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DIGITAL TELEVISION: HAS THE REVOLUTION STALLED?

When digital television technology first hit the scene it garnered great excitement, with its promise of movie theater picture and sound on a fraction of the bandwidth of analog. A plan was implemented to transition from the current analog broadcasting system to a digital system effective December 23, 2006. As we reach the half point of this plan, the furor begins to die as the realities of the difficult change sink in.

The History of Digital Television

¶1 The technological possibilities of digital television are immense.¹ It could provide the broadcast of theater quality sound and picture via cable, antenna or satellite; multicasting which enables the transmission of multiple programs within one digital signal; and signals for data communications that could potentially bring to the TV the capabilities of web pages and interactive compact discs.²

¶2 The motivation behind the development of digital television technologies can be traced back to the history of analog broadcasting. As television became a viable medium in the United States at the start of the Second World War, the establishment of technical standards in transmission and reception equipment was of vital importance. In 1940, the National Television Systems Committee (NTSC) met to determine guidelines for the transmission and reception of television signals. With the US leading the charge into early broadcasting in the late 1940s, the technology available at the time became entrenched and remains a part of our lives today, with the familiar 525-line low-resolution screens that bring us the evening news.

¶3 Although this rallying behind the NTSC standard gave the US a significant head start, it also severely limited the nation's ability to adopt newer, better quality television formats as they were developed. As a result, many countries that graduated from radio to television a decade or more after the United States were positioned to employ television formats that were technologically superior to the American broadcast system.

¶4 While technological developments proceeded apace during the post-war boom, it was not until the late 1980s that the political will emerged to change the nation's broadcast system. Lobbying by the broadcasting industry convinced the FCC to create a committee to study the desirability and impact of a switch to digital television.

¶5 The Advisory Committee on Advanced Television Services³ began meeting in November 1987.⁴ The mission of the committee was to analyze the feasibility of moving to a more advanced television format and to evaluate competing systems. The original plan for implementing the new television system did not give preference to any one format, such as digital HDTV. As the committee's name implies, the new technologies were, instead, referred to collectively as "advanced television" (ATV), a term which has been largely forgotten in the last few years.

¶6 Beginning in 1988, numerous high-definition television systems, both analog and digital, were tested.⁵ The technical problem that broadcasters faced in creating advanced television services was that the broadcast spectrum was already saturated with signals. If the new high-definition pictures were going to fit (while retaining the analog signals), the system would have to be digital. An analog signal of similar quality would require significantly greater bandwidth and there was simply not enough room available in the portion of the spectrum allocated to television broadcasting. In 1992, the General Instrument Corporation demonstrated an all-digital high-definition television system for the committee.⁶ Once the benefits of such a system were realized, there was no further serious discussion of an analog contender.

¶7 Less than a year after its formation, the advisory committee issued, and the FCC adopted, a Tentative Decision and Further Notice of Inquiry regarding advanced television. While seeking further comments from broadcasters and other affected parties, the decision foreshadowed the FCC's pro-digital policy in the coming decade.⁷

¶8 In order to accomplish the transition from analog broadcast to digital transmission, existing television broadcasters would be given an additional 6 MHz spectrum band. The theory was that broadcasters would begin transmitting digital signals in this new band and then the analog signal would be discontinued when consumer penetration of the new technology was deemed sufficient. Once the old analog service went off the air, the spectrum it had previously occupied would be auctioned off for other uses.

¶9 In April 1997, the Commission established a timeline that required all television stations to broadcast in digital by certain deadlines. The digital television (DTV) construction

requirements vary depending on several factors, including the size of the television market. Affiliates of the top four commercial networks in top ten markets have a deadline to construct DTV facilities prior to May 1, 1999. The deadline for all other commercial stations to construct DTV is May 1, 2002. Finally, public television stations must construct facilities by May 1, 2003. Once constructed, DTV stations must begin partial simulcasting of the analog (NTSC) channel's video content in 2003 and are scheduled to shift to full simulcasting in 2005.⁸ The goal of the legislature is to have this transition coincide with the purchase of high definition television (HDTV) sets. Once the goal of full transition by 2006 is reached, viewers must have purchased either digital television sets, or the converter boxes that allow analog television sets to receive the digital broadcast.

