated the average of the two prices ($1.62 per MHz-pop). The Commission then added a five percent premium to reflect the fact that the disputed spectrum (unlike the benchmark spectrum) would provide nationwide coverage. (The FCC limited the premium to five percent on the grounds that several carriers already had national footprints and thus would not be willing to pay as much for nationwide spectrum.) *The FCC's point estimate ($1.70 per MHz-pop) is a solid indication of what nationwide licenses in the 1.9 GHz band were worth last year, and it represents one comparable on which we base our valuation of licenses in the 700 MHz band.*

2. 2005 Transactions

As reported in Tables 1 and 2, two major sales of 1.9 GHz licenses have occurred this year, both involving the resale of NextWave assets:

- Auction 58, in which NextWave licenses that serve about 100 million people in mostly second tier markets sold for $2 billion, or $0.98 per MHz-pop.
- Verizon's purchase for $3 billion, or $2.80 per MHz-pop, of NextWave licenses covering 73 million people in more than 20 major markets.

Neither of these transactions, taken alone, represents a good market comparable. As reflected in their price, Auction 58 licenses cover markets that are lower in density (and therefore more expensive to serve on a per customer basis) and less affluent. By contrast, the private transaction covered a number of high-density, relatively affluent markets, including New York, Boston, Washington, DC, and Los Angeles. Collectively, however, the licenses cover more than 60 percent of the U.S. population. Moreover, taken together, these two transactions produced prices that are roughly equivalent to a nationwide average.[7] Using a weighted-average, *the combined price of spectrum licenses sold in Auction 58 and the 2005 NextWave-Verizon Wireless transaction is $1.60 per MHz-pop. This weighted-average price represents a second market comparable on which to base our valuation of licenses in the 700 MHz band.*

[7] To compare these two transactions to a nationwide auction, we did the following analysis. For each of three nationwide FCC auctions (Auctions 5, 11 and 35), we calculated the price of licenses in the subset of markets (basic trading areas, or BTAs) which were included in *either* Auction 58 *or* the 2005 Verizon-NextWave transaction. For each of those three auctions, we then compared the average price of licenses in the specified subset of BTAs to the (nationwide) average price for *all* licenses. For Auction 5, licenses in the specified subset of BTAs sold for $1.45 per MHz-pop compared to $1.35 per MHz-pop for all licenses. For Auction 35, the two prices were even more similar: $4.26 per MH-pop for the subset of licenses versus $4.18 per MHz-pop for all licenses. For Auction 11, by contrast, the subset price ($0.25 per MHz-pop) was unexpectedly low relative to the nationwide price ($0.33 per MHz-pop); however, a number of second and third tier markets in that auction produced higher bids than first tier markets, an atypical pattern that seems to account for that unexpected result. Overall, we concluded that the two 2005 transactions, taken together, produced prices equivalent to those of a nationwide auction.

C. Recap and Conversion of Our Base Estimate to Aggregate Revenue

To recap, the two major sales of 1.9 GHz licenses that have occurred this year, taken together, yielded a price of $1.60 per MHz-pop, which is remarkably consistent with the FCC's 2004 estimate that 10 MHz of nationwide 1.9 GHz spectrum was worth $1.70 per MHz-pop. Thus, *we take the simple average of these two figures—$1.65 per MHz-pop—as our base estimate of the value of the rights (licenses) to nationwide spectrum in the 700 MHz band.* Converting that to aggregate revenue, we estimate that an FCC auction of licenses to 60 MHz of such spectrum would generate about $28 billion.[8] If any portion of that spectrum were to be set aside for unlicensed use, and therefore made ineligible for auction, our estimate would need to be reduced proportionately.[9]

III. Analysis of Possible Adjustments to our Base Estimate

Our base estimate ($1.65 per MHz-pop) is a solid measure of the value of nationwide licenses for broadband PCS spectrum in the current market—namely, a highly competitive, spectrum-constrained market served by five national wireless carriers, most of whom nevertheless have acquired sufficient bandwidth to give them something approaching a nationwide footprint.[10] It reflects the expected future profits from broadband PCS license ownership, based on information available at the time of the transactions regarding market conditions (demand trends, supply expectations, number of competitors, *etc.*), technology, and other factors. However, there are three possible arguments for adjusting our base estimate as a measure of the value of 700 MHz licenses. First, an upward adjustment may be appropriate to take account of technical advantages of the 700 MHz band relative to the 1.9 GHz band. Second, changing market conditions—in particular, the potential for a large increase in the supply of spectrum—may require a downward adjustment in our base estimate. Finally, the possibility that the 700 MHz spectrum will be encumbered (*i.e.*, not cleared of the broadcasters) may require a downward adjustment.

A. Technical and Cost Advantages of the 700 MHz Band

The 700 MHz band has technical features that make it particularly well-suited to providing broadband wireless services. The fundamental laws of physics dictate that lower frequencies travel further at a given power level. Thus, providers need fewer antennas and less power to deliver services to a given area. Moreover, because TV frequencies can better penetrate walls, signals are not as dependent on line-of-sight transmission to outdoor antennas. Finally, under FCC regulations, the power limits for the lower 700 MHz band are substantially higher than for other broadband wireless spectrum, including the 1.9 GHz band.

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[8] This simple exercise involves multiplying the price per MHz-pop by the bandwidth that would be licensed (60 MHz) and by the size of the relevant population—in this case, total U.S. population. To be consistent with the FCC's 2004 valuation of the 1.9 GHz spectrum, we use the total year 2000 population for the United States including possessions, or 285.62 million. Actual calculations are: ($1.65 x 60 x 285,620,000) = $28.3 billion.

[9] For a recent economic analysis of the debate over unlicensed spectrum, see William J. Baumol, "Toward an Evolutionary Regime for Spectrum Governance: Licensing or Unrestricted Entry?," Working Paper, AEI-Brookings Joint Center for Regulatory Studies (April 2005). http://www.aei.brookings.org/admin/authorpdfs/page.php?id=1137.

[10] The five national wireless carriers are: Cingular-AT&T, Nextel, Sprint, T-Mobile and Verizon Wireless. Sprint and Nextel have announced plans to merge, which if approved would leave four national carriers. Approval of the merger would not alter our analysis.

These advantages are meaningful: a signal transmitting at 700 MHz covers roughly twice the area as one transmitting at 1.9 GHz, and thus needs only about half as many base stations.[11] According to Charles Townsend, the Managing General Partner of Aloha Partners, which is the largest 700 MHz licensee, the costs of building a nationwide network are directly proportional to the number of base stations: a 700 MHz nationwide network would cost about $3.6 billion compared to $6.8 billion for a 1.9 GHz network.[12] Moreover, with fewer base stations, a licensee's operating costs would be lower. Two caveats are in order: First, the savings would be less, although still significant, for an existing carrier that already has a nationwide network. Second, as network traffic grows, and an operator begins to split its cell sites, the advantage that comes from using the 700 MHz band will diminish. But, according to Townsend, the "crossover" point is three to eight years out in most markets.[13]

The propagation characteristics of the 700 MHz band are particularly advantageous for certain applications. For example, QUALCOMM bought encumbered spectrum in the lower 700 MHz band to launch its MediaFLO service, which will deliver multimedia content to wireless devices on a dedicated network. QUALCOMM will be able to provide this multicast application with just a fraction of the towers it would need if it were operating in a higher-frequency band.[14] Similarly, the relative ease with which 700 MHz signals can penetrate walls may enable more cost-effective provision of broadband wireless services to equipment used primarily indoors.[15]

In short, because of the superior technical features of the 700 MHz band, licensees will be able to provide the same service at lower costs (or higher quality), and some services may be feasible and/or cost-effective at the lower band but not at the higher band. All else being equal, bidders will pay more for a 700 MHz license to capture this economic advantage.

The Aloha Partners figures cited above give some indication of what this advantage is worth. Based on Townsend's estimates, the difference in the cost of building a (new) nationwide network for 700 MHz spectrum versus 1.9 GHz spectrum is about $3.2 billion ($6.8 billion versus $3.6 billion).[16] Assuming that a nationwide operation requires 20 MHz of spectrum, that figure translates into a per-MHz-pop cost savings of about $0.43—a substantial number.

All other things being equal, some if not all bidders would be willing to pay $0.43 per MHz-pop more for 700 MHz spectrum than for 1.9 GHz spectrum in order to capture those savings. Thus, one could adjust our base estimate ($1.65 per MHz-pop) upward by as much as that amount to

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[11] The 700 MHz spectrum offers a four-to-one advantage over the 2.5 GHz band, which is the current spectrum for WiFi and multichannel multipoint distribution services (MMDS). Chris Knudsen of Vulcan Capital estimated that it would require only one-third to one-fourth as many cell cites to provide wireless broadband service to the Seattle area using 700 MHz spectrum as opposed to the 2.6 GHz band. Similarly, an analysis by Intel found that the 2.5 GHz band would require four to five times as many base stations as the 700 MHz band to achieve equal coverage. Patrick P. Gelsinger, Chief Technology Officer, Intel Corporation, Testimony before the Senate Committee on Commerce, Science and Transportation (June 9, 2004).

[12] Letter from Townsend to Members of the House Committee on Energy and Commerce (April 27, 2005).

[13] Telephone conversation with Charles Townsend (May 11, 2004).

[14] QUALCOMM Incorporated, "QUALCOMM Subsidiary to Support Nationwide Delivery of Mobile Multimedia in 700 MHz Spectrum," Press Release (November 1, 2004).

[15] Testimony of Patrick P. Gelsinger, Intel Corporation, *op cit.*

[16] We calculated that number as follows: A $3.2 billion savings on a nationwide network represents a cost savings of about $10 per pop, where total pop, or U.S. population, is about 300 million. Assuming that a nationwide operation will require 20 MHz of spectrum, that savings equals $0.50 per MHz-pop—or about $0.43 in present discounted dollars. To get $0.43, we spread the savings over five years and applied a 10 percent discount rate.

take account of the technical advantages of the 700 MHz band. However, we stop short of making any formal adjustment to our estimate, because we have not done a comprehensive or rigorous analysis of potential cost savings or an income analysis of potential bidders.

B. The Growing Supply of Spectrum

The U.S. devotes only about 190 MHz of spectrum to fixed and mobile wireless communications services, and that figure has not grown since the mid-1990s. By contrast, European countries allocate 250-300 MHz on average for the same activities, and the figure is even higher in Germany (302 MHz), the Netherlands (355 MHz) and the United Kingdom (340 MHz).[17] Even among experts who disagree on telecommunications policy, there is general agreement that the United States is spectrum-starved.[18]

In response to widespread criticism from industry and elsewhere, officials in the Executive Branch and the Congress have tried to address this spectrum drought in two ways. These efforts should soon provide some relief.

