

2. The Congressional Findings Made in Connection with the 1992 Act Are Binding on the FCC And Are Sufficient to Uphold the Must Carry Legislation.

The cable companies next suggest that mandatory carriage in the transition cannot be sustained under the First Amendment because:

[T]here are no congressional findings and scant materials in the legislative record with respect to digital must carry. By contrast, the analog must carry rules were adopted by Congress along with extensive factual findings made in the text of the statute itself.¹⁹⁰

But the cable companies' arguments overlook two critical and related facts: first, contrary to the impression created by the cable companies' comments, including the excerpt quoted above, none of the key factual findings made by Congress and included in the text of the statute are limited to analog signals; and second, as noted above, the facts found by Congress fully support the imposition of mandatory carriage for both digital and analog signals during the transition.

The clearest way to demonstrate each of these points is simply to refer back to the key findings made by Congress to support must carry. Key congressional findings include:

-- There is a substantial governmental interest in promoting the continued availability of . . . free television programming, especially for viewers who are unable to afford other means of receiving programming;¹⁹¹

-- Cable television systems and broadcast television stations increasingly compete for television advertising revenues. As the proportion of households subscribing to cable television increases,

¹⁹⁰ NCTA Comments at 22; *see also* TCI Comments at 11-12.

¹⁹¹ § 2(12) of the 1992 Cable Act.

proportionately more advertising revenues will be reallocated from broadcast to cable television systems;¹⁹²

-- Cable systems have an economic incentive to “terminate the retransmission of the broadcast signal, refuse to carry new signals, or reposition a broadcast signal to a disadvantageous channel position;¹⁹³

-- There is a substantial likelihood that absent the reimposition of [must carry requirements], additional local broadcast signals will be deleted, repositioned, or not carried;¹⁹⁴

-- As a result of that incentive and in the absence of a must carry requirement, “the economic viability of free local broadcast television and its ability to originate quality local programming will be seriously jeopardized;¹⁹⁵ and

-- Most subscribers to cable television systems do not or cannot maintain antennas to receive broadcast television services, do not have input selector switches to convert from a cable to antenna reception system, or cannot otherwise receive broadcast television services.¹⁹⁶

None of these findings was in any way limited by Congress to analog signals or to television stations that broadcast only analog stations. Nor are these findings limited to those signals or stations as a factual or logical matter. All of the findings are as applicable to digital signals as to analog signals.¹⁹⁷

¹⁹² § 2(14) of the 1992 Cable Act.

¹⁹³ § 2(15) of the 1992 Cable Act.

¹⁹⁴ § 2(15) of the 1992 Cable Act.

¹⁹⁵ § 2(16) of the 1992 Cable Act.

¹⁹⁶ § 2(17) of the 1992 Cable Act.

¹⁹⁷ In light of the obligation to defer to the explicit predictive judgments of Congress, neither the FCC nor any court has the authority to revisit Congress’ predictions to determine whether they have come to pass. *See* Jenner Statement at 11-15. Indeed, to the extent that the cable companies believe that Congress’ judgments and findings are no longer valid, *see, e.g.,* A&E Comments at 39-40, those arguments must be made to Congress, not to the Commission.

In sum, in the 1992 Act, Congress made unusually detailed findings regarding the need for mandatory carriage of broadcast signals. Those findings were not limited as a factual or logical matter to analog signals. In *Turner II*, the Supreme Court endorsed a significant number of those findings, including all of those listed above, as reasonable. Those findings are binding on the FCC as it implements the statute's mandatory carriage obligations. And those findings, as described above, are fully sufficient to justify the conclusion that mandatory carriage during the transition will serve government's important interest in preserving the benefits of free over-the-air television.

3. The Mandatory Carriage Provisions Are Narrowly Tailored.

Finally, the cable companies assert that the burden of must carry during the transition will be significant. This argument should sound familiar. Regarding the burdens of analog must carry, the cable companies argued vociferously that the burdens imposed by must carry would be overwhelming. Nevertheless, the Supreme Court concluded that "the actual effects [of must carry] are modest."¹⁹⁸

Indeed, in their haste to overstate the burdens imposed by the imposition of must carry during the transition, the cable companies adopt a measure of the burden that the Supreme Court explicitly rejected in *Turner II*. Relying on the theoretical maximum burden imposed by mandatory

¹⁹⁸ *Turner II*, 117 S. Ct. at 1198.

carriage, cable companies suggest that the burden of must carry would be over 70,000 channels.¹⁹⁹ But, of course, if these signals would be carried by operation of market forces, they are not logically part of the expected burden of must carry. Indeed, this is exactly what the Supreme Court determined in *Turner II*. Despite the fact that the theoretical burden of must carry exceeded 35,000 channels, the Court determined the extent of the burden by looking not at that theoretical maximum, but rather at the actual number of stations that received cable carriage solely as a result of the statutory carriage requirement.²⁰⁰ With respect to the digital signals, the cable companies themselves argue that a substantial proportion of the digital channels would receive carriage even without the mandatory obligations in the 1992 Act.²⁰¹ There is thus no basis to adopt the cable companies' exaggerated figures as the proper starting point for the burden analysis.

¹⁹⁹ See, e.g., NCTA Comments at 30; see also A&E Comments at 24-25.

