

1 | would not give complete hope to them, and someone else
2 | suggested that, Mr. Carnes again, said waste no time in
3 | approval. You had stated in your testimony that any group,
4 | and you've heard all of the great things that the allegedly
5 | the Grand Alliance can do in terms of adopting to both of the
6 | kind of scanning formats. Do you agree with what they can do
7 | in both of the scanning formats, a quick answer and I want to
8 | ask you something that you put in your testimony?

9 | MR. HOROWITZ: I've seen it demonstrated across the
10 | street.

11 | COMMISSIONER BARRETT: That's not what I asked you,
12 | about what you saw demonstrated.

13 | MR. HOROWITZ: I agree that they both technically.

14 | COMMISSIONER BARRETT: Then you had stated in your
15 | testimony that any one group of broadcasters could adopt a
16 | proprietary access -- standard and then effectively foreclose
17 | other broadcasters in the area from reaching the viewer. Can
18 | you elaborate on that, if, in fact, you agree you don't have
19 | any problem with interoperability, any problem with access
20 | with the Grand Alliance's scheme?

21 | MR. HOROWITZ: I think, as the core system, as I
22 | stated in my testimony, is an open technology and it's an open
23 | system. The issue comes when you add a proprietary or closed
24 | conditional access on the cription system on it that is not
25 | available to every other broadcaster in that same market. So

1 | you could have two channels of a licensee broadcasting a
2 | proprietary way, would install a slew of consumer boxes in
3 | that particular market. Along comes another broadcaster,
4 | wants to transport also secured programming into that
5 | household and he's stopped, and he's stopped because he can't
6 | get access to that closed conditional access system and he's
7 | stopped because the consumer now would have to go out and buy,
8 | yet, another device to put this --

9 | COMMISSIONER BARRETT: Is it a question of access
10 | and interoperability?

11 | MR. HOROWITZ: It's a question of access and
12 | interoperability to that proprietary piece of closed
13 | technology.

14 | COMMISSIONER BARRETT: How do we insure the maximum
15 | aspect in terms of interoperability?

16 | MR. HOROWITZ: I think that the Commission has to
17 | recognize and does recognize that there are these potential
18 | barriers where the roads can be closed and in your proceedings
19 | to develop the rules, you need to recognize that there is a
20 | chance that that barrier could be established and you need to
21 | basically specify or require interoperable systems, that one
22 | system can interopt with the next.

23 | COMMISSIONER BARRETT: Do those -- does the further
24 | standardization or certain standards delay what Mr. Keyworth
25 | and Mr. McKinney and Mr. Carnes talk about we ought to be

1 moving toward as rapidly as possible or does that delay? Mr.
2 Carnes has just suggested we need to waste no time in approval
3 and get a headon?

4 MR. HOROWITZ: I believe it would not delay it if
5 the FCC Commission is specific and direct now, that when
6 you're --

7 COMMISSIONER BARRETT: What does that mean, I'm
8 sorry?

9 MR. HOROWITZ: Meaning that you require
10 interoperability today, that you recognize that -- you don't
11 want to create an environment where one broadcaster or one
12 delivery system can block the transportation or transmission
13 of another one's system into that consumer's home.

14 COMMISSIONER BARRETT: But I -- you don't assume
15 that's a given from our perspective as a matter of public
16 policy that we want interoperability and access?

17 MR. HOROWITZ: I think it's a given that you want
18 it, I think you have to state it because I don't think it's a
19 given and the marketplace will respond to it.

20 COMMISSIONER BARRETT: Do you have any instances
21 where such a practice is prevalent in the cable or DBS
22 industry, where one cannot have access interoperability in
23 this sense?