One effort has focused on 90 MHz of spectrum in the 1.7 GHz and 2.1 GHz bands that may be used for advanced wireless services, including third-generation (3G) services. (Among other things, these bands correspond to the spectrum already used for 3G in many parts of the world.) Then-Chairman Michael Powell announced in December 2004 that the FCC planned to commence the auction of licenses in that spectrum as early as June 2006.[19] Powell's announcement marked the culmination of a four-year process, initiated by the Clinton Administration, through which government and industry examined spectrum needs and identified frequency bands that could be cleared to allow for the provision of 3G services. As a last step in that process (and just days before Powell's announcement), Congress finally enacted the Commercial Spectrum Enhancement Act. This legislation, which was approved a year earlier by the full House and the Senate Commerce Committee, provided for the use of auction revenues to compensate the Department of Defense and other federal agencies for the costs of clearing those bands—thus removing the final barrier to an FCC auction of this spectrum.[20]

The second, ongoing effort involves the 60 MHz of spectrum in the 700 MHz band that is the focus of this letter. In the past, efforts to reallocate this spectrum to general wireless use, in keeping with FCC bandplans, have lacked enough support in Congress to overcome broadcaster opposition. However, the tide has been gradually turning, in response to mounting criticism from industry, think tanks and the media, among other sources. A year ago, House Energy and

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[17] Testimony of Thomas W. Hazlett before the Senate Committee on Commerce, Science and Transportation (June 9, 2004).

[18] At a recent conference, panelists with alternative views on U.S. telecom policy expressed a strikingly common view as to the urgent need for spectrum. According to one of the experts, Thomas Hazlett, the shortage of spectrum has even driven consolidation in the wireless industry. AEI-Brookings Joint Center for Regulatory Studies and Stanford Institute for Economic Policy Research, "The Future of Telecom Deregulation: Two Alternate Visions," Washington, DC (March 24, 2005).

[19] FCC Press Release, "FCC to Commence Spectrum Auction That Will Provide American Consumers New Wireless Broadband Services" (December 29, 2004).

[20] The Act required the FCC to give the National Telecommunications and Information Administration (NTIA) 18 months notice of its intent to auction the 3G spectrum. Less than a week after President Bush signed the Act (and with the Christmas holiday having intervened), Chairman Powell sent a letter to NTIA providing the minimum notice. Letter from FCC Chairman Michael K. Powell to the Honorable Michael D. Gallagher, Assistant Secretary for Communications and Information, Department of Commerce (December 29, 2004).

Commerce Committee Chairman Joe Barton endorsed a plan that would force TV stations to return their analog spectrum to the federal government by the end of 2006, and Rep. Barton's intent to move legislation toward that goal has been widely publicized for months. Although impediments remain, and key Senate officials are seen as less enthusiastic, there has been a growing perception that the Congress is likely to enact legislation this year to clear the 700 MHz spectrum by a date certain.

Some observers, in considering the financial implications of these developments, have suggested that the pending auction of licenses to 3G spectrum will reduce what bidders are willing to pay for broadband licenses, including 700 MHz licenses. By this view, once the 3G spectrum reaches the market, an auction of 700 MHz licenses will yield prices significantly below those recently paid for broadband PCS spectrum. However, this seemingly logical observation about supply and demand becomes problematic on closer inspection.

In analyzing the impact of an increase (or decrease) in supply on the price of an asset, the triggering event is not the increase (or decrease) itself but rather the market's recognition that it is going to occur. Thus, to the extent that the pending increase in the supply of broadband spectrum was expected, the market should have factored it into recent spectrum transactions. As noted above, the FCC announced its intent to auction 90 MHz of 3G spectrum in December 2004, following a well-publicized, multi-year process that slowly but steadily removed the political and legal impediments to such a transaction. Although some uncertainty as to timing remains, the FCC's intent to begin auctioning the 3G spectrum at the earliest possible date has been known since late last year, and was anticipated to some degree long before that.

In sum, the prices paid for broadband PCS licenses in the two 2005 transactions that we observed, if not the earlier transactions, reflect the market's expectation that a significant increase in supply is imminent. Thus, there is no reason to believe that the increase in supply resulting from the 3G auction will cause the price of spectrum to drop significantly.

Similarly, to the extent that the market has already anticipated the increase in supply represented by the 700 MHz spectrum, that increase in available spectrum will not affect the price of broadband licenses. That said, considerable market uncertainty remains, in particular, as to the likely date by which broadcasters will be required to clear the band under final legislation. If and when legislation passes, and the 700 MHz spectrum is auctioned, that uncertainty will dissolve, and the price of spectrum may fall.

In sum, because markets are generally efficient, current spectrum prices reflect the best available information regarding the potential impact of future changes in supply, demand and other factors. By relying on recent market transactions, a comparable methodology takes advantage of this vast base of decentralized knowledge. Thus, the fact that 90 MHz of 3G spectrum will come on the market in the next few years is not a credible argument for adjusting our base estimate downward, precisely because recent broadband PCS license sales should have already taken that future development into account. For the same reason, Wall Street's projection that the demand for wireless data and voice services will see continued strong growth is not a basis for adjusting our estimate upward: recent transactions already reflect that expectation.

Because there is greater market uncertainty with respect to the 60 MHz of 700 MHz spectrum, it may be appropriate to adjust our base estimate downward to reflect the potential impact of that added supply. But recent transactions should have taken even that into account somewhat because of the gradual, tide-turning developments described above—in particular, Chairman Barton's well-publicized intent to free up the spectrum, which he signaled nearly a year ago.

C. The Potential for Encumbrance

The comparable transactions on which we based our estimate involved spectrum that either was unencumbered or was covered by clear rules that provided for the removal of any encumbrance (*i.e.*, other spectrum activities that might create interference). Thus, if any of the 700 MHz spectrum were to be encumbered, our base estimate would need to be adjusted downward. Moreover, the downward adjustment would need to be significant. Table 3 summarizes the results of two relatively recent FCC auctions of encumbered licenses in the 700 MHz band. Although the spectrum assigned in these two auctions is considered to be the best of beachfront property, licensees cannot use the spectrum to its full extent unless it is vacated by the current license holders, namely the broadcasters. As a result of this limitation, the licenses sold for only three cents per MHz-pop—a small fraction of the price that comparable, unencumbered licenses commanded in the transactions shown in Tables 1 and 2.

Table 3
FCC Auctions of Encumbered 700 MHz Spectrum

Transaction	Date	Spectrum	Price / MHz-Pop
Auction 44 (Lower 700 MHz Band)	2002	700 MHz	$0.03
Auction 49 (Lower 700 MHz Band)	2003	700 MHz	$0.03

We have no basis for predicting the probability that any or all of the 60 MHz of 700 MHz spectrum will be encumbered. Thus, we will not adjust our base estimate to reflect that probability. Instead, we will make our estimate conditional on the assumption that the spectrum will be unencumbered—*i.e.*, that it will be cleared of television broadcasters as of a date certain.

IV. FINAL ESTIMATE

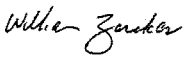
In section two, we used market comparables to calculate as our base estimate that licenses to 6 MHz of 700 MHz spectrum would be worth $1.65 per MHz-pop, or about $28 billion. In the la section, we analyzed three possible arguments for adjusting that base estimate. We conclude that our estimate should be adjusted upward, potentially by a significant amount, to take accou of the superior technical features of the 700 MHz band; at the same time, some downwa adjustment is appropriate to take account of the potential impact of increased spectrum supp that the market has not yet anticipated. Since we do not have a basis for quantifying eith factor, we refrain from making any adjustment, in effect, treating the two factors as cancelir one another out. Thus, we conclude that *our base estimate remains our best estimate: an FC auction of licenses to 60 MHz of 700 MHz spectrum will yield $1.65 per MHz-pop, or about $2 billion, assuming that the spectrum is unencumbered.* If any portion of this spectrum were to b set aside for unlicensed use, and therefore made ineligible for auction, our estimate would nee to be reduced proportionately.

V. CONSUMER BENEFITS ARE ADDITIONAL—AND SIGNIFICANT

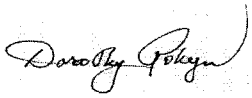
Our estimate represents only the auction revenue (*i.e.*, receipts to the U.S. Treasury) that 60 MH of unencumbered spectrum in the 700 MHz band would generate. In addition, the mark allocation of this choice spectrum would result in benefits to American consumers in the form new broadband services and lower prices for existing services. Although a calculation of the consumer benefits is outside the scope of our work, it is safe to say that they would b significant. Two prominent telecommunications economists have estimated that the consum surplus (a measure of benefits to consumers) associated with efficient use of spectrum could b an order of magnitude greater than the auction value of spectrum licenses.[21]

We appreciate the opportunity to provide this information to the Committee.

Sincerely,



William P. Zarakas
Principal
The Brattle Group[*]



Dorothy Robyn
Principal
The Brattle Group

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[21] Gregory L. Rosston, "The Long and Winding Road: The FCC Paves the Path with Good Intentions *Telecommunications Policy*, Vol. 27, No. 7 (August 2003), pages 501-515; and Thomas W. Hazlett, Colem Bazelon, John Rutledge and Deborah Allen Hewitt, "Sending the Right Signals: Promoting Competiti Through Telecommunications Reform," A Report to the Chamber of Commerce (September 22, 2004), page 6

[*] *The Brattle Group* is an economic consulting firm that specializes in the application of quantitative methods economics and corporate finance to the analysis of competition in network industries. William Zarakas hea *Brattle's* practice in telecommunications and Dorothy Robyn heads the firm's public policy practice.

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May 6, 2005

The Honorable Joe Barton
US House of Representatives
2109 Rayburn Building
Washington, DC 20515

Re: Data for Hard Analog Cut-Off

Dear Chairman Barton,

Thank you so much for your strong leadership on the digital television (DTV) transition. We believe you are doing the right thing for our nation in forcing the issue of a hard cut off date for analog broadcasting.

Both the debate and the actual setting of a firm date will have strong positive effects of moving this process along, publicizing the DTV transition, and freeing up the analog spectrum for more significant public safety and new technology uses.

We have provided some actual and projected data to assist your efforts.

Homes Relying Exclusively on Analog Over the Air Signals

In essence, the most important issue in cutting off of analog service is: who will be disenfranchised? Or, how many American homes will **not** receive a television signal on the cutoff date?

The fact is that the percentage of American homes relying only on an over the air signal is low and shrinking. While the vast majority of Americans receive local and network feeds via cable and satellite (and soon via telephone line, cellular, wireless broadband and the internet), relatively few rely exclusively on a free over the air antenna signal.

If there is any doubt about this, consider the total lack of public outcry over the recent announcement that Monday Night Football will be soon available **only** to satellite and cable households!

Of the nearly 110 million American homes with at least one TV, 68% receive a cable signal and 22% receive a DBS signal. Our research shows that roughly 3% receive both cable and DBS. In total, 87% of American homes will have access to cable or satellite (and thus network and local feeds).

This means that if the cut off occurred today, less than 13% of the population of 110 million TV households would not have access to a broadcast signal through cable or satellite (though they could certainly start subscribing).

And this number is shrinking every year. Cable and satellite penetration continues to grow about one to two percentage points annually. Indeed, yesterday Sanford Bernstein said recent data suggest subscribers are growing 3.6 percent annually!

More, the number of non-subscribers only homes may be less relevant as broadband penetration grows. Broadcasters are increasingly providing their content through other means including the Internet and through cell phones. Just recently, Verizon announced that a deal where it would provide NBC's feed over its fiber network.

By the time of the actual cut-off -- combining present adoption trends for cable and satellite and forecasts for uptake of recently announced TV services from telcos like Verizon and SBC, as well as the change in purchasing likely to occur with a hard cut off date -- the number of American homes which would be cut off from any broadcast signal would be significantly less than 13%.