¶10 Although HDTV (high-definition television) is the most recognized acronym in the field of digital broadcasting, it is not the only digital option. To underscore the differences, DTV is a technology and HDTV is just one of the things you can do with DTV.⁹ Like HDTV, SDTV (standard-definition digital television) involves the transmission of a digital quality picture and sound, though at a lower resolution than HDTV. This allows broadcasters to bundle more than one channel of information into its 6 MHz band. For example, during the recent NCAA Men's Basketball Tournament, local stations offered digital television owners a choice of games to watch, while analog viewers were forced to watch regional action.¹⁰

¶11 While stations may benefit from offering viewers a choice of programming options in special circumstances, it is not necessarily in their best interests to oversell this practice. Since the potential costs of upgrading to digital transmission and production facilities can add up to tens of millions of dollars, broadcasters have a strong incentive to try to get consumers hooked on high-definition broadcasts as quickly as possible.

The "Must Carry" Debate

¶12 As part of the transition period, many broadcasters will broadcast two signals--one analog and one digital. In the quest to transmit the signal to more people and potentially expose a greater portion of the population to the technology, the question of whether subscribers to cable will receive digital transmissions becomes crucial. Some cable companies, such as Time Warner, have voluntarily begun to transition to a digital signal. A debate now begins as to whether the cable companies will be *required* to carry the signals under a "must-carry" provision.

The Legislative Proposals

¶13 There is some talk that Congress will attempt to force digital signal carriage by extending the must-carry provision of the 1992 Cable Television Consumer Protection and Competition Act (1992 Cable Act) to the digital context. The 1992 Cable Act contains "must-carry" provisions, which require cable operators to use up to one third of their channel capacity to carry local broadcast stations.

¶14 The FCC tendered several potential proposals for the implementation of digital must-carry provisions: (1) the immediate carriage proposal; (2) the system upgrade proposal; (3) the phase-in proposal; (4) the either/or proposal; (5) the equipment penetration proposal; (6) the deferral proposal; (7) and the no must-carry proposal.¹¹

¶15 The "immediate carriage" proposal requires every cable operator to carry all broadcasts of digital signals in addition to the existing analog signals, up to the one-third capacity limit.¹² The "system upgrade" option requires only high channel capacity cable systems to carry digital television during the transition period.¹³ The "phase-in" proposal requires cable systems to carry some digital broadcasts immediately upon availability and must subsequently add a certain number of digital signals each year.¹⁴ The "either/or" proposal requires broadcasters to choose mandatory carriage for either their analog signals or their digital signals during the early years of the transition period.¹⁵ The "equipment penetration" option requires the cable operators to carry digital television stations only when a significant number of consumers will have access to digital transmission through digital television sets or digital analog converter boxes.¹⁶ The "deferral" option defers mandatory carriage of digital signals for a certain period of time.¹⁷ The "no must-carry" laws do not apply any mandatory carriage laws.¹⁸

¶16 If any proposal requiring any degree of a must-carry provision for DTV is passed, it will undoubtedly face a constitutional challenge on First Amendment grounds.

The Case Law

¶17 The issue of must-carry regulations was addressed by the Supreme Court in *Turner Broadcasting Sys., Inc. v. FCC*¹⁹ (*Turner I*) and *Turner Broadcasting Sys. Inc., v. FCC*²⁰ (*Turner II*). These cases present the constitutional framework a court will likely apply to a digital must-carry law. The initial question a court must ask when determining the constitutionality of digital must-carry is whether the law is content-based or content-neutral and whether the law is narrowly tailored.²¹

¶18 *Turner I* and *II* both concern a challenge of the must-carry provision in the 1992 Cable Act on First Amendment grounds. This provision was enacted to guarantee the survival of the medium that is important to America.²² The goals of the Act as stated in *Turner I* are as follows: (1) to preserve the benefits of local television service, particularly over the air television service; (2) to promote the benefits of local television service, particularly over the air television service; (3) to promote the widespread dissemination of information from diverse sources; and (4) to promote fair competition in the video market.²³ The law also contains different threshold requirements for broadcast television versus public broadcast television.