24 MR. HOROWITZ: Well, direct TV, consumer has gone
25 out and bought an \$800 piece of equipment which is only usable

1 to receive signals off the direct TV satellite. When Echo
2 Star goes up --

3 COMMISSIONER BARRETT: But they can receive
4 programming from somebody else's satellite, though.

5 MR. HOROWITZ: No, sir.

6 COMMISSIONER BARRETT: If they have a different
7 satellite than direct TV?

8 MR. HOROWITZ: No, sir. The direct TV conditional
9 access system is a closed system. You cannot use it unless
10 you --

11 COMMISSIONER BARRETT: If they have other choices of
12 systems as opposed to direct TV and their satellite, that's my
13 point.

14 MR. HOROWITZ: If there's another direct --

15 COMMISSIONER BARRETT: If I want Reed Hundt's
16 satellite as opposed to direct TV, can I get that?

17 MR. HOROWITZ: If you want to buy another box, you
18 can get it.

19 COMMISSIONER BARRETT: That's not what I asked you.
20 Okay, thank you very much, Mr. Chairman.

21 COMMISSIONER HUNDT: Commissioner Ness.

22 COMMISSIONER NESS: Thank you, Mr. Chairman. Mr.
23 Horowitz, following up on this, if the Grand Alliance system
24 is adopted, TV sets would be able to receive that standard.
25 How would broadcasters then be able to establish this

1 | bottleneck, you're suggesting that they would take some of
2 | their signal, break it up, transmit several programming
3 | streams, block off some of them, through encryption and
4 | therefore a consumer, having acquired a box to receive that
5 | now pay programming, would not be able to receive anyone
6 | else's over-the-air programming?

7 | MR. HOROWITZ: They could receive anyone else's
8 | over-the-air programming that has been broadcast in the clear.
9 | However, if another broadcaster was broadcasting some other
10 | closed programming that was also encryptive, then the consumer
11 | needs the keys to unlock it. Well, if the second system of
12 | keys is different than the first system of keys, in other
13 | words, you have two locks, then you need, in effect, two
14 | boxes. What I'm advocating is that we recognize that there
15 | will be both open and closed products offered and that we just
16 | make sure that one doesn't lock out the other.

17 | COMMISSIONER NESS: Okay. Mr. Keyworth, pardon, I'm
18 | following up on keys, I'm sorry. Is there some benefit to
19 | manufacturers and consumers in knowing that certain frequency
20 | video would be received in a certain format and on another
21 | frequency cellular telephones, for example, would work? If we
22 | -- that is to say, if we mix all of the services on all of the
23 | spectrum, how would a TV set manufacturer or cell phone maker,
24 | for example, know what frequencies to use to make it work?

25 | MR. KEYWORTH: First, if -- your first question is,

1 | if you know what the frequency is ahead of time, of course,
2 | makes the technical challenge simpler. However, it is a basic
3 | principle of digital technology that the cost of the
4 | technology or computing power falls faster than any technology
5 | we have ever experienced with, that is what is unique about
6 | the digital industry. To make a translator that will
7 | basically heal or bridge a mismatch, is, in fact, done all the
8 | time. I routinely watch television, NTSC television, on my
9 | computer display through \$145 card, which, in a few years,
10 | will be a \$5 chip on a motherboard. So, yes, I agree there,
11 | it is simpler. On the other hand, the power of a collapsing
12 | computer cost is not to be overlooked.

13 | COMMISSIONER NESS: Um-hum. Mr. McKinney, do you
14 | have a response to that?

15 | MR. MCKINNEY: Yes, I would also point out that
16 | there are additional problems than just the question of
17 | frequencies, how does the television channel know where to
18 | tune, how does the receiver know where to tune, that's a
19 | critical question. There's also a question of power, you
20 | know, some services use high power from a central antenna.
21 | Some services use trunking, some services use cellular
22 | technology and some services use Quam or COFDM, or VSB, those
23 | are all issues that still have to be resolved. Simply stating
24 | that all frequencies are open for all purposes doesn't solve
25 | your problem.

1 COMMISSIONER NESS: Mr. Keyworth, you're suggesting
2 now then that we do not need a transmission standard, that the
3 marketplace will make that determination?