With respect to the people who have neither cable nor satellite, our research shows that this population's decision not to subscribe is generally not made for economic reasons. Instead, these are primarily people who do not watch a great deal of TV.

Those who do not subscribe to cable or satellite watch, on average 30% less television per week than cable and satellite subscribers. Nearly six of ten say television simply is not a high priority for them. Fewer than 30% indicate that insufficient funds play a role in their decisions not to subscribe to television.

But we must acknowledge that a small portion of the population will be adversely affected by an analog cut off. That is why we respect and understand your interest in creating a program whereby these viewers would have access to low cost digital-to analog converters. However, given the rapid growth of alternative forms of media delivery, a government effort to ensure that every American has some type of service after the analog cut off will not be as widespread a challenge as some people believe.

Homes with Satellite or Cable

Broadcasters seek to make a large issue out of the unconnected analog TV sets in households that subscribe to satellite or cable TV. Broadcasters would have you believe that these sets are used extensively with antennas for watching over the air analog signals. In fact, primary

viewing most often occurs on the TV that is connected to pay services. More often, the disconnected TVs are shunted to a less used room and hooked up with a DVD, VCR, or video game player. Indeed, our research shows these sets are used at least half the time for one of many alternate uses. More, as cable companies no longer have a monthly charge for additional outlets, this issue is irrelevent for the 68% of cable homes. In any event, with the analog cut off, these homes will not be disenfranchised, rather, they will simply purchase a D to A converter to continue receiving a broadcast signal, assuming they choose to do so.

Homes with Digital Televisions

Digital television has been adopted twice as quickly as color television. It took color television ten years to achieve 5% penetration from introduction; digital television products are already in 16 million American homes!

Broadcasters focus on the fact that most of these sets are not receiving an over the air signal. The fact is that the majority of these sets are hooked up to cable or satellite where increasingly, the signal is digital. Indeed, 3.5 million homes already have a television set with an integrated tuner or use a set top box to receive an ATSC signal. (Every DBS HD box also has an off-air DTV/HD tuner and is part of this calculation). We estimate that an additional 1.5 million homes are cable households who can receive DTV/HD broadcasts via cable. This means today that some five million American homes receive a DTV signal.

This estimate is consistent with our projections made in 1997 when Congress passed the law focusing on the 2006 deadlines. That same day in 1997 CEA issued a press release projecting that DTV penetration would only be 30% by the deadline. We recently had to scale back our overly optimistic DTV sales projections for 2005. We had based those projections on early FCC action on the tuner mandate petition and extensive promotion of cablecards, neither of which came to pass. We believe that 2005 DTV product sales will actually jump to 14.8 million units from 7.1 million units in 2004.

Future Sales Projections

To assist your focus on a hard cut off date, we are providing integrated DTV shipment estimates (meaning those sets with an integrated DTV tuner) for the next few years based on certain assumptions. Future projections are difficult as they are based on consumers making buying decisions which are affected by a range of factors we can't control, such as the economy, programming options, manufacturer offerings and government action. These forecasts assume the following:

1. **Congress will Pass in 2005 a Hard cut-off Date for Analog Broadcasting**. This is the most important factor, as setting any reasonable date will allow consumers to focus on the inevitable, allow manufacturers to include a warning label for analog sets that is tied to a clear date (manufacturers cannot do that now as the cut off dates are unclear). Further, this will allow strong publicity about the inevitability of the transition.

2. **The FCC will Act Quickly on the CEA Petition to Eliminate the 50% Schedule and Accelerate the 100% Schedule to March 2006 on Mid-Size Television Sets (25 inches to 36 inches).** Again, we recently scaled back our overly optimistic DTV sales projections for 2005. Our initial projections were based in part on early FCC action on the tuner mandate petition and more aggressive promotion and sales of cable card which in turn would drive sales of digital cable ready sets (which contain a tuner as dictated by the standard). Fewer sets with tuners will be sold if the FCC fails to act quickly on the CEA petition to remove the 50% rule OR imposes an earlier deadline for the inclusion of DTV tuners sets. Manufacturers have production cycles and respond to market demands and consumers and retailers are not demanding integrated sets.

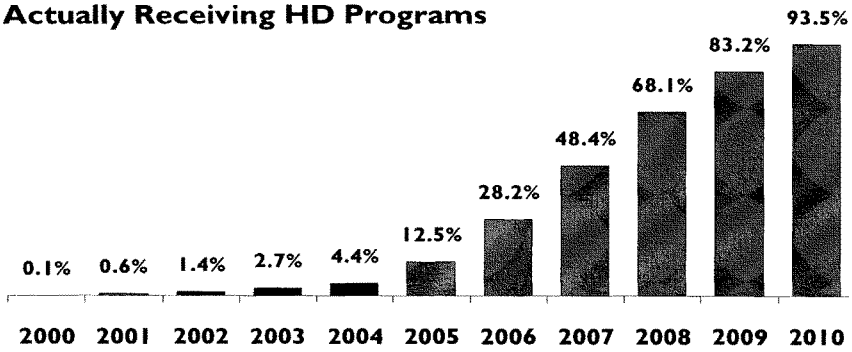
3. **National Groups for Local Broadcasters Will Continue to Do Little or Nothing to Promote Free Over the Air Digital Television.** CEA has spent millions of dollars participating in home shows, with traveling media spokesmen, on brochures, on awards programs, and on creating and updating a website focused exclusively on helping people buy over the air antennas. Our antenna promotion website, www.antennaweb.org, receives 200,000 hits per month and promotes over the air broadcasting. Consumers face many choices and the free market decision to buy a more expensive TV with a digital tuner is a difficult one when broadcasters are quiet and consumers can get the service they want over cable or satellite. If broadcasters devote their considerable muscle to promoting free over the air digital television, then we would expect to see greater consumer interest in and sales of digital televisions with over the air tuners.

Given these assumptions, our sales projections for the next three years follow:

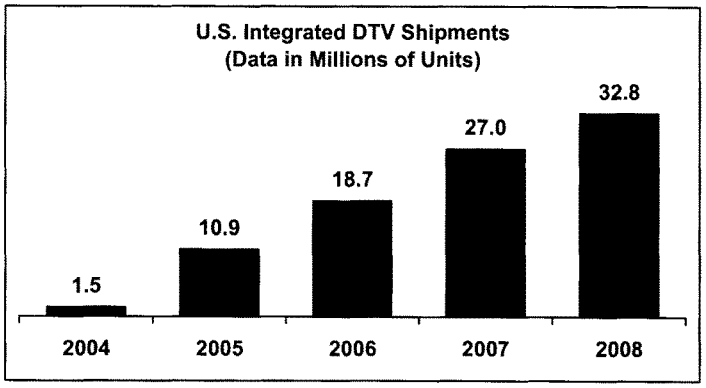
TV Market Forecast
All data is in thousands

	2004	**2005**	**2006**	**2007**	**2008**	**Total**
Analog Only	23306	17657	11284	5254	1441	58943
ATSC Integrated Sets	1500	8857	16659	27011	32761	86788
DTV Monitors	6586	5945	5903	3925	3016	25375
Total TV	31392	32460	33847	36191	37217	171107
DTV Set-top Boxes	475	1676	3029	2763	2418	10362

Percent of Households
Actually Receiving HD Programs



Note:
This chart represents the total reception forecast for HD programming. It includes consumers receiving via an over-the-air source, a cable supplier, or a satellite TV service. It also includes consumers who are receiving an HD signal but are then downconverting the picture for display on either an SD or an ED set.



Please note these estimates show 4 million more units shipping under the assumptions given above than would ship if the FCC does not move on CEA's proposed mandate.

Conclusion

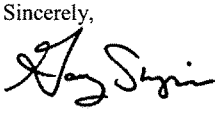
An analog transmission cut off is important for our nation. But, it will have little practical impact on the viewing habits of the vast majority of Americans. As 87% of American homes do not rely on over the air signals for broadcast content, the impact and even the need for televisions with tuners is increasingly questionable.

Indeed, it is remarkable that the organizations of local broadcasters seeking to delay an analog cut off are the same organizations that have refused to educate the public on the existence, much less the value, of free over the air service. In short, while PBS and some local broadcasters have been exemplary in their educational efforts, the national broadcaster organizations have done almost nothing to promote to the public the value of free over the air broadcasting. Instead, they have used a "Washington only" strategy of delaying the cut off date and seeking restrictions on cable, satellite and TV set makers (and now they are going after telephone companies who provide video signals).

The public, not the broadcasters, owns this spectrum. The broadcasters now have twice the spectrum they were originally loaned, and they are clearly unwilling to give it up. The country needs this spectrum, and the 13% (see above) of American homes today (and fewer each year) who rely solely on free over the air broadcasting will understand that they have alternatives once a hard cut off date is set.

The needs of the many are too great, the spectrum is way under-utilized, and the stakes are high. We urge you to stay the course and impose a hard deadline and we stand ready to help you in this noble cause.

Sincerely,



Gary Shapiro
President and CEO

Cc: Members of the House Committee on Energy and Commerce

Press Release Detail

FOR RELEASE

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CEA WELCOMES DTV STAFF DRAFT
Digital Television Transition Act of 2005 Sets Framework to Plan for Completion of DTV Transition

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Arlington, Virginia 5/20/2005

The following statement was issued today by Consumer Electronics Association (CEA) President and CEO Gary Shapiro in response to a staff draft released today by House Commerce Committee Chairman Joe Barton (R-TX) setting a hard date for the end of analog television broadcasting:

"Chairman Barton has taken a critical and necessary step to expedite our nation's transition to digital television (DTV). While we look forward to studying all aspects of the bill in full detail, we have long supported a hard cut-off date for analog broadcasts to provide certainty to manufacturers, retailers, consumers and all others with a stake in the transition. A hard date will foster innovation and strengthen America's security, while completing the DTV transition in a timely and understandable manner. We pledge our full support in working with Chairman Barton, the Committee and other stakeholders as the legislative process moves forward."

About CEA:
The Consumer Electronics Association (CEA) is the preeminent trade association promoting growth in the consumer technology industry through technology policy, events, research, promotion and the fostering of business and strategic relationships. CEA represents more than 2,000 corporate members involved in the design, development, manufacturing, distribution and integration of audio, video, mobile electronics, wireless and landline communications, information technology, home networking, multimedia and accessory products, as well as related services that are sold through consumer channels. Combined, CEA's members account for more than $121 billion in annual sales. CEA's resources are available online at www.CE.org, the definitive source for information about the consumer electronics industry.
CEA also sponsors and manages the International CES - Defining Tomorrow's Technology. All profits from CES are reinvested into industry services, including technical training and education, industry promotion, engineering standards development, market research and legislative advocacy.

CHRISTOPHER COX, *California*
Chairman

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Congress of the United States
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May 24, 2005

The Honorable Joe Barton
Chairman
Committee on Energy & Commerce
2109 Rayburn House Office Building
Washington, D.C. 20515

Dear Joe:

I congratulate you on your outstanding efforts to reclaim for taxpayers the analog TV spectrum. While spectrum allocation policy falls entirely within the jurisdiction of your committee, your success in enacting a hard deadline will carry significant benefits for America's homeland security. I'm proud to co-sponsor your bill and hope that you will call on me if I can offer any assistance in this effort.

