



**Testimony of K. James Yager, CEO,  
Barrington Broadcasting Company**

**On behalf of**

**The National Association of Broadcasters**

**And**

**MSTV**

**Before the**

**House Subcommittee on Telecommunications and the Internet**

**Of the**

**House Committee on Energy and Commerce**

**The Role of Technology in Achieving a  
Hard Deadline for the DTV Transition**

**February 17, 2005**

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Good morning Mr. Chairman. I am K. James Yager, CEO of Barrington Broadcasting Company. I appear today on behalf of the National Association of Broadcasters to discuss important issues related to our transition to digital television (DTV). I will emphasize the critical need to focus on consumers during this transition to ensure that all Americans will continue to have access to the best free over-the-air television service in the world. As I will explain below, there are valuable lessons we can learn from the DTV conversion experience in Berlin, Germany. I will also note, however, that the German experience is not fully translatable to ours here in America because the potential for consumer disenfranchisement we face in this country is much greater than that faced in Berlin.

As an initial matter, let me say that broadcasters have and will continue to fully support the digital television transition. We recognize that consumers will reap dramatic benefits from the amazing digital television technology. The transition period gives consumers an opportunity to trade out their analog receivers for digital ones on their own timetable. But, the transition cannot go on forever. Thus, Congress settled on the point when 85 percent of U.S. households is digital-capable for the turn-off of analog broadcasting.

It remains important to focus on the remaining 15 percent of households that will need to be accommodated in some way. As the 85 percent test is met in market after market, analog television sets without converters will go dark. 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. Thus, we would like to discuss in this testimony what we see as necessary to preserve consumers’ access to television, most particularly over-the-air only consumers who could be completely cut off from television by a hard cut-off date. And 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 approximately 280.5 million analog sets in use.<sup>1</sup> Consumers may not readily dispose of these sets, even if they have purchased a new digital television receiver.

The FCC has set in motion measures that will foster the DTV transition by providing incentives for consumers to buy DTVs. At some point, however, 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 answer is the subsidization of digital-to-analog converters for “non-digital” OTA households. Another measure is promotion and education about DTV, to encourage consumers to purchase DTVs. A near term measure that could be adopted would be to require warning labels on analog-only sets, alerting consumers to the limited useful life of these sets.

The real key to ending the transition, to not 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. Some government subsidization likely may be necessary here. The FCC’s practice of requiring auction winners to bear the costs of moving incumbent spectrum users would seem to be a useful idea, particularly as broadcasters have shouldered DTV transmission costs.

Before we return to our comments on the numbers of consumers and sets to be dealt with at the end of the transition and our thoughts about digital-to-analog converters, we would like to take a moment to discuss the Berlin transition to digital. We agree with the Subcommittee that it is important to examine both the Berlin and the greater German experience and the distinctions between that situation and ours in the United States. We look forward to hearing and reviewing the testimony presented today by GAO on the greater German experience, but we would like to review some of what NAB told this Committee last year about Berlin’s transition and ours.

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<sup>1</sup> 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 switch-over 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.

Germany, and particularly Berlin – the first place in the world where digital television broadcasting has completely supplanted analog – offers some instructive comparisons to the DTV transition in the United States. Nonetheless, there are striking differences between the German experience and ours which amply demonstrate why accelerating the digital transition here will require significantly more consumer-friendly actions by the government.

Let's look at some of the ways German digital television differs from our DTV transition. The single biggest difference is that Berlin – like other European DTV plans – does not include any provision for High Definition Television. DTV in the United States began in response to HDTV, a new Japanese technology that promised much greater picture and sound quality. Although the U.S. digital television system will also permit multicasting and the distribution of new data services, it has always included HDTV capability, and the amount of HDTV programming available here is great and continues to expand. In the United States, HD has been the only incentive for consumers to purchase digital receivers, particularly since most cable systems have refused to pass through any other DTV services. While the FCC recently voted to deny cable carriage of broadcasters' multicast programming, NAB believes that decision bears re-evaluation by this Subcommittee. We believe that multicasting as an option for some programming and some dayparts will be critical to preserving the vitality of the free over-the-air broadcast system. Multicasting is also a powerful additional incentive for consumers (particularly OTA-only consumers) to purchase digital sets or converters. But multicasting will only be developed if there is access to the entire audience for such offerings, not just access to OTA-only sets.