4 MR. KEYWORTH: I'm certainly suggesting that we need
5 interference standards, but I do not think, in the long run,
6 we will have a single transmission standard. However, let me
7 qualify that, if I may. I think the advancement that has been
8 made by the Grand Alliance on ATV has gone a long ways towards
9 bridging the transition between analog and digital television.
10 This is a pioneering effort. What I am speaking of is in the
11 long run, and we see this from DBS, we see this with cable, in
12 the long run there will be multiple ways of broadcasting
13 digital TV.

14 COMMISSIONER NESS: So if we go the route of not
15 having a specific transmission standard, then are we likely to
16 be saying good-bye to a free over-the-air system, whereas the
17 ones that you had suggested were all pay services?

18 MR. KEYWORTH: Multifaceted question. First of all,
19 I think the role of what we call free television will be, for
20 a long time, approximated because the customers are used to it
21 and the customers want it. Second of all, I believe that the
22 standard that the gentlemen here have been involved in
23 developing, not myself, is a very powerful standard. It is
24 excellent technology and I believe that the computer industry,
25 and I read the newspaper today, I believe the computer

1 industry can, in fact, accommodate to that standard more
2 easily than one might expect. So I think it is important.
3 All I am trying to say is that I believe the way the spectrum
4 is allocated should be de-zoned effectively and that it will
5 allow the maximum number of new entrants and maximum amount of
6 technology to adapt.

7 COMMISSIONER NESS: We have today, for example, 280
8 MHz of spectrum that's unused because it's diverse spectrum,
9 because with analog you will have the interference problem.
10 Mr. Carnes had suggested in his comments about the value of
11 repacking and therefore getting a contiguous spectrum which
12 ultimately will be more valuable if we were to do an auction.
13 How do you respond to that?

14 MR. KEYWORTH: First of all, I think I'm very, very
15 wary of predicting directions in the technology and timing,
16 it's all moving too fast. None of us could tell five years
17 ago what the status today of digital technology is. We will
18 know that there are coding techniques, spread spectrums, CDMA,
19 others, that will also play a role in determining
20 interference. So I believe that cheap computing power, which
21 is what the digital revolution means, means enhancement of
22 signal to noise ratios, which in turn means, I think,
23 multiplicity of ways to deal with interference.

24 COMMISSIONER NESS: Did you have response to is, Mr.
25 Reilly?

1 MR. REILLY: Well, I just think that as we embark on
2 trying to transition this nation's entire system to a new
3 digital format, the notion of having no standards which
4 consumers can rely on, that broadcasters can rely on, will
5 stand in the way of ever developing any large scale mass
6 market distribution system and we have many, many pieces of
7 equipment that we've got to still assemble to put this whole
8 system together and I think the consumer deserves some
9 assurance that there will, in fact, be high definition
10 programming that will work on the television sets that we're
11 expecting them to buy.

12 COMMISSIONER NESS: Thank you, I'm afraid my time
13 has ended, Mr. Carnes.

14 COMMISSIONER HUNDT: Commissioner Chong.

15 COMMISSIONER CHONG: Thank you. Mr. Major, you
16 stated in your testimony that you think that the Commission
17 should require that TV sets be ATV compatible and I was
18 wondering whether you thought we should mandate that they be
19 HDTV compatible?

20 MR. MAJOR: The Grand Alliance has come out with a
21 darn good spec and when the industry reaches the level of
22 consensus it's achieved on the Grand Alliance standard, the
23 concept of the FCC endorsing that consensus has a lot of
24 mileage in it and some serious thought should be given to
25 that. Yes, I would accept an HDTV standard.

1 COMMISSIONER CHONG: And do you think HDTV service
2 would become available if we don't require sets to be HDTV
3 capable?

4 MR. MAJOR: Yes, it will become available if you
5 don't require HDTV sets to be capable, but --

6 COMMISSIONER CHONG: And that's because of
7 marketplace forces, do you think?

8 MR. MAJOR: Marketplace forces, but quite frankly,
9 we can easily visualize the environment where it's required
10 that they be capable and that might accelerate the trend.