While serving on the Energy and Commerce Committee, I came to appreciate the massive cost to our economy of devoting prime spectrum to its least efficient use--a duplicate broadcast signal. In contrast to declining viewer interest in over-the-air television, phenomenal growth in demand for new wireless services suggests that consumers have suffered greatly from this government-imposed shortage of communications bandwidth.

As Chairman of the Committee on Homeland Security, I have come to fully appreciate the much greater cost--measured in lives lost--when first responders are not able to communicate at the scene of a terrorist attack. In numerous discussions with police officers and firefighters from around the country, they have made it clear to me that their top priority is establishing interoperable communications, and that the return of the analog TV spectrum is critical to this effort.

I understand from press accounts that some Members advocate a DTV transition financed by the federal government. I'd like to suggest a better alternative. Let the marketplace handle it.

PRINTED ON RECYCLED PAPER

Since we have traditionally not asked taxpayers to cover the cost of televisions for even the neediest of consumers, it stands to reason that taxpayers should not be asked to cover the cost of an upgrade. More generally, this seems to be an odd moment to subsidize television, given the constant communication from so many of our constituents on the negative impact of TV, and programming which so many Americans find objectionable.

Whatever the cost of the transition, it pales in comparison to the costs that consumers, taxpayers and the economy continue to bear while government policy fences off the most valuable spectrum for all but one favored use. From the standpoint of both homeland security and pro-consumer competition in the new economy, your legislation--and a market-based solution to the task of spectrum allocation--is by far the best course for our nation.

Sincerely,

Christopher Cox
U.S. Representative

CCC:jbf

The Walt Disney Company

Preston Padden
Executive Vice President
Government Relations

Dear Chairmen Stevens and Barton:

ABC would like to take this opportunity to respond to recent allegations that Broadcast Networks use Retransmission Consent to force small cable operators to carry unwanted cable channels owned by the Network or their parent companies.

The ABC Television Network consists of 225 local affiliate stations. ABC is involved in the negotiation of Retransmission Consent for only the 10 stations that we own. We take no part in the negotiation of Retransmission Consent for the remaining 215 ABC affiliate stations. For example, we take no part in the negotiation of Retransmission Consent for any ABC affiliate stations in the State of Alaska.

For Retransmission Consent of the 10 ABC Owned Stations, we offer cable operators the option to pay a standalone cash price without any obligation to carry any other channel. Attached is the Affidavit of Ben Pyne, previously filed in proceedings at the FCC, attesting to our standalone cash offer. Also attached is an analysis by an independent economist attesting to the reasonableness of the standalone cash price for the 10 ABC Owned Stations.

Very truly yours,

Preston R. Padden

Preston R. Padden

EXHIBIT A

DECLARATION OF BEN PYNE

I am Senior Vice President of Affiliate Sales and Marketing for ABC Cable Networks Group. Among other responsibilities, I am responsible for working with the ABC owned television stations to negotiate retransmission agreements for the ten ABC owned television stations.

I attest that, in negotiating for retransmission consent, ABC offers MVPDs a cash stand-alone price for retransmission consent for the ABC owned stations. If the cable operator accepts that offer, that decision results in no additional obligation to carry any Disney/ABC programming. To the extent that any given MVPD decides not to accept ABC's stand-alone cash offer, and instead elects the alternative to negotiate to carry programming, that decision is made by the individual MVPD. We attempt to work with the MVPD to customize a reasonable offer to address their particular needs.

I hereby declare, under penalty of perjury, that, to the best of my knowledge, information, and belief, all of the factual information contained in this Declaration is accurate and complete.

Benjamin N. Pyne
Senior Vice President of Affiliate
Sales and Marketing
ABC Cable Networks Group

February 3, 2003

188

THE FAIR MARKET VALUE

OF LOCAL CABLE RETRANSMISSION RIGHTS

FOR SELECTED ABC OWNED STATIONS

BY

MICHAEL G. BAUMANN

AND

KENT W MIKKELSEN

JULY 15, 2004

ECONOMISTS INCORPORATED

WASHINGTON DC

EXECUTIVE SUMMARY

The analysis examines the fair market value of local cable retransmission rights for ABC owned broadcast television station signals in three DMAs—Philadelphia, Flint, and Toledo.[1] (These stations will be referred to individually as an "ABC Owned Station" and collectively as the "ABC Owned Stations.") The analysis is based on three benchmarks. The first benchmark begins with an estimate of the retail price charged for the ABC Owned Station signals by DirecTV and DISH Network and works back to a corresponding license fee. The second benchmark begins with an estimate of what a local cable operator in each area charges its subscribers for the ABC Owned Station signal, and works back to a corresponding license fee. The third benchmark starts with an econometric analysis of the relationship between the license fees of basic cable networks and what those networks spend on programming, and then estimates the license fees that the ABC Owned Station signals would have commanded, given ABC's expenditures on programming, had they been basic cable networks. Using the average of the estimates produced by the benchmarks in each market, the fair market value of the retransmission right for the ABC Owned Station signals in the markets considered ranges from $2.00 to $2.09 per subscriber per month.

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[1] These markets were selected for analysis by ABC. The three markets include one large market, Philadelphia, and the two smallest markets in which ABC owns stations.

INTRODUCTION

Local broadcast stations, especially network affiliates, are an important part of the services provided by cable systems. Indeed, cable television got its start more than 50 years ago by offering improved reception of local broadcast station signals. Although cable systems now offer many other services, local broadcast station signals remain a key source of consumer demand for cable. This is not surprising. Local broadcast stations carry popular local news, weather and sports programming. Also, the national network entertainment, news and sports programming carried by network affiliates remains among the most popular programming on television. Actual and potential cable subscribers place a high value on this programming.

Cable carriage of local broadcast station signals produces revenues for cable operators. A cable operator may charge a higher subscription price for a package of programming networks if local broadcast station signals are included in the package. Alternatively, at any given subscription price, there will be more subscribers and more subscription revenue if local broadcast station signals are carried. Further, having more subscribers means that the cable operator can generate more revenue from the sale of local advertising and other services. In these respects, local broadcast station signals play a role similar to popular cable networks and other sources of cable content.

In order to generate subscriber and advertiser revenues, cable operators distribute cable networks, such as A&E, CNN, and Discovery, to their subscribers and pay monthly per subscriber fees to cable networks for such rights. Most cable networks sell advertising spots to national advertisers, and some also provide local ad availabilities to cable operators who in turn sell such local advertising spots to local advertisers.

Federal law establishes two methods by which cable systems carry local broadcast station signals—must carry and retransmission consent. Under must carry, cable systems are not required to pay local broadcast stations for the right to distribute the local broadcast station signals that they are required by federal law to carry. However, a local broadcast station may elect to instead exercise its right to grant retransmission consent. Under retransmission consent, cable systems are not required to carry the local broadcast

station's signal, but must negotiate with the local broadcast station if they decide to carry the broadcast station's signal.

Broadcasters and cable operators negotiate retransmission consent agreements under rules established by the FCC. The outcome of such bargaining may result in a complex agreement. Cable operators often choose to provide alternative consideration such as carriage of cable networks that are affiliated with the broadcaster in lieu of cash payment. Because the details of each negotiation vary from one cable operator to another, and because the specific details of these agreements are generally confidential, a market price for retransmission consent rights is not transparent.

The Walt Disney Company requested us to examine two related questions arising from these circumstances. First, what is the relationship between a cash payment that a cable operator might pay for retransmission consent rights and the terms of alternative arrangements to which a local broadcast station owner and a cable operator might agree? As the next section explains, there are several ways that a local broadcast station owner that is affiliated with a cable network or cable networks can be compensated for retransmission consent rights. Second, since the market price for retransmission consent rights is not transparent, what is the estimated fair market price for the retransmission consent rights of the ABC Owned Station signals? By fair market price we simply mean the price that would be observed if retransmission consent rights were traded in cash-only transactions. Using only public or third-party data, we take three approaches:

- First, we observe the retail prices currently charged by DirecTV and DISH Network, two leading satellite operators, for their packages of local broadcast signals in each market, and we work backwards to estimate a license fee for the ABC Owned Station signal that is part of that package. Estimates range from $0.97 to $1.23 per subscriber per month.

- Second, we observe the retail price currently charged by a local cable operator in each of the markets for the tier of programming that includes local broadcast station signals, and we again work backwards to estimate a license

fee for the applicable ABC Owned Station signal, which is part of that tier. This estimate ranges from $1.90 to $3.06 per subscriber per month.

- Third, we observe the relationship between what cable operators in general pay in monthly per subscriber license fees for basic cable networks and the value of basic cable networks as measured by what each spends on programming. After adjusting for the ability of the cable operator to generate revenues from local ad availabilities on certain cable networks, we use the license fee/program cost relationship to estimate what the license fee would have been for the selected ABC Owned Station signals in 2003 if they were basic cable networks. That estimate is $2.27 per subscriber per month.

Taking an average of the benchmark estimates for each market yields a fair market valuation of the retransmission rights for the selected ABC Owned Station signals ranging from $2.00 to $2.09 per subscriber per month.

CASH OR CARRIAGE?

Under the retransmission consent rules, cable operators and direct broadcast satellite distributors (collectively, multichannel video programming distributors or "MVPDs") and local broadcast television stations negotiate the terms under which MVPDs will retransmit the applicable television station(s)'s signal(s). Congress created retransmission consent rights as part of the Cable Television Consumer Protection and Competition Act of 1992. When the first transactions concerning these rights were negotiated, leading cable operators insisted that they would make no cash payments to broadcasters and subsequently initiated discussions related to launching new cable networks as possible consideration for retransmission consent rights in lieu of cash payments. Eventually, agreements were reached between the broadcast networks and the major cable operators that provided for the cable operators to carry various new broadcast network-owned cable programming services in return for retransmission consent rights to local broadcast station signals. Today, cable operators carrying cable networks as consideration for retransmission consent rights is a common practice. The FCC noted this practice in a 2000 order, and also observed that the practice is presumptively lawful.[2]

According to ABC officials, ABC offers cable systems the right to retransmit the signals of its owned stations for approximately $0.70 to $0.80 per subscriber per month. Cable operators usually decline ABC's cash offer and instead negotiate a customized deal that compensates ABC while meeting the operators' particular needs. We understand that ABC is open to any options that provide ABC with fair consideration for its owned station signals, and ABC works with cable operators to determine what form that consideration may take if the cash option is not accepted by the cable operators.

To illustrate, the following are some of the alternatives ABC has used in order to address the particular circumstances of individual operators: (a) a cable operator may

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[2] FCC, First Report and Order, In the Matter of Implementation of the Satellite Home Viewer Improvement Act of 1999 and Retransmission Consent Issues: Good Faith Negotiation and Exclusivity, CS Docket No. 99-363, released March 16, 2000, ¶ 56, point 3.

agree to launch or reposition a cable network to reach more subscribers; (b) a cable operator could extend the term of an existing cable network distribution agreement; and (c) if a cable operator faces capacity constraints in a cable system within an ABC Owned Station's DMA, the operator may agree to launch a cable network outside of the applicable DMA. From an economic perspective, the opportunity to transact in a variety of "currencies" may increase the potential gains to the two parties from a transaction, but it does not alter the parties' respective shares of the gains. Under the various options that ABC offers to cable operators, ABC simply attempts to obtain consideration comparable to the cash option.