¶19 The Supreme Court found the regulation in question to be content-neutral. Because the speech in question was content-neutral, only an intermediate level of scrutiny is required. Under this level of scrutiny, the regulation will be sustained if it furthers an important or substantial government interest. If the government interests is unrelated to the expression of free expression and if the restriction is no broader than is essential to the furtherance of that issue then it is constitutional.²⁴ There is no requirement that the law be the least restrictive means to furthering this goal.

¶20 The case was revisited in *Turner II*. The issues before the Court in *Turner II* were whether the laws were necessary to protect broadcasters, and what effect the laws had on cable operators. The Court found that there was a valid foundation to support a finding that there was a threat to broadcast television. It also did not feel that the effect of the laws on cable broadcasters was so extreme as to justify its revocation. As such, the Court reiterated that the laws were valid

¶21 The decisions in both *Turner I* and *Turner II* were upheld by the slimmest of margins, but they remain the law that controls this issue. Even given the seemingly shaky justification, questionable causation, and a serious issue as to whether the laws were inherently content-based, the court found these laws valid. Given this, any law challenging the passage of a must-carry provision is likely to fail.

Other Policy Considerations

¶22 By the time that the Telecommunications Act of 1996 had been signed into law, it was clear that the transition to HDTV would be an ongoing political fight for years to come. Budget-makers in Congress saw the spectrum grants authorized under the Act as a potential source of revenue being given away for free. In return, they received only vague promises that the spectrum currently used for analog broadcasts would eventually be auctioned off. Furthermore, local governments were beginning to express reluctance to allow broadcasters to

build the hundreds of new television towers that would be required during the transition period. Ironically, although most of the technical standards have been agreed upon, it is these political stumbling blocks that could hold up the nationwide upgrade to digital television in the years to come.

Transmission Problems and the Sinclair Petition

¶23 Tests done on the DTV antennae have yielded potentially disturbing result. One test indicates that it will be difficult for any viewers to receive a signal through "rabbit ears". Even the antennas attached to a traditional television set may not ensure a signal for some. As a result, even more consumers will be dependent upon cable systems to receive digital television signals. Tension over the results of these studies has been further exacerbated by the emergence of a competing transmission system, which has performed as well or better in studies. This debate has come to a head with the submission of the Sinclair Petition.²⁵

¶24 The Sinclair Broadcasting Group, joined by broadcast owners controlling 250 television stations across the country, filed a Petition for Rulemaking with the FCC. The Petition raises concerns about the 8- VSB transmission system used in the ATSC Digital Television Standard and suggests the FCC should consider allowing broadcasters to use an alternative transmission system adopted in other countries. They want to choose to transmit either COFDM or 8-VSB modulation for DTV.²⁶ They further argue that in light of recent advances, the FCC should let the marketplace play an appropriate role in the development of digital television.²⁷

¶25 The FCC reaffirmed the selection of 8-VSB and denied the use of COFDM as an alternate transmission standard. Or, to alternatively phrase the situation, the FCC refused to set receiver standings.²⁸ As such, the debate over the standard still, to some extent, endures.

The Antenna Disputes

¶26 Although the FCC has imposed an expedited DTV construction schedule, a broadcaster's ability to meet this mandate may depend on state and local zoning, land use regulations, or other approvals, because of the necessity of constructing new TV transmission towers. The FCC proposed a new rulemaking process to determine whether it should exercise its authority to force local authorities to act on tower-sitting regulations within a set time period or give up their right to block construction. Broadcasters are lobbying the FCC and Congress to pass this legislation to alleviate any potential disputes they may have over the construction of new towers.²⁹ These disputes illustrate that although the FCC and the community may welcome

the inception of DTV, communities are not necessarily happy about the addition of another tower in their neighborhood.³⁰ The members are striking back and attempting to block, through local zoning authorities, any additional tower constructions.

The Future

¶27 Television stations will be permitted to continue the broadcasting of analog beyond 2006 (and to retain the extra channel it received from the FCC for the transition) if less than 85% of the households in its market have at least one of the following: (1) digital TV delivered by cable or satellite; (2) a digital TV; (3) or a box that converts digital TV signals for viewing on an analog set.