11 COMMISSIONER CHONG: I've been fascinated by Mr.
12 Keyworth's testimony, I'm trying to think it through. So
13 let's assume we auction off all the transitional channels to
14 the highest bidder, Mr. Keyworth and it looks as though you're
15 suggesting that the people that are currently on the analog
16 channels would stay on them, and everybody should be allowed
17 to anything they want on it, broadcast, cable service, data,
18 whatever they want, right, a bit is a bit is a bit? Now,
19 suppose we do that and there's no one that wants to serve a
20 small rural area in Alaska with any kind of television service
21 because it's not very economic. So all the people in that
22 town that's now currently receiving a couple of television
23 stations would no longer receive it because nobody wants to do
24 it. I mean, do you think that that is a scenario that the
25 Commission would be able to embrace given that we're trying to

1 bring service to as many Americans as possible.

2 MR. KEYWORTH: Yes, I do, because I believe that the
3 Commission is confronting the fact that digital technologies,
4 because of their plummeting costs, are achieving an
5 unprecedented presence and penetration in the marketplace.
6 The penetration of DBS, but before that the penetration of PCs
7 into the homes has been absolutely enormous, and as Tom Sewell
8 pointed out in a Forbes magazine editorial a couple of months
9 ago, no technology has every narrowed the haves versus
10 havenots gap more. Low-cost digital technology is
11 accomplishing that penetration. As far as rural service, we
12 are seeing with -- for example, with fixed cellular technology
13 worldwide, we are seeing cheaper and cheaper and cheaper per
14 line per person costs for telephony. We will see exactly the
15 same thing here and that little town in Alaska that you refer
16 to, I believe, will be the result of some very significant
17 low-cost technologies.

18 COMMISSIONER CHONG: I'd like to hear from others on
19 the panel, do you think free over-the-air would survive?
20 We'll start with Mr. Carnes.

21 MR. CARNES: I think that the technology that has
22 narrowed the gap between the haves and the havenots and the
23 history of the world has been television, the penetration of
24 television is higher than television, and the penetration of
25 PCs is nowhere near that, so I think preservation of free

1 over-the-air television is the way to eliminate that gap and
2 it's not to just open the spectrum up to anything.

3 COMMISSIONER CHONG: Mr. Reilly.

4 MR. REILLY: Spectrum auctions are not compatible
5 with the transition to HDTV format. People that are free to
6 bid for spectrum to use it for purposes for which they will
7 charge, will clearly be able to outbid people who are trying
8 to launch a service for which there is a huge investment
9 simply to replicate the service that they're already giving.
10 Eventually it will cost the public a lot more than whatever
11 the auction generates. The programs that they now enjoy for
12 free will migrate to paid-for high definition digital wired
13 services. The pay services will take on a bigger role in the
14 whole television programming industry. The opportunity for
15 the Commission to even entertain the notion of public service
16 requirements will be lost because the analog broadcasters
17 won't have the wherewithal to continue to serve the public in
18 the same way.

19 COMMISSIONER CHONG: Anybody else. I think, Mr.
20 Flaherty.

21 MR. FLAHERTY: Thank you, I'd like to just address
22 the question of the standard because the idea of doing
23 anything on those channels is really not possible. The reason
24 that we need a transmission standard as opposed to production
25 and other things, is that we already are in an existing NTSC

1 environment which is already interference limited. You don't
2 finally lose the television signal because it fades out, you
3 finally lose it because the station on that channel interferes
4 with you, it's an interference limited service. So the Grand
5 Alliance transmission system was carefully crafted to be able
6 to put 1,500 new television stations on the air in those new
7 channels without causing that interference and there are very
8 few changes that you can make to that without causing
9 interference, literally months of testing of all the channels
10 and all the taboos went into this and quite a few changes were
11 made in the standard in order to improve this interference
12 performance. So there isn't complete freedom in this. And,
13 in fact, the FCC staff hasn't yet finalized an allotment plan
14 which also influences this, what channel do you put in which
15 city and which location in order to minimize this. There is
16 not a great deal of flexibility in transmission in order to
17 minimize the interference into NTSC and from NTSC into ATV and
18 ATV into ATV. The simplicity of doing that and the simplicity
19 of cutting the channels into slices is directly proportional
20 to your distance from the problem. This is not a great
21 flexibility.