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INTRODUCTION

Local broadcast stations, especially network affiliates, are an important part of the services provided by cable systems. Indeed, cable television got its start more than 50 years ago by offering improved reception of local broadcast station signals. Although cable systems now offer many other services, local broadcast station signals remain a key source of consumer demand for cable. This is not surprising. Local broadcast stations carry popular local news, weather and sports programming. Also, the national network entertainment, news and sports programming carried by network affiliates remains among the most popular programming on television. Actual and potential cable subscribers place a high value on this programming.

Cable carriage of local broadcast station signals produces revenues for cable operators. A cable operator may charge a higher subscription price for a package of programming networks if local broadcast station signals are included in the package. Alternatively, at any given subscription price, there will be more subscribers and more subscription revenue if local broadcast station signals are carried. Further, having more subscribers means that the cable operator can generate more revenue from the sale of local advertising and other services. In these respects, local broadcast station signals play a role similar to popular cable networks and other sources of cable content.

In order to generate subscriber and advertiser revenues, cable operators distribute cable networks, such as A&E, CNN, and Discovery, to their subscribers and pay monthly per subscriber fees to cable networks for such rights. Most cable networks sell advertising spots to national advertisers, and some also provide local ad availabilities to cable operators who in turn sell such local advertising spots to local advertisers.

Federal law establishes two methods by which cable systems carry local broadcast station signals—must carry and retransmission consent. Under must carry, cable systems are not required to pay local broadcast stations for the right to distribute the local broadcast station signals that they are required by federal law to carry. However, a local broadcast station may elect to instead exercise its right to grant retransmission consent. Under retransmission consent, cable systems are not required to carry the local broadcast

station's signal, but must negotiate with the local broadcast station if they decide to carry the broadcast station's signal.

Broadcasters and cable operators negotiate retransmission consent agreements under rules established by the FCC. The outcome of such bargaining may result in a complex agreement. Cable operators often choose to provide alternative consideration such as carriage of cable networks that are affiliated with the broadcaster in lieu of cash payment. Because the details of each negotiation vary from one cable operator to another, and because the specific details of these agreements are generally confidential, a market price for retransmission consent rights is not transparent.

The Walt Disney Company requested us to examine two related questions arising from these circumstances. First, what is the relationship between a cash payment that a cable operator might pay for retransmission consent rights and the terms of alternative arrangements to which a local broadcast station owner and a cable operator might agree? As the next section explains, there are several ways that a local broadcast station owner that is affiliated with a cable network or cable networks can be compensated for retransmission consent rights. Second, since the market price for retransmission consent rights is not transparent, what is the estimated fair market price for the retransmission consent rights of the ABC Owned Station signals? By fair market price we simply mean the price that would be observed if retransmission consent rights were traded in cash-only transactions. Using only public or third-party data, we take three approaches:

- First, we observe the retail prices currently charged by DirecTV and DISH Network, two leading satellite operators, for their packages of local broadcast signals in each market, and we work backwards to estimate a license fee for the ABC Owned Station signal that is part of that package. Estimates range from $0.97 to $1.23 per subscriber per month.

- Second, we observe the retail price currently charged by a local cable operator in each of the markets for the tier of programming that includes local broadcast station signals, and we again work backwards to estimate a license

fee for the applicable ABC Owned Station signal, which is part of that tier. This estimate ranges from $1.90 to $3.06 per subscriber per month.

- Third, we observe the relationship between what cable operators in general pay in monthly per subscriber license fees for basic cable networks and the value of basic cable networks as measured by what each spends on programming. After adjusting for the ability of the cable operator to generate revenues from local ad availabilities on certain cable networks, we use the license fee/program cost relationship to estimate what the license fee would have been for the selected ABC Owned Station signals in 2003 if they were basic cable networks. That estimate is $2.27 per subscriber per month.

Taking an average of the benchmark estimates for each market yields a fair market valuation of the retransmission rights for the selected ABC Owned Station signals ranging from $2.00 to $2.09 per subscriber per month.

CASH OR CARRIAGE?

Under the retransmission consent rules, cable operators and direct broadcast satellite distributors (collectively, multichannel video programming distributors or "MVPDs") and local broadcast television stations negotiate the terms under which MVPDs will retransmit the applicable television station(s)'s signal(s). Congress created retransmission consent rights as part of the Cable Television Consumer Protection and Competition Act of 1992. When the first transactions concerning these rights were negotiated, leading cable operators insisted that they would make no cash payments to broadcasters and subsequently initiated discussions related to launching new cable networks as possible consideration for retransmission consent rights in lieu of cash payments. Eventually, agreements were reached between the broadcast networks and the major cable operators that provided for the cable operators to carry various new broadcast network-owned cable programming services in return for retransmission consent rights to local broadcast station signals. Today, cable operators carrying cable networks as consideration for retransmission consent rights is a common practice. The FCC noted this practice in a 2000 order, and also observed that the practice is presumptively lawful.[2]

According to ABC officials, ABC offers cable systems the right to retransmit the signals of its owned stations for approximately $0.70 to $0.80 per subscriber per month. Cable operators usually decline ABC's cash offer and instead negotiate a customized deal that compensates ABC while meeting the operators' particular needs. We understand that ABC is open to any options that provide ABC with fair consideration for its owned station signals, and ABC works with cable operators to determine what form that consideration may take if the cash option is not accepted by the cable operators.

To illustrate, the following are some of the alternatives ABC has used in order to address the particular circumstances of individual operators: (a) a cable operator may

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[2] FCC, First Report and Order, In the Matter of Implementation of the Satellite Home Viewer Improvement Act of 1999 and Retransmission Consent Issues: Good Faith Negotiation and Exclusivity, CS Docket No. 99-363, released March 16, 2000, ¶ 56, point 3.

agree to launch or reposition a cable network to reach more subscribers; (b) a cable operator could extend the term of an existing cable network distribution agreement; and (c) if a cable operator faces capacity constraints in a cable system within an ABC Owned Station's DMA, the operator may agree to launch a cable network outside of the applicable DMA. From an economic perspective, the opportunity to transact in a variety of "currencies" may increase the potential gains to the two parties from a transaction, but it does not alter the parties' respective shares of the gains. Under the various options that ABC offers to cable operators, ABC simply attempts to obtain consideration comparable to the cash option.

ESTIMATED FAIR MARKET PRICE

Using DirecTV and DISH Network prices as a benchmark

DirecTV and DISH Network are the two major direct broadcast satellite (DBS) providers in the United States, with a current combined total of over twenty million subscribers. Legislation enacted in 1999 gave DirecTV and DISH Network the right to carry local broadcast stations. Both companies compete with cable television operators for subscribers, and both carry many of the same networks as cable systems. We therefore assume that DirecTV and DISH Network subscribers are representative of cable subscribers in their valuation of local broadcast signals, and that the relationship between wholesale and retail prices for such programming on DirecTV and DISH Network is indicative of the corresponding relationship for cable systems, and vice versa.

Any subscriber to DirecTV in a market where DirecTV provides local signals can add a package of local broadcast channels for $6.00 per month.[3] DirecTV currently offers such local programming in Philadelphia and Flint.[4] A subscriber to DISH Network in those markets with a local signal package can add the package for $5.99 per month. DISH Network also currently offers a local programming package in Philadelphia and Flint. Given the competitive importance to DBS services of offering local channels, DBS providers may provide these packages at reduced rates to spur subscribership.[5] If so, our estimates based on this benchmark will understate the fair market value of retransmission rights.

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3 Beginning in March 2004, if a subscriber purchases a DirecTV package with local channels, the subscriber gets a $3 bundling discount. But if the subscriber only had Select Choice or some kind of special package or a complimentary package, and wanted to add the local channels, then the additional cost would be $6. See copy of a June 2004 DirecTV monthly statement attached as Appendix A.

4 DirecTV plans to begin offering local signals in Toledo in 2004.

5 The FCC noted that the growth in DBS subscribers is, in part, attributable to the authority granted to them to distribute local broadcast television stations. FCC, *Tenth Annual Report: Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket 03-172, ¶¶8, 65.

In each market, both the DirecTV and DISH Network packages include programming from several local stations. It is unlikely, however, that the signals have equal value, either to subscribers or to DirecTV or DISH Network in attracting subscribers. For purposes of our analysis we assume that the value of the stations included in either the DirecTV or DISH Network local package is proportional to the stations' shares of local audience.[6] Using data from the May 2004 sweeps, we determine the total day viewing share of each programming service included in each market's local channel package.[7] We then compute each ABC Owned Station signal's share of viewing relative to all services in the package.

We attribute to each ABC Owned Station signal a percentage of the retail value of the local channel package based on its relative share of viewing of services in the package. The results are presented in Table 1. The implied retail value for an ABC Owned Station signal ranges from $1.64 to $2.08 based on the DISH Network price and from $1.65 to $2.09 based on the DirecTV price.

Table 1: Estimated retail value of ABC Owned Station signals based on DBS fees

	DISH Network ($5.99/mo.)		DirecTV ($6.00/mo.)	
Market	ABC Owned Station Viewing Share	Attributed Value	ABC Owned Station Viewing Share	Attributed Value
Flint	34.8%	$2.08	34.8%	$2.09
Philadelphia	27.5%	$1.64	27.5%	$1.65
Toledo	n.a.	n.a.	n.a.	n.a.

To derive an estimate of market value for local broadcast retransmission rights, we need to translate this retail value into a corresponding wholesale value or license fee.

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6 Viewers' demand or willingness to pay for programming is not the same as ratings or viewing shares. In theory, programming with a relatively small audience that is intensely interested may command higher revenue than programming that attracts a larger but less interested audience. Lacking direct measures of viewer willingness to pay for individual broadcast networks, we use ratings and viewing shares as an approximation.

7 Underlying data are from Nielsen.

To do this, we make use of the relationship between wholesale license fees and subscriber prices observed for other programming. In 2002, wholesale revenue for premium services was about 59 percent of retail revenue for such services.[8] Applying this percentage implies that the wholesale value to ABC Owned Station signals would range from $0.97 to $1.23, based on both the DISH Network prices and the DirecTV prices. See Table 2. This percentage is equivalent to a retail markup over wholesale of about 70 percent. Since DBS providers would likely apply a very low or no markup to the license fee given the competitive importance of local signals to DBS services, as noted above, the actual retail markup may well be lower than 70 percent and therefore the wholesale values are likely to be higher than estimated here.

Table 2: Estimated wholesale value of ABC Owned Station signals based on DBS fees

Market	DISH Network	DirecTV
Flint	$1.23	$1.23
Philadelphia	$0.97	$0.97
Toledo	n.a.	n.a.

Using the local cable operator's basic tier price as a benchmark

Our second approach to estimating a fair market value for retransmission of the ABC Owned Station signals is to look at the retail price a local cable operator charges for the service tier that includes the ABC broadcast station and then work backwards to an implied wholesale value.[9]

Most cable operators provide a Basic Service Tier that functions primarily as a "reception" package. The tier is typically composed of local broadcast television stations and government access channels. Most likely, as with the satellite local signal packages, this price is below fair market value. Although some cable television prices have recently

[8] Kagan World Media, *The Pay TV Newsletter*, July 31, 2002, p. 3. Kagan estimated that the wholesale percentage of retail revenue was 59.1 percent in 2002 and would be about 59.5 percent in 2004.