By contrast, European DTV was intended primarily to offer more programming choices. European analog television for the most part has offered fewer television signals to consumers than are available in the United States and a higher percentage of noncommercial services (for which viewers pay a receiver tax).<sup>2</sup>

This profound difference has several consequences. First, European consumers who move to DTV reception receive an immediate benefit of more channels at no additional cost. In Berlin, buying a digital TV or a set-top box increased viewer choice from eight channels to roughly 30 channels.<sup>3</sup> Second, since there is no need to decode or

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<sup>2</sup> In many countries, penetration of cable or satellite multi-channel video providers has been far less than in the United States and, even where MVPD penetration has been substantial (like Berlin), the number of channels provided has been fewer than typical American systems provide.

<sup>3</sup> The Berlin authorities thought it particularly significant that moving to DTV resulted in consumers "receiving more services for which the license fee is paid." DVB-TV: Das Überall Fernsehen, *Berlin Goes Digital* (accessed at <http://www.mabb.de/start.cfm?content=aktuelles&id=632>) at 15 (hereinafter *Berlin Goes Digital*). Berlin already had more operating channels than other parts of Germany where three to five analog channels are typical. Berlin was able to have these additional channels because of spectrum vacated by former East German stations after reunification.

display HDTV signals, the memory and processing requirements of DTV receivers and set-top boxes is much less in Europe than in the United States. Thus, it is relatively cheaper to manufacture digital receivers for European DTV. DTV receivers were available in Berlin, for example, for around 200 euros, far less than HDTV-capable receivers cost here,<sup>4</sup> and set-top boxes there were also less expensive.<sup>5</sup>

Moreover, because digital transmissions in Germany are not high definition, a consumer with an analog receiver who acquires a digital set-top box would receive the same programs at almost the same quality as a consumer with a new digital receiver. Similarly, if a cable system in Berlin converts a broadcast digital signal to analog for display on analog receivers connected to the cable system, the cable subscriber receives essentially the same thing as he or she would if the cable system were delivering the digital signal in its native format to a digital receiver.

It is important to emphasize that down-conversion has a far more negative impact in the United States. If a U.S. cable system down-converts a broadcast DTV signal, as some have suggested, cable subscribers will *not* receive what they would get if they had a digital receiver and the cable system carried the broadcast digital signal. The consumer would not receive high definition pictures or better sound and would not receive multicast signals or data transmissions. There would be little reason for those consumers to purchase digital receivers and, of course, if they already had DTV sets, they would not get much of the benefit of their purchase. An apt analogy would be to imagine that consumers who purchased color television sets in the 1960s found when they brought the color sets home, they would still only see black and white pictures. The predictable public outcry against wasteful government requirements would likely be intense.

As a consequence of these differences, the digital conversion in Berlin presented consumers with a very different value proposition – for a fairly modest one-time expenditure, the consumers could get the equivalent of free basic cable for life. Moreover, nearly the full benefits of the conversion could be realized on TV sets, small and large, analog and digital alike. So it was not difficult to persuade consumers to buy the digital sets and boxes and there was little danger of consumer resentment over the premature obsolescence of their existing sets.<sup>6</sup> In the long run, we believe that European consumers and broadcasters will come to regret foreclosing the benefits that HDTV will provide, particularly as other digital media increase their ability to deliver the highest quality sound and pictures.

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While some other German cities are expected to begin digital transmission this year, much of Germany under current plans will never have digital over-the-air television because sufficient channels are not available.