22 COMMISSIONER CHONG: Thank you.

23 COMMISSIONER HUNDT: Thank you very much. Mr.
24 Carnes, you said auctions will slow the deployment of digital
25 television. In other words, if Congress decides to auction

1 digital broadcast spectrum, your view is it will slow the
2 deployment of digital television. Dr. Keyworth, you said that
3 auctions are a favored way to go, that's the least regulatory,
4 most market oriented approach. Personally, I believe there
5 are arguments against auctions, but Dr. Keyworth, does it
6 stand to reason, in your view, that if someone pays in an
7 auction for broadcast spectrum, they would, in some way, want
8 to go slow in the deployment of the technology after having
9 paid money for the license?

10 MR. KEYWORTH: Not unless they had free money, no.

11 COMMISSIONER HUNDT: Isn't it logical, Dr. Keyworth,
12 that if somebody had to pay for the license, they, in fact,
13 would think of every way they could to convert their customer
14 base to digital reception so that they would be able to have
15 an audience?

16 MR. KEYWORTH: Yes.

17 COMMISSIONER HUNDT: Isn't that the way the
18 incentives would go?

19 MR. KEYWORTH: Yes.

20 COMMISSIONER HUNDT: Whereas, if you just give the
21 digital broadcast license to someone, they might or might not
22 be interested in taking money out of their pocket to set up a
23 transmission system and converting their audience to digital.

24 MR. MCKINNEY: But, Mr. Chairman, you're only
25 talking --

1 COMMISSIONER HUNDT: Excuse me, one second. Excuse
2 me, one second. Don't you agree with that, Mr. Carnes?

3 MR. CARNES: Well, I think the problem here is we're
4 already worried about the cost of converting to digital and
5 there's a big problem in dealing with that, it's dealable
6 with, but to add more costs, I think, will cause some people
7 to elect not to move and that's the wrong way to go.

8 COMMISSIONER HUNDT: I agree with you that there are
9 costs and there are costs, you agree with me, don't you, Mr.
10 Carnes, that one cost is for the digital broadcaster, another
11 cost is for the customer to convert to some product, whether
12 it's the PC with the card or the digital television receiver
13 or the box, they need to spend something to be able to watch
14 the digital television broadcast. You agree with that, don't
15 you?

16 MR. CARNES: Sure.

17 COMMISSIONER HUNDT: Okay, now, you said you thought
18 we should have a policy that moved everyone to digital as fast
19 as possible. What do you think of the idea that we've read
20 about in the press, that the administration is floating in the
21 budget reconciliation process, that says that some money ought
22 to be reserved from a future auction of analog spectrum so as
23 to use that money to help the consumers move more quickly in
24 their buying patterns towards digital reception. What is your
25 view about that?

1 MR. CARNES: Well, I think that would probably be
2 fraught with a lot of difficulties as to how that money is
3 actually apportioned and so forth. I think the best way to
4 satisfy the Congressional thing is to do some accounting magic
5 that takes account of the future value of the spectrum and
6 accounts for it in the seven-year period.

7 COMMISSIONER HUNDT: There's been a lot of talk
8 about how free over-the-air broadcast television can survive.
9 I want to ask you, Mr. Reilly, don't you think that one
10 fundamental condition for the survival of free over-the-air
11 broadcast is that digital broadcasters be able to reach 100
12 million homes, the same way that analog broadcasters, taking
13 the industry as a whole, can reach 100 million homes?