[9] The cable operators selected were identified as serving the named city.

been deregulated at the federal level, basic tier prices remain regulated by state and local authorities. Such tiers are often offered at a discount for regulatory or public relations reasons, to satisfy agreements with local agencies or to improve relations with the FCC or franchise authorities. Historically, few cable subscribers opt for only this basic service. Therefore, cable operators lose little by offering a low price. Nevertheless, we assume that the Basic Service Tier price reflects market value. If the retail price is below fair market value, our estimate of the corresponding wholesale price again understates the fair market value of retransmission rights.

We again assume that the value attributable to an individual channel on this tier is proportional to its ratings relative to all the channels on the tier.[10] See Table 3.

Table 3: Estimated value of ABC Owned Station signals based on cable operator fees

Market	Operator	Rate	Number of Channels	ABC Owned Station Viewing Share	Attributed Retail Value	Estimated Wholesale Value
Flint	Comcast	$12.75	19	33.3%	$4.25	$2.51
Philadelphia (19132)	Comcast	$15.60	32	27.5%	$4.28	$2.53
Philadelphia (19102)	Comcast	$20.00	34	25.9%	$5.19	$3.06
Toledo	Buckeye	$12.15	19	26.5%	$3.22	$1.90

Based on the relative share of viewing in each market, approximately 20 percent to 30 percent of the value of the basic service tier is attributable to the ABC Owned Station signal. The retail value attributed to the ABC Owned Station signals ranges from $3.22 to $5.19. We again assume that the wholesale value is 59 percent of the retail value. This implies a wholesale value, or retransmission license fee, ranging from $1.90 to $3.06 for the ABC Owned Station signals.

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[10] See note 6. Many services on the basic service tier have no ratings reported by Nielsen. The absence of ratings data generally implies that the audiences are too small to be measured accurately. We assumed that these services had a zero share.

Using cable network license fees as a benchmark

Our third approach to the question of estimating the fair market value of local cable retransmission rights to the ABC Owned Station signals relies on what cable operators pay for various cable networks. The economic foundation of basic cable networks is the cable operators' ability to distribute cable networks to viewers for monthly subscription fees as well as to deliver audiences to advertisers. Cable operators pay license fees to distribute cable networks, such as ESPN or CNN. These license fees (wholesale prices) are determined by free market competition.

There is a strong correlation between the license fees paid by cable operators to cable networks and the level of programming expenditure by those cable networks. See Figure 1.[11] It is not surprising to find that more popular, expensively-produced cable networks have higher license fees than do less popular cable networks. We rely on this relationship between cable network programming expense and cable network license fees to project the value of broadcast station signal retransmission consent rights based on broadcast network programming expenses.[12]

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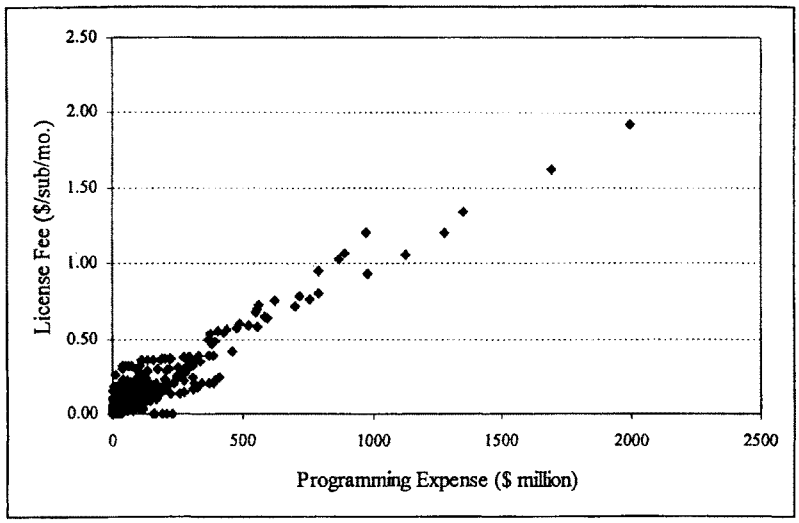
11 Data from Kagan Research, *Economics of Basic Cable Networks 2005: Key Spreadsheets*, June 2004. Programming expenses and license fees expressed in real 2003 dollars using the GDP implicit price deflator.

12 The fee cable operators (and ultimately, viewers) are willing to pay for a program service depends on the quality or attractiveness of the programming provided. Higher perceived programming quality, in turn, is directly related to programming expense. This is so because competition among distributors drives up the prices of the most attractive program services. Therefore, one would expect that license fees per subscriber would increase as programming expenditures increase, other things equal. See B. Owen and S. Wildman, *Video Economics*, 144-150 (1992); B. Litman, *Predicting Success of Theatrical Movies: An Empirical Study*, 16 Journal of Popular Culture 159 (1983); and M. Blumenthal, *Auctions with Constrained Information: Blind Bidding for Motion Pictures*, 70 Review of Economics and Statistics 191 (1988).

Figure 1: Cable network license fees versus programming expenses, 1992-2003
(in real 2003 dollars)



Although very important, program expense is not the only factor that explains the license fees commanded by cable networks. Many cable networks receive not just license fees from cable operators but also advertising revenues from national advertisers. Each cable network must decide how to trade off these two sources of revenue. Other things being equal, if a cable network's per subscriber wholesale license fee is lower, cable operators will provide it to more subscribers than more expensive cable networks. Such more widely distributed cable networks will accordingly be more attractive to advertisers and could result in greater advertising revenue. This tradeoff has become more important as the cable advertising marketplace has grown in the last decade. Our analysis takes this tradeoff into account.

A related issue in understanding cable network license fees is the availability of local advertising spots. A cable operator will be willing to pay more, other things being equal, for a cable network that provides opportunities for the cable operator to sell local advertising spots. In doing this, of course, the cable network gives up the opportunity to

sell such spots to national advertisers. Because local cable advertising has grown in importance, this effect must now also be taken into account for purposes of estimating the fair market value of broadcast retransmission rights.

Kagan Research's publication *Economics of Basic Cable Networks 2005* provides data regarding basic cable networks.[13] For purposes of our analysis, we use data on 94 cable networks for 12 years (not all cable networks were in operation in every year), as depicted in Figure 1.[14] We adjust these data for inflation and then use an econometric technique (regression analysis) to estimate the overall average relationship between license fees and programming expenditures. See Appendix B. We apply the resulting relationship to programming expenditures by the ABC network in 2003 as reported by Kagan Research.[15] The result is an imputed monthly license fee that the ABC network could command as a basic cable network.[16] That number is $3.00 per subscriber per month.

As indicated above, economic analysis of the cable industry suggests that we should also take into account the growing importance of cable advertising revenue. In theory, this should tend to reduce license fees. We account for this by including for each cable network an estimate of its advertising revenue in each year. The result is that the imputed monthly license fee for the ABC network drops to $2.81 for the year 2003.

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13 The FCC regularly relies on the industry statistics and projections by Kagan Research in its rulemaking decisions and analyses of the video industry. See, e.g., FCC, *Tenth Annual Report*, Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, MB-Docket 03-172.

14 The *Economics of Basic Cable Networks 2005* lists subscriber, license fee and programming expense data for 120 cable networks. For various reasons, 26 networks were excluded from the analysis—8 had data starting only in 2004; 9 had only one year of usable data; 3 were premium networks for part of the time period; 5 were Spanish language; and 1 was a delayed feed of another.

15 Kagan Research, "Broadcast Network Economics, 2001-2003," *TV Program Investor*, May 27, 2004.

16 The prediction relates to the average fee paid by all cable operators. To apply this methodology to an individual cable operator we would need to know that operator's license fees for the cable networks it carries and that operator's local advertising revenues per network.

As explained above, cable operators derive local advertising revenue from some cable networks. Broadcast station signals do not afford such an opportunity, and other things being equal this reduces the value of broadcast station signals to cable operators relative to cable networks that offer local advertising availabilities. To account for the value of local advertising availabilities to cable operators, we include a variable that measures the value of local cable advertising attributable to each cable network. The effect of this adjustment is to reduce the imputed value of the ABC network monthly license fee to $2.27 per subscriber.

The preceding analysis may understate the value of the ABC Owned Station signals because it does not take into account the value of local and other non-network programming. Our evaluation of the ABC network if it were a basic cable channel omits any consideration of the local content of the ABC stations' signals. The cable networks used to estimate the value of ABC retransmission rights generally do not offer local content. If it were possible to take this into account it would likely increase the license fee that an ABC Owned Station signal could command above the value associated with the ABC network programming.

CONCLUSION

Table 4 summarizes the estimated values of the ABC Owned Station signals from each of the three methods.

Table 4: Summary of retransmission value estimates

Market	DBS	Cable	Regression	Average
Flint	$1.23, $1.23	$2.51	$2.27	$2.00
Philadelphia	$0.97, $0.97	$2.53, $3.06	$2.27	$2.01
Toledo	n.a.	$1.90	$2.27	$2.09

If we give the average value of each method's estimate obtained within a market equal weight, we obtain the average valuation reported in the last column of Table 4. Using these averages, the fair market value of the retransmission right for the ABC Owned Station signals in the markets considered ranges from $2.00 to $2.09 per subscriber per month.

Appendix A: Sample DirecTV Monthly Statement

View Statements
Payment History

Customer Profile
Payment Profile
Terms and Conditions
Logout

Monthly Statement

Billing Address	Service Address:
[redacted]	[redacted]
[redacted]	[redacted]
N	HERMOSA BEACH, CA
HERMOSA BEACH, CA	90254[redacted]
90254[redacted]	
[redacted]	

[redacted] Date Due	[redacted] Account Number	[redacted] Amount Due
Not Due	813837684	No payment due

[redacted]

Bill Statement Date	Previous Balance	0.00
06/09/2004	(-) Payments and credits	15.98
	(+) Current charges and taxes	15.98
	= AMOUNT DUE	$0.00

[redacted]

Access Card	Start	End	Description	Amount
			Previous Balance	0.00
	06/09/04		Payment - Thank You - VISA	- 15.98
1405-353192			***Subscriptions***	
	06/08/04	07/07/04	Premier Bonus: You Save $4.99 DIRECTV DVR	0.00
	06/08/04	07/07/04	Complimentary TOTAL CHOICE PREMIER	0.00
	06/08/04	07/07/04	Monthly Your Local Channels	6.00
1382-142063			***Subscriptions***	
	06/09/04		Additional Receiver	4.99
1390-093225			***Subscriptions***	
	06/09/04		Additional Receiver	4.99
			AMOUNT DUE	$0.00

Appendix B: A statistical model of television network license fees

The fees MVPDs (and ultimately, viewers) are willing to pay for programs depend on the quality of the programs provided. Higher perceived program quality, in turn, is directly related to program expense. Therefore, one would expect that license fees per subscriber would increase as program expenditure increases.[17]

An appropriate statistical model relates cable network license fees to their main determinants, program expenditures and network advertising revenues. Once this relationship is estimated, the estimated model predicts a fair market value fee for the broadcast networks. The general form of the statistical model is as follows:

$$\text{Fee}_{it} = \beta_0 + \beta_1 \bullet \text{Program Expense}_{it} + \beta_2 \bullet \text{Advertising Revenue}_{it} + \beta_t \bullet \text{Year Dummy} + \varepsilon_{it}$$

where Fee is the average per-subscriber per-month licensing fee, Program Expense is the annual program expenditure, Advertising Revenue is the annual net advertising revenue, ε is a statistical error term, subscript i indicates network i, and subscript t indicates year t. The model allows for individual year-specific effects, β_t.