¶28 Moreover, auctions begin this year for spectrum in channels 60-69. The bids are likely to be significantly lower if the potential bidder doesn't believe that the spectrum will be returned in the foreseeable future.³¹ Providers of next generation wireless services aren't happy because they want the spectrum the broadcasters are to relinquish as they complete the transition to digital TV.

¶29 The level of HDTV sales has risen, but it has not reached the level necessary to bring the price of HDTV sets down to the level of affordability for the average American. HDTV manufacturers are pressuring the legislature to favor policies, such as requiring cable must-carry, which could stimulate sales and lower the purchase price for the televisions. Broadcasters wrestle with tower dilemmas and costs as they attempt to transition to digital. The FCC decides against digital must-carry, disappointing broadcaster and HDTV set manufacturers.³² And the DTV revolution continues to stall.

¶30 The promise of the invention is still there, but the opposing legislative forces behind it have frustrated and hampered progress towards the goal.

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Footnotes

1. For additional information on the technical development of DTV see <http://www.pbs.org/opb/crashcourse/> (visited April 25, 2001).
2. Digital Television Tower Sitting Fact Sheet and Frequently Asked Questions. <http://www.fcc.gov/mmb/prd/dtv/> (visited April 25, 2001).
3. Now the Advanced Television Systems Committee, <http://www.atsc.org/> (visited April 25, 2001).
4. *Broadcast Regulations: A Review of '91 and a Preview of '92*, NAB REPORT (National Association of Broadcasters, Wash., D.C.), 1992, at 191.
5. Ellen P. Goodman, *Digital Television and the Allure of Auctions: The Birth and Stillbirth of DTV Legislation*, 49 Fed. Comm. L.J. 517, 521 (April 1997).
6. Id. At 522.
7. Susan R. Athari, *High Definition Television: A New Breed of Television Enters the Regulatory Jungle*, 1 CommLaw Conspectus 87 (1993).
8. See, *Carriage of the Transmission of Digital Television Broadcast Stations*, 63 Fed.Reg. 42330, 42332 (1998), (to be codified at 47 CFR. Pt. 75) (proposed Aug. 7 1998).
9. Kristi Coais, *Digital TV: One Man's View*, Wired.com <http://www.wired.com/news/topstories/0,1287,14769,00.html>(visited April 18, 2001).
10. <http://www.wral-tv.com/digital/info/faq.html>(visited April 25, 2001).
11. See *Carriage of the Transmission of Digital Television Broadcast Stations*, 63 Fed. Reg. 42330, 42333 (1998) (codified at 47 CFR pt. 76) (proposed Aug. 7 1998).
12. Id. at 42337-8.
13. Id.
14. Id.
15. Id.

16. Id.

17. Id.

18. Id.

19. 512 US 662 (1994).

20. 520 US 180 (1997).

21. *Turner II*, 520 US 180.

22. *Turner I*, 512 US at 647.

23. Id. at 633.

24. *States v. O'Brien*, 391 US 367, 377 (1968).

25. James M. Burger and Todd Gray, *The Sinclair Petition: Understanding the Controversy*, <http://www.digitaltelevision.com/law/law1199.shtml> (visited April 25, 2001).

26. Id.

27. For further information on the technical explanation of COFDM; *See, Explaining Some of the Magic of COFDM*, J.H. Stott (BBC), Proceedings of the 20th International Television Symposium, 1997 <http://www.bbc.co.uk/rd/pubs/papers/> (visited April 25, 2001).

28. James M. Burger, *FCC Acts on Transmission Standards, Receiver Standards, Must Carry, and Much More*, Digital Television website <http://www.digitaltelevision.com2001/tools/0202.shtml> (visited April 12, 2001).

29. James M. Burger and Todd Gray, *The Tower Dilemma, Federal Preemption of Local Land Regulation*, Digital Television and the Law, February 1999. <http://www.digitaltelevision.com/law/law299.shtml> (visited April 25, 2001).

30. Id.

31. FCC DVT Order Outlining Further Notice of Proposed Rulemaking (FNPRM).

32. James M. Burger, *FCC Acts on Transmission Standards, Receiver Standards, Must Carry, and Much More*, Digital Television website,
<http://www.digitaltelevision.com2001/tools/0202.shtml>(visited April 12, 2001).