14 MR. REILLY: Certainly the vast majority of that,
15 yes.

16 COMMISSIONER HUNDT: Or 90 million.

17 MR. REILLY: 90 million.

18 COMMISSIONER HUNDT: You need the mass market, isn't
19 that right?

20 MR. REILLY: You need the mass market, yes, sir.

21 COMMISSIONER HUNDT: For advertisers to continue to
22 support in a way analogous to today's market.

23 MR. REILLY: Well, and to be able to amortize the
24 course of the programming and to be able to compete with
25 services that have two revenue streams and can bid for

1 | sporting events or programming events with two revenue
2 | streams.

3 | COMMISSIONER HUNDT: Absolutely.

4 | MR. REILLY: We're trying to do it with one.

5 | COMMISSIONER HUNDT: Such as cable or satellite and
6 | you're talking about different kinds of services.

7 | MR. REILLY: Virtually anybody else who is in the
8 | business of delivering digital signals.

9 | COMMISSIONER HUNDT: Right. Imagine with me, if you
10 | will, the following scenario. We give all the analog
11 | broadcasters a digital broadcast license. They build out
12 | those systems, whether it's fast or slow, whether Mr. Carnes
13 | is right or Mr. Keyworth is right, they do make a try at it.

14 | MR. REILLY: Yes.

15 | COMMISSIONER HUNDT: 50 million American homes
16 | decide to buy a digital television receiver. The other 50
17 | million, they don't do it, they don't want to take the money
18 | out of their pocket for that choice, you can't make them.
19 | Maybe they don't want to do it because they decided to go with
20 | the cable industry and bought a digital down converter box
21 | instead. But 50 million homes have a digital television
22 | receiver and 50 million have shown real reluctance to go along
23 | with this transition. What do we do?

24 | MR. REILLY: Well, it certainly creates a major
25 | problem for the broadcasting industry, because for us to try

1 and maintain, over a long period of time, a parallel system,
2 is not going to be in our best interests. This is one area
3 where the government can rest assured that the broadcasters'
4 interest in a speedy transition is congruent with the
5 government's interest because none of us want to be buying
6 second -- or replacement analog transmitters. None of us want
7 to be buying replacement analog tape machines and it certainly
8 is our hope that the quality of the new product, the new
9 delivery system that we'll be offering, the quality of the
10 augmenting services that we'll be offering will certainly,
11 over a long enough period of time, as equipment wears out,
12 justify people buying new digital, at least digital decoder
13 boxes that will light up their analog tubes.

14 COMMISSIONER HUNDT: But it's realistic to believe
15 that it is least a plausible scenario that the cable industry
16 will get to at least 50 million homes given the additional
17 down converter box, give them all the additional channels they
18 can possibly want, do that before broadcasters are able to
19 compete with that, and generate the 50/50 split that I'm
20 talking about here. Under the circumstances that I'm speaking
21 about, doesn't it make sense to think about incentives to the
22 consumers that would expedite or hasten or promote the
23 transition to digital reception, the very type thing the
24 administration is talking about?

25 MR. REILLY: Well, we're hopeful that the incentives

1 for the consumer to transition is based on the improved
2 quality of the product that we're going to be able to offer,
3 which is the ultimate, I think, incentive for them to try and
4 move to a new generation of --

5 COMMISSIONER HUNDT: I'm just suggesting a little
6 cash is sometimes an incentive for a consumer, too.
7 Commissioner Quello asked me to go ahead to Commissioner
8 Barrett in the next round since Commissioner Quello has to
9 absent himself briefly, and Commissioner Barrett, as if on
10 que, is here.

11 COMMISSIONER BARRETT: And you asked all the
12 questions when I saw you on television and you had asked the
13 question about the spectrum thing and I got my answers, thank
14 you very much.

15 COMMISSIONER HUNDT: Commissioner Ness.

16 COMMISSIONER NESS: Okay. Following up one last
17 question, Mr. Keyworth, on the issue that the Chairman raised.
18 You mentioned that it would, if one had an auction that would
19 make digital conversion go more rapidly, is that a correct
20 statement?