Two changes were made to this general form for the final version of the regression. First, since the license fee may depend on the ability of the cable operator to insert local advertising, a variable was included to account for local cable advertising revenue attributable to each network.[18] In addition, the intercept term, β_0, is allowed to

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17 Data on license fees, program expenditures and the number of subscribers for 94 basic cable networks are obtained from Kagan Research, *Economics of Basic Cable Networks 2005: Key Spreadsheets*, June 2004. While Kagan provides data for 120 cable networks, 26 networks were excluded from the analysis. See footnote 13.

18 Total local cable advertising revenue is from Paul Kagan Associates, *The Kagan Media Index*, September 30, 2000, and *Kagan Media Money*, August 29, 2003. The percentage of local ad revenue attributable to each cable network is from "Average Share of Local Cable Ad Revenue by Network," Paul Kagan Associates, *Broadband Advertising*, December 13, 2001. Data on the share of local cable ad revenue were available only through 2000. Shares for 2001, 2002, and 2003 are assumed to be the same as in 2000.

vary by network, using the assumption that the intercept will be a function of the average program expenditure of the network over the observed period.

The equation estimated is

$$\text{Fee}_{it} = \beta_0 \bullet \text{Average Program Expense}_i + \beta_1 \bullet \text{Program Expense}_{it}$$
$$+ \beta_2 \bullet \text{Advertising Revenue}_{it} + \beta_3 \bullet \text{Local Advertising Revenue}_{it}$$
$$+ \beta_t \bullet \text{Year Dummy} + \varepsilon_{it}$$

where Average Program Expense is the average program expense over the period for which there exist data for the network and Local Advertising Revenue is the average per-subscriber per-month local advertising revenue.

All variables are expressed in real 2003 dollars, using the GDP implicit price deflator. Standard (OLS) estimation of the model produces the following results:[19]

Model estimation results

F: 431.4		Pr > F: <.0001		
R^2: 0.9007		Root MSE: 0.0574		
Parameter	Estimate	T-value for H_0:Parameter=0	Pr > |T|	Std. Error of Estimate
β_0	0.0001765	4.74	<.0001	0.0000372
β_1	0.0009072	26.55	<.0001	0.0000342
β_2	–0.0003077	–12.35	<.0001	0.0000249
β_3	0.3718	8.57	<.0001	0.04341
β_{2003}	0.05161	8.34	<.0001	0.00619

[19] The last term in the model is an error term, which is the difference between the predicted results and the actual observation. OLS, ordinary least squares, is a procedure that minimizes the sum of the squares of the error terms—hence, the phrase "least squares." The OLS estimator is a standard statistical procedure that gives the best, straight-line, unbiased estimate of the relationship between the variables.

From the model results, it is possible to construct an equation that estimates the free market value of retransmission of the ABC Owned Station signals. For the program expense of the ABC Owned Stations we use the program expense of the ABC network. This is conservative since it ignores both expenditures on and the nature of local news, local sports, other locally originated programming and syndicated programming on the stations. ABC's programming expenditure for 2003 was $3,010 million and its net advertising revenue in 2003 was $3,169 million.[20] ABC's average annual real programming expenditure from 1992 through 2003 was $2,624.9 million.[21] Using these values gives an estimated license fee of $2.27 per subscriber per month.[22]

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20 "Broadcast Network Economics, 2001-2003," Kagan Research, *TV Program Investor*, May 27, 2004.

21 "Broadcast Network Economics, 1991-1993," Paul Kagan Associates, *TV Program Investor*, February 28, 1994; "Broadcast Network Economics, 1993-1998," Paul Kagan Associates, *TV Program Investor*, April 15, 1999; "Broadcast Network Economics, 1997-1999," Paul Kagan Associates, *TV Program Investor*, April 20, 2000; "Broadcast Network Economics, 2000-2002," Kagan World Media, *TV Program Investor*, June 26, 2003; "Broadcast Network Economics, 2001-2003," Kagan Research, *TV Program Investor*, May 27, 2004.

22 The 95 percent confidence interval on this estimate is plus or minus 19¢.

CTIA
The Wireless Association™

Expanding the Wireless Frontier

Steve Largent
President/CEO

May 26, 2005

The Honorable Joe Barton
Chairman
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

CTIA-The Wireless Association™ commends your strong leadership to secure a hard date for the transition to Digital Television (DTV). CTIA supports the enactment of a hard date as included in the just released staff discussion draft. Further delay of the transition will be a detriment to America's public safety entities, consumers and the economy.

A national hard date to conclude the transition would facilitate the availability of valuable and unencumbered spectrum in the 700 MHz band for public safety and commercial uses. Since 1997, public safety entities have waited for access to this spectrum. In the wake of the terror attacks of September 11, 2001, the report by the National Commission on Terrorist Attacks on the United States recommended the "expedited and increased assignment of radio spectrum for public safety purposes." The Commission's final assessment declared that the inability of multiple law enforcement agencies in multiple jurisdictions to communicate at the sites of the attacks was a major failing. A hard date will finally release this spectrum to public safety entities and will help to ensure the safety of all Americans.

In addition to public safety needs, increasing consumer demand for advanced wireless services requires spectrum for commercial uses. The convergence of voice and data is rapidly emerging on wireless devices – including downloading ringtones; sharing family photos; utilizing location services; viewing videos and playing MP3 files and games. Spectrum is needed to deliver these and other advanced wireless services to consumers, as demand will only continue to grow. A national hard date to conclude the transition will bring certainty to the marketplace while providing wireless carriers and manufacturers a definitive timeline to develop the necessary equipment to continue to offer advanced wireless services.

CTIA looks forward to working with you and members of the Committee as you develop legislation that expedites the digital television transition for the betterment of this nation and its citizens.

Sincerely,

Steve Largent

Steve Largent

1400 16th Street, NW Suite 600 Washington, DC 20036 Main 202.785.0081 Fax 202.785.0721 www.ctia.org

THE HIGH TECH DTV COALITION

Alcatel • Aloha Partners • AT&T • Dell • Cisco Systems • IBM • Intel • Microsoft • Qualcomm
Texas Instruments • T-Mobile • Information Technology Industry Council
National Association of Manufacturers • National Telecommunications Cooperative Association
Semiconductor Industry Association • TechNet
Rural Telecommunications Group • Business Software Alliance
Organization for the Promotion and Advancement of Small Telecommunications Companies

May 26, 2005

The Honorable Joe Barton, Chairman
House Committee on Energy and Commerce

The Honorable John Dingell, Ranking Member
House Committee on Energy and Commerce

The Honorable Fred Upton, Chairman
Subcommittee on Telecommunications
and the Internet

The Honorable Ed Markey, Ranking Member
Subcommittee on Telecommunications
and the Internet

Dear Sirs,

The High Tech DTV Coalition congratulates this Committee on its efforts to bring the digital television transition to a successful conclusion. The time has come – in fact, it is long overdue -- for Congressional action to establish a hard date for the digital television (DTV) transition. Setting a date certain is simply the right thing to do – for American consumers, for public safety, and for the thousands of high-tech jobs that will be created once the logjam is broken on the now-underutilized 700 megahertz spectrum. The discussion draft bill is a major step towards attaining benefits for all stakeholders.

Contrary to recent ads placed by broadcasting interests, the DTV transition is not about depriving Americans of access to television. It is about providing them access to clearer, sharper and better television. It is also about providing them with an entirely new generation of wireless broadband telecommunications and enhanced public safety services in the 700 MHz band. In other words, the DTV transition is about the future – of broadcasting, telecommunications and our own safety as a nation.

Americans have waited long enough for this future to arrive. Congress set this transition in motion nearly two decades ago. The members of this Coalition are responding to the opportunity to pioneer new wireless services, as Congress foresaw. The certainty afforded by a hard date for the DTV transition is now absolutely vital for these companies to move forward with business plans and consumer education initiatives. As Congress contemplated, the 700 MHz spectrum will benefit Americans in numerous ways:

- In the development of innovative wireless broadband Internet and voice services at competitive prices;

- In lower network build-out costs, allowing the extension of broadband networks far into under-served rural areas;
- In upgrades of vital public safety communications systems; and
- In a commercial auction of spectrum that will bring between $20 billion and $30 billion into the U.S. Treasury.

The Draft Bill is a Major Step Forward

The DTV transition is inevitable. It is already happening. The only questions now are when the now-fallow analog spectrum will be freed up for productive use, and how well this country can organize and implement a transition plan for all consumers. The High Tech DTV Coalition believes this discussion draft bill begins to answer both questions.

First, the bill enshrines a hard date as national law. The Coalition believes this is a vital ingredient to any DTV legislation. Only a date *certain* provides the *certainty* to stimulate business planning and capital formation needed to generate interest in the eventual auction of 60 MHz of spectrum for commercial wireless networks. Similarly, certainty is needed to plan for the upgrades that our nation's first responders can make in the interoperability and bandwidth of their public safety communications systems.

Second, this bill emphasizes consumer education, which must be at the heart of the transition's successful conclusion. The vast majority – by some studies, more than 85 percent – of Americans are receiving cable TV and satellite signals. But for those households that still rely on analog broadcasts to receive television service, it is important to establish and vigorously pursue a nationwide effort to alert them to the timetable for purchasing digital TV receivers and obtaining converter boxes. This public awareness campaign will then stimulate a declining-cost market for this equipment. In addition, this Coalition has supported consideration of implementation support mechanisms, if Congress deems them necessary, and it will continue to do so.

Delay Does Not Help Consumers

The time has past when further delay tactics could legitimately substitute for reasoned public policy on this issue. The only "snow job" being perpetrated about the DTV transition is the void of solutions and proposals on this DTV receiver issue coming from the National Association of Broadcasters. The broadcasters have had nearly two decades to prepare for the day, mandated by Congress, when they would have to relinquish their analog spectrum for the public's greater benefit. What they have to offer now is the blank screen that serves as the centerpiece of their current advertising campaign.

This Coalition does not want to frighten consumers; it wants to educate them. Now is the time for all stakeholders to come to the table with creative solutions to the challenges at hand. That is what will keep the transition on a productive and successful path to its conclusion. When Congress acts to provide a closing date for the transition, this Coalition pledges to work with Congress, the Federal Communications Commission, broadcasters and consumer groups to focus implementation efforts on that date. In the interim, the Coalition

pledges to continue supporting a hard date and working to form a bipartisan consensus around implementation issues. The Coalition is investing its resources in finding potential solutions for consumers, not in advertising to delay those solutions.