<sup>4</sup> *Id.* at 5.

<sup>5</sup> The current exchange rate is approximately \$1.30 to the euro. Set-top boxes have been on sale in Berlin for as little as 69 euros, or about \$89.00 (U.S.).

<sup>6</sup> The license fee paid by all set owners is 16 euros per month, so the cost of a set-top box represented about four months of license fees.

Another distinction between the Berlin and American transitions are the obligations placed on cable. Cable in Berlin was required to carry all broadcast services and to protect analog-only households after the switch-over to digital. In stark contrast, the FCC just last week acted to deny cable carriage for all but one free stream of digital broadcast programming. And, there are still no obligations on cable systems to ensure that their analog-only subscribers will have access to local television signals after analog broadcasting ends.

This is a very important point. One of the reasons that analog broadcasting was able to be switched off in Berlin was the prevalence of cable and satellite delivery systems. Only about seven percent of Berlin households received television over the air, a lower percentage than in the rest of Germany.<sup>7</sup> An even smaller number of homes in Berlin (about 90,000) relied on terrestrial transmission for second and third sets.<sup>8</sup> In the United States, it is estimated that there are 45 million sets in homes that are not connected to any cable or satellite system and an additional 28 million unwired sets in cable or satellite households. In total, over 25 percent of all televisions (73 million receivers) rely solely on over-the-air transmission and will need to be replaced or have converters attached in order to operate after analog broadcasting ends.

Because so large a percentage of Berlin homes relied on cable or satellite to receive local television, and those systems were required to ensure that broadcast digital programming reached all of their subscribers, there was no risk that consumers would be stranded as is likely here. Further, there was very little risk that ending analog broadcasting would result in a significant loss of audience or revenue for commercial broadcasting. The result here is much different.

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' gatekeeper power and frustrate Congress' goal of improving local broadcasting.<sup>9</sup>

These differences are significant and make it apparent that Berlin does not provide a ready model for the United States. In particular, as we discuss here, the very much larger number of sets that rely on over-the-air transmissions, as well as the very

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<sup>7</sup> *Berlin Goes Digital* at 2. In Germany, satellite service is free to the consumer after the purchase of the receiver; cable service typically costs only 12-15 euros, much less than the cost of American cable service.

<sup>8</sup> *Id.* at 3.

<sup>9</sup> In this regard, it is worth noting that there are no plans to bring terrestrial digital service to much of rural Germany. It is not clear whether those areas will lose over-the-air service altogether or be left with analog service only. The American DTV transition is intended to ensure that high-quality digital television be available across the country.

large number of analog sets in cable and satellite homes for which no DTV transitional carriage rules have been established, make it impossible to conclude that a Berlin-style transition would not harm the public interest in a strong local broadcasting system.

Despite this, there are certainly lessons that we can take from the Berlin experience. The German authorities recognized that moving millions of consumers from analog to digital, while resulting in significant benefits for consumers, would create burdens that should not fall on broadcasters. Instead, they concluded that “[s]olving the issue of social acceptability of the switchover is a public duty to be fulfilled by the state.”<sup>10</sup> The response from consumers in Berlin also counters suggestions that it is not important to maintain the level of over-the-air services. “Numerous comments by viewers . . . refute the claim that viewers traditionally receiving television through the air would be content with fewer services – the opposite is the case.”<sup>11</sup>

Another important lesson is that free TV is crucial to any transition from analog to digital. The experience not only in Germany, but also in the United Kingdom and in Spain with pay digital television – where those services languished – shows that the “switchover must be undertaken with free-to-air television.”<sup>12</sup> Indeed, in England, the subscription terrestrial DTV service collapsed; digital penetration began to increase significantly only with the development of the Freeview system that greatly expanded consumer choice by providing multiple channels of free over-the-air programming.<sup>13</sup>

One other part of the Berlin experience is particularly instructive. The Berlin authorities concluded that one of the advantages that could be obtained from a transition to DTV was the increased potential for portable applications. This is achieved through a system of distributed transmission where additional transmitters repeat the signal and enable it to reach televisions without roof-top antennas. The same capability has been developed for the U.S. digital broadcast system, and broadcasters have asked the FCC to authorize its use. The FCC has agreed in principle. Final action by the FCC on this issue would also help advance the transition here.