21 MR. KEYWORTH: I'm saying that lowering barriers to
22 entrants would make it go more rapidly. I'm saying that
23 auction, I believe, is the most expeditious and efficient way
24 that I know to allocate spectrum.

25 COMMISSIONER NESS: Okay, but that does not

1 necessarily mean that that spectrum, unless the Commission
2 were to mandate that the spectrum be used for digital
3 television, it could be used for a whole list of other things
4 and there may never be a conversion to digital television, is
5 that not also the case, Mr. Keyworth?

6 MR. KEYWORTH: There certainly will be a conversion
7 to digital.

8 COMMISSIONER NESS: Of some sort of another, but it
9 may be a conversion to digital PCS, or some other digital
10 service that we're not aware of.

11 MR. KEYWORTH: I certainly think it could be broader
12 than just television. I believe that television will be an
13 issue --

14 COMMISSIONER NESS: But would television play a role
15 in all of this?

16 MR. KEYWORTH: -- a major role because it is a major
17 marketplace and a major customer demand and requirement.

18 COMMISSIONER NESS: Okay, but absent either
19 mandating a standard or having some other requirement that the
20 spectrum be used for digital television, is there any reason
21 to conclude that auction recipients -- successful auction
22 bidders, would rapidly use that spectrum for the provision of
23 digital television?

24 MR. KEYWORTH: Speculation only, I believe they will
25 use it because it is an unmet demand in the marketplace and it

1 is a very large and attractive market. I believe they will
2 also try to provide as many alternative services as possible.

3 COMMISSIONER NESS: Would they do it if people don't
4 have television sets in the marketplace to receive the signal?

5 MR. KEYWORTH: Well, of course not.

6 COMMISSIONER NESS: Okay, thank you. Mr. Reilly.

7 MR. REILLY: Yes, Mr. Hendricks said this morning
8 that he thought that shortly after the broadcasting community
9 led the way into digital, the cable community would follow
10 along. The fact of the matter is this is a huge expensive
11 undertaking for our industry and it's the broadcasting
12 industry that stands first to try and move the rest of the
13 country into this new digital era. However, if we are for
14 once and all precluded from being able to make the transition
15 to high definition, to digital, other delivery mechanisms who
16 then will see that as a competitive advantage, a single
17 competitive advantage, will move very quickly to sell digital
18 delivery and eventually, I believe, take the lions share of
19 the programming away from us that presents the base for our
20 free and universal service.

21 COMMISSIONER NESS: Assuming we adopt the Grand
22 Alliance standard, for sake of discussion here, and we provide
23 the additional 6 MHz of interstitial spectrum for that
24 purpose, how would you determine when a transition has been
25 made such that the original spectrum can be returned?

1 MR. REILLY: Well, I think it has to be a standard
2 based on the number of consumers who have migrated to the new
3 digital forecasting. I think just as practically as a
4 political matter, disenfranchising --

5 COMMISSIONER NESS: Is it households, is it number
6 of TV sets in the --

7 MR. REILLY: I think the standard reasonably would
8 be build around households.

9 COMMISSIONER NESS: Okay, does anyone else have a
10 thought or comment on that? Mr. McKinney.

11 MR. MCKINNEY: No, I don't -- I think that's
12 correct, and I don't think you wait until the last television
13 set in every house has been replaced. I think you do have to
14 have a reasonable position to take and I think that is based
15 on households.

16 MR. CARNES: The cost of a set-top converter might
17 be also a factor in this as it comes down, you might be able
18 to go sooner because of the cost being low.

19 MR. REILLY: There will also be an economic argument
20 on the part of broadcasters. By the time the analog audience
21 gets down to 5 or 10 percent, it's going to be a very
22 difficult proposition to replace your analog transmitter at a
23 half a million dollars, and so eventually those service will -
24 - we won't want to continue to operate those services.