The Coalition looks forward to participating in the ongoing discussions regarding these issues. More than that, however, the Coalition's members vitally and urgently look forward to getting on with the business of innovation in communications equipment and services. This Coalition's membership does not consist of what the recent NAB ad termed "foreign electronics manufacturers." Rather, it represents the backbone of the American communications and computing industries, the drivers of the 21st century U.S. economy. The Coalition continues to believe that all stakeholders stand to benefit from an early and successful conclusion of the DTV transition, and it pledges to work with this Committee to achieve that goal.

THE HIGH TECH DTV COALITION

Public Knowledge

Re: The Transition to Digital Television

Dear :

Public Knowledge writes in support of efforts to end the digital television transition with a hard deadline for the return of the so-called "analog" spectrum. Public Knowledge believes that the benefits to consumers of the returned spectrum will far outweigh the inconvenience and cost of the end of the digital transition, and that Congress should recognize that while there will be some bumps in the road toward the transition for consumers, none are insurmountable.

Completing the transition to digital television is vitally important for the economic and social well being of this country. While some have derided calls to speed the transition to digital television as a mere spectrum reclamation project, reclaiming that spectrum has undeniable and very palpable public interest benefits. These include the ability to vastly improve current licensed and unlicensed wireless telephone and wireless broadband services, including:

- permitting interoperability among local and national public safety and law enforcement personnel and enabling end users to send and receive video, pictures, data and phone calls. This will allow public safety officials to better communicate among themselves and with citizens in case of local and national emergencies;

- filling in cellphone "dead zones" where signals routinely get dropped; and

- providing wireless "last mile" Internet connections that can compete with copper-based DSL and coax-based cable modem services. These more powerful and lower cost connections would improve Internet access for health care agencies, schools and people in underserved areas such as rural and poor communities.

The higher quality and lower priced broadband services that the returned spectrum will facilitate will undoubtedly speed broadband adoption in the United States, which in turn will result in a citizenry that is better educated and better able to compete in today's information economy. The U.S. currently ranks 16th in the world in broadband adoption, and the near-term return of the analog spectrum could provide the boost this country needs to improve that ranking significantly.

Public Knowledge believes that the main factor that will spell the difference between a relatively smooth and difficult digital TV transition is public education. It is quite clear that many consumers do not know that there is a possibility that their analog

television sets will cease receiving broadcast television at sometime in the near future. Part of the reason for this is that the broadcast industry has done little, if anything, to promote the transition and the value of free, over-the-air digital broadcasting. Broadcasters must commit to real and substantial consumer education, including public service announcements and extended news coverage; if they do not commit to such an education program, Congress should consider mandating that broadcasters provide it. A hard date also gives the consumer electronics industry the information they need to effectively label television sets. The date most recently mentioned as the analog cut off date -- January 1, 2009 -- should give broadcasters, consumer electronics manufacturers, retailers and consumer advocates plenty of time to educate consumers, but they must do so starting now. Waiting until the waning moments of the transition to educate consumers will only cause panic and confusion.

Public Knowledge believes that the vast majority of consumers will do what is necessary to preserve their broadcast service once they understand that they must do something affirmative, and are educated about what exactly they must do. To the extent that Congress believes that it should provide some support for adoption of converter boxes for those who do not, or cannot afford to, receive digital TV signals, Public Knowledge would urge that such a subsidy be for a limited time (for example, six months prior and six months after the transition), be easy to administer, and that it involve some affirmative activity on the part of the consumer. This activity could include, for example, filling out a simple application or providing a small ($10-$15) upfront payment. However, simply placing boxes or vouchers in every mailbox invites fraud and is a waste of taxpayer dollars. In addition, broadcasters and others may have market incentives to provide free or low cost boxes to consumers -- for example, broadcasters cannot charge premium rates for advertising unless they can demonstrate universal coverage.

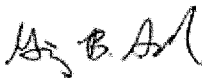
We emphasize, however, that ***Public Knowledge's core interest is in the swift return of the spectrum*** -- so that the ultimate resolution of the converter box subsidy or any other related issue is of secondary importance. There is more than one way to facilitate a final transition to digital broadcast television, but any successful measure must include setting a hard date and a pro-active consumer education program. While we recognize that there are some economic and cultural differences, the transition to digital television in Berlin, Germany, is nonetheless an instructive example of how the transition can be completed with minimal consumer disruption. Consumers were informed early and often about the analog cut-off and were given several concrete options to transition. Those unable to purchase a converter box were given a subsidy. And in August 2003, analog stations in Berlin went dark with barely a complaint.

We believe that with pervasive consumer education and limitations on expenditures of taxpayer dollars, Congress can similarly make the transition to digital television a non-event. Public Knowledge will pledge to do its part to educate consumers about the coming digital TV transition, but no entity with a stake in the DTV transition

has the reach and influence of television broadcasters. To the extent that the public has given broadcasters an interest-free "loan" of billions of dollars of public spectrum to transition to digital TV, the least broadcasters can do is provide the public with the information they need to make the transition a smooth one.

We look forward to working with you to bring a near-term, consumer-friendly end to the digital television transition.

Sincerely,



Gigi B. Sohn
President

Contact: Art Brodsky

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For Immediate Release
June 15, 2005

Public Knowledge Supports 'Hard Date' for Return of Digital TV Spectrum

Public Knowledge, the Washington D.C.-based advocacy group, told senior legislators today that Congress should set a deadline for having broadcasters return spectrum now being used for "analog" television broadcasts.

In a letter sent to the leaders of the House and Senate Commerce Committees, and the House Subcommittee on Telecommunications and the Internet, Public Knowledge President Gigi B. Sohn wrote that, "Completing the transition to digital television is vitally important for the economic and social well being of this country."

The returned spectrum could be used to help public safety and law-enforcement personnel to communicate, to fill in cellular phone coverage and to provide another competitor for high-speed Internet services to consumers. The Jan. 1, 2009 date frequently mentioned for an analog cutoff should give everyone involved time to educate consumers about the transition to digital over-the-air television.

Broadcasters should have a significant responsibility to provide public education on the transition, Sohn said, saying that the "main factor that will spell the difference between a relatively smooth and difficulty digital TV transition is public education." She noted the broadcast industry "has done little, if anything," to promote the transition," and suggested that if broadcasters don't commit to an education program, "Congress should consider mandating that broadcasters provide it."

Acknowledging that there are a variety of issues surrounding the transition, such as the potential need for a subsidy program for digital-to-analog converter boxes, Sohn said that "Public Knowledge's core interest is in the swift return of the spectrum," and that the ultimate resolution of the subsidy for converter boxes or other issues "is of secondary importance."

The letter was sent to House Energy and Commerce Committee Chairman Barton (R-Tex.), ranking member Dingell (D-Mich.), Subcommittee Chairman Upton (R-Mich.) and ranking member Markey (D-Mass.) on the House side. On the Senate side, the letter was

sent to Senate Commerce Committee Chairman Stevens (R-Alaska) and ranking member Inouye (D-Hawaii):

Here is the link for the letter on our Web site:
http://www.publicknowledge.org/news/letters/dtv-transition-deadline-20050615

The text is also below:

Re: The Transition to Digital Television

Dear :

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- filling in cellphone "dead zones" where signals routinely get dropped;

  and

- providing wireless "last mile" Internet connections that can compete with copper-based DSL and coax-based cable modem services. These more powerful and lower cost connections would improve Internet access for health care agencies, schools and people in underserved areas such as rural and poor communities.

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We look forward to working with you to bring a near-term, consumer-friendly end to the digital television transition.

Sincerely,

Gigi B. Sohn

President

Public Knowledge is a public-interest advocacy and education organization that seeks to promote a balanced approach to intellectual property law and technology policy that reflects the "cultural bargain" intended by the framers of the constitution. More information available at: http://www.publicknowledge.org

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BUILDING GLOBAL COMMUNICATIONS

May 24, 2005

The Honorable Joe Barton
Chairman, House Energy and Commerce Committee
U.S. House of Representatives
2109 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Barton:

The Telecommunications Industry Association (TIA) would like to express our gratitude for your leadership in releasing a draft of digital television (DTV) transition legislation late last week. This issue has been debated for decades, and TIA supports your resolve to continue the momentum towards its resolution. The availability of additional spectrum will allow for the emergence of innovative products and services, effectively impact public safety, and stimulate jobs and the U.S. economy.

As you know, TIA is a leading trade association for the information and communications technology (ICT) industry, with 600 member companies that manufacture or supply the products and services used in global communications. TIA represents its members on the full range of public policy issues affecting the communications industry, forges consensus on industry standards, and produces and co-owns SUPERCOMM, the world's largest annual communications exhibition and conference.

Among their numerous lines of business, TIA member companies design, produce and deploy terrestrial and satellite wireless network and end-user equipment. As a result, TIA has a substantial interest in policy decisions regarding the use of the television broadcast spectrum. In addition to the commercial segment of the market, TIA member companies also manufacture much of the communications equipment used by our nation's first responders. In fact, TIA has published the standards that will ensure state-of-the-art, interoperable, digital communications for public safety agencies.

Our members remain confident that digital-to-analog converter boxes will be widely available and reasonably priced in time to meet the transition deadline. Their availability will ensure that Americans with analog televisions will not experience a disruption or reduction in picture quality of the broadcast TV services they have grown to expect.

We applaud your efforts and offer our support for your proposed legislation. Please feel free to contact me if you have any questions at (703) 907-7701.

Sincerely,

Matthew J. Flanigan
President

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USA

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www.tiaonline.org

Fax:4102697523 Sep 12 2005 11:14 P.01

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VIA FACSIMILE: (202) 225-3052

September 12, 2005

The Honorable Joe Barton
United State House of Representatives
2109 Rayburn Office Building
Washington, DC 20515

Dear Representative Barton:

On behalf of the more than 40,000 state troopers and highway patrolman served by the National Troopers Association, we urge you to adopt legislation this year that provides our agency and all public safety agencies a December 31, 2006 date certain access to the 700 MHz spectrum that Congress and the FCC set aside for this use back in 1997.

As you are aware, there are about 75 television stations across the country that are impacting access to advanced communications and improved interoperability by public safety on a nationwide basis. These few stations are preventing access in the largest metropolitan areas, where public safety has the greatest need for this spectrum, and where we collectively serve over fifty percent of this country's citizens. Until we get access to this spectrum that was allocated to us over seven years ago, public safety agencies we represent, as well as others, will not be able to expand our current congested radio systems, activate fully interoperable radio communications, and implement new mission critical applications such as high speed data, imaging and video transfers to and from our first responders in the field.

We continue to increase the responsibilities of our first responders. They not only serve and protect the lives and property of our citizens, but now are this nation's first line of defense in protecting our citizens from future terrorist attacks. Communications are even more critical today for our first responders to not only respond to incidents but to prevent new threats from occurring in the first place. Successful prevention requires greater cooperation, information sharing, interoperability and access to advanced communications. Access to the 700 MHz band is absolutely vital for public safety.

In their sense of the Congress statement included in the Intelligence Reform and Terrorism Prevention Act of 2004, Congress recognized the need to address a date certain TV clearing date in this year's legislative agenda.

On behalf of the first responders of the National Troopers Association, as well as all first responders across this country, we urge you to fulfill this promise and mandate a date certain of no later than December 31, 2006 to finally make the 700 MHz band available for public safety use. We must have access to this spectrum on a nationwide basis to protect the lives and property of our citizens as well as our responders.

Respectfully Yours,

Casey Perry
Chairman

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