Let me turn back for a moment to the critical issue of over-the-air viewership and the availability of digital converters. Without the widespread availability of low cost digital-to-analog down-converters, the FCC 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), 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.

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<sup>10</sup> *Berlin Goes Digital* at 12.

<sup>11</sup> *Id.* at 15.

<sup>12</sup> *Id.* at 3; *see id.* at 16.

<sup>13</sup> *See* Office of Communications, *Driving digital switchover: a report to the Secretary of State* (April 5, 2004)(accessed at [http://www.ofcom.org.uk/research/dso\\_report/?a=87101](http://www.ofcom.org.uk/research/dso_report/?a=87101)).

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.”<sup>14</sup> Many Spanish-speaking viewers choose not to subscribe to cable or DBS because these services offer primarily English-language programming.<sup>15</sup>

But there are also a large number of viewers who cannot afford pay television. Twelve percent of American households fall below the poverty line.<sup>16</sup> 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 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

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<sup>14</sup> Comments of the Consumer Electronics Association, MB Docket No. 04-210, August 11, 2004 (“CEA”) at 4.

<sup>15</sup> Comments of Entravision Holdings, LLC, MB Docket No. 04-210, August 11, 2004, at 2.

<sup>16</sup> 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](http://money.cnn.com/2004/08/26/news/economy/poverty_survey).

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.

As mentioned above, a key to ending the transition without 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. In this regard, it is important to keep in mind not only the cost of such converters, but that low cost converters for making digital signals available to analog sets will need to have defined minimum technical capabilities. 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.<sup>17</sup> 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.

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<sup>17</sup> “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.

Motorola's 2004 testimony before this Subcommittee<sup>18</sup> 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.<sup>19</sup>

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What does this all really mean? It tells us that relying on cable or satellite services to drive the transition to digital – as some have argued – will ultimately fail. Free local broadcasting has always been the core of television service. It will be, it must be, a primary driver of the digital transition. With it, we will have a vibrant new television service. Without it, we will have simply more variations on the same pay services, as well as diminishing news, emergency services and other public interest activities for which our communities rely on local broadcasters.

Broadcasters share the desire to bring the DTV transition to a close. Unlike Germany, American commercial broadcasters have been required to shoulder an enormous financial burden to build and operate digital facilities. No broadcaster wants to continue paying for both analog and digital operations for any longer than necessary. Instead, we look forward to an all-digital future.

There is no question the DTV transition is progressing. Over 1370 television broadcasters are now on the air and reaching 99% of households in their communities and across the country with digital signals. What remains is a harder problem to solve and that is consumer adoption.

The FCC has taken significant steps to advance the transition, including the digital tuner mandate, the "Powell plan" and the agreement on cable compatibility standards. It is to be commended for its constructive approach. These steps are bearing fruit, not only in the availability of more and more exciting programming, but also in increased sales of digital receivers and displays. But, more is needed, particularly the now-denied digital carriage rules for the transition and afterwards. The FCC has failed to do what is needed to make this transition smoother. It is now up to Congress to correct that failure so that we can bring the transition to an end in this decade without causing significant disruption to consumers or reducing service.

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<sup>18</sup> "Motorola Broadband CTO to Speak Before House Subcommittee on Telecommunications Regarding DTV Transition," Motorola press release, July 21, 2004.

<sup>19</sup> Comments of LG Electronics filed in FCC MB Docket, 04-210, August 11, 2004 at 3.