25 COMMISSIONER NESS: We had talked on an earlier

1 | panel about must carry, I was wondering if you could give your
2 | view as to what channels ought to be must carried? Mr.
3 | McKinney.

4 | MR. MCKINNEY: No, I'd like not to answer that.

5 | COMMISSIONER NESS: Okay, is there anyone who would
6 | like to, Mr. Carnes.

7 | MR. MCKINNEY: I have a long history on the issue of
8 | must carry that Commissioner Quello has --

9 | COMMISSIONER NESS: Okay, assuming that the Supreme
10 | Court doesn't give us the answer or another court doesn't give
11 | us the answer.

12 | MR. CARNES: I don't want to get real deep into the
13 | must carry thing, but just point out one thing, that if --

14 | COMMISSIONER NESS: Please.

15 | MR. CARNES: Earlier there had been a discussion
16 | that if there were for programs on one channel in digital that
17 | it would require four cable channels to get them out.

18 | COMMISSIONER NESS: Not the case if it's dynamic.

19 | MR. CARNES: But if it's digital, the cable guy can
20 | just send it down his cable in digital format using the same 6
21 | MHz. Now, beyond that, I have no comment about must carry.

22 | COMMISSIONER NESS: Mr. Reilly.

23 | MR. REILLY: And perhaps even less, in fact, if they
24 | move to a quam system, I believe, they'll be able to get it
25 | done in 3 MHz. I think it would be unreasonable for us to

1 expect the cable industry, until it begins to transition its
2 platform to digital, to have to invest simply to deliver our
3 programming. However, once that transition is made, it seems
4 to me that if we are operating in the public interest, then it
5 is in the public interest to get our signals, our free over-
6 the-air -- free universal signals to as many people as
7 possible and continuing a must carry regime for our free
8 programming. Not necessarily for anything that we would want
9 to pay, we'd strike a different kind of deal with the cable
10 people then, but for the free service, it seems to me it's in
11 the public interest to continue to require must carry.

12 COMMISSIONER NESS: Thank you very much, my time has
13 expired.

14 COMMISSIONER HUNDT: Did you want to go?

15 COMMISSIONER QUELLO: I've got one I want to --

16 COMMISSIONER HUNDT: Go ahead.

17 COMMISSIONER QUELLO: -- for Mr. Flaherty. You
18 know, there was some talk this morning about programming for
19 HDTV and what's available for HDTV and how long will it take
20 for HDTV format to be significantly in place?

21 MR. FLAHERTY: That's a very important question,
22 because this also affects the transition time. People in the
23 end watch programs and not technology, so they are certainly
24 not interested in moving to digital TV sets unless there are
25 good programs. And in this case, the United States in a very

1 unique position in the world. You heard earlier some of the
2 questions about how difficult Japan found it to launch the
3 service. Japan and Europe are in the same situation, they
4 have foreseen to put these services on a satellite so they
5 have instant coverage and no programs. Our problem here is
6 that we have to equip 1,500 television stations to get the
7 coverage, but we have the programs. We started a color
8 service by launching primetime programs in color when the
9 biggest audience watches and when the most attractive shows
10 are on the air, and these same programs, some 70 percent of
11 them, on the commercial television network, have been made in
12 high definition for 35 years. These are all 35 mm film
13 programs, not cinema, made-for-television programs, some 8,000
14 hours a year are made for television in high definition. And,
15 of course, Hollywood has the complete infrastructure for wide-
16 screen production, changing from 4 x 3 to wide screen is a
17 question of changing the apperature in the printer gate.

18 So the United States could launch a very significant
19 high definition program service and if those attractive
20 primetime programs don't move the audience to buy digital
21 television and high definition television sets then nothing
22 will and we might as well abandon the process. So we do have
23 a very large bank and a very large capacity for a very quick
24 start-up of high definition production in America.

25 COMMISSIONER QUELLO: Any estimate or guesstimate of