²⁰⁰ *Turner II*, 117 S. Ct. at 1198-99; see also *Turner I*, 512 U.S. at 673 n.6 (Stevens, J., concurring in part and concurring in the judgment) (“to the extent that §§ 4 and 5 obligate cable operators to carry broadcasters they would have carried even in the absence of a statutory obligation, any impairment of operators’ freedom of choice, or on cable programmers’ ability to secure carriage, would be negligible”), cited in *Turner II*, 117 S. Ct. at 1198. Nor is there any merit to the suggestion that the analysis is different “because operators are not currently carrying *any* of the new digital channels.” NCTA at 30 (emphasis in original); see also Time Warner Comments at 23; TCI Comments at 18-19. As the Supreme Court recognized, the key fact is not whether or not the stations are carried today, but rather whether the stations would be carried “in the absence of any legal obligation to do so.” *Turner II*, 117 S. Ct. at 1198.

²⁰¹ See, e.g., MediaOne Comments at 7 (“Cable operators and broadcasters *already* are successfully negotiating carriage of digital broadcast signals”)

In any event, the cable companies' burden arguments are meritless for a number of reasons. First, the Supreme Court has already upheld analog must carry up to the statutory one-third cap. That holding should end the "burden" argument because the must carry requirement for digital and analog signals combined will be subject to the same one-third cap the Court has already ruled is not an undue burden on cable companies.

Second, the burdens imposed by mandatory carriage during the transition are temporary. *Unlike* the burdens upheld in *Turner II*, the additional burden of dual carriage will disappear at the end of the transition.

Third, and more important, the capacity of cable systems is expanding exponentially. Thus, the burden of must-carry as a percent of channel capacity will continue to decrease rapidly.²⁰² This expanded capacity ensures that, as was true in *Turner II*, most cable systems will not have to "drop any programming in order to fulfill their must-carry obligations."²⁰³ And it ensures that, as was true in *Turner II*, the overall burden imposed by must carry will be minimal.²⁰⁴

Finally, virtually all of the arguments the cable companies have raised to suggest that the burden of must carry will be substantial were considered

(emphasis in original); *id.* at 8 n.2 (discussing progress on negotiations regarding voluntary carriage).

²⁰² See *Turner II*, 117 S. Ct. at 1205 (Breyer, J., concurring) ("I agree further that the burden the statute imposes upon the cable system, potential cable programmers, and cable viewers, is limited and will diminish as typical cable system capacity grows over time.").

²⁰³ *Turner II*, 117 S. Ct. at 1198.

and rejected by the Court in *Turner II*. Thus, for example, the Court explicitly noted that cable companies argued that “half of all cable systems, serving two-thirds of all cable subscribers, have no available capacity,”²⁰⁵ that “the rate of growth in cable programming outstrips cable operators’ creation of new channel space,”²⁰⁶ that the “rate of cable growth is lower than claimed,”²⁰⁷ and that “must-carry infringes First Amendment rights now irrespective of future growth.”²⁰⁸ Moreover, as noted above,²⁰⁹ the Court also had before it the assertions of cable companies that the burden of must carry was “exacerbated” by the FCC’s authority to extend must-carry status to digital signals. Nevertheless, in the face of these arguments, the Court upheld the must carry provisions.

C. The Cable Companies’ Concerns Relating to a Fifth Amendment Takings Challenge Do Not Provide Any Justification for Refusing to Require Mandatory Carriage.

Unable to escape either the plain language of the statute or the unambiguous holding of *Turner II*, the cable companies urge the FCC to disregard the clear congressional mandate for mandatory carriage of analog and digital signals by raising the specter of a takings challenge. According to cable companies, the FCC should construe the statute so as not to permit --

²⁰⁴ See *supra* Section I.

²⁰⁵ *Turner II*, 117 S. Ct. at 1198.

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ *Id.*

²⁰⁹ See *supra* Section II.A.2.a.

much less require -- mandatory carriage in order to avoid an arguable takings claim.²¹⁰ This line of argument is unpersuasive.

First, the cable companies' takings argument cannot be used to characterize or qualify what Congress *intended* by the statutory language at issue because Congress expressly *rejected* the takings argument.²¹¹ This fact alone is sufficient to remove the takings concerns from the Commission's analysis.

Second, the rule of construction the cable companies propose is not the law. As the Supreme Court has made clear, construing a statute to avoid a possible takings challenge "does not constitute avoidance of a constitutional difficulty; it merely frustrates permissible applications of a statute or regulation."²¹² The Court thus recognized the argument that the cable companies urge would hamstring federal agencies in their legitimate efforts to regulate economic activity. For that reason, the Court has limited the need to construe a statute to avoid a takings challenge to situations in which

²¹⁰ See, e.g., NCTA Comments at 36 & n.81 (citing *Ashwander v. TVA*, 297 U.S. 288, 347 (1936) (Brandeis, J. concurring) and arguing that "the operative rule is that the statute be construed where possible to avoid constitutional questions").

²¹¹ See H. Rep. 102-628 at 67 (discussing and rejecting the takings argument and concluding that "[t]he reestablishment of signal carriage requirements will not, therefore, result in any unconstitutional taking of cable operators' property without compensation.").

²¹² *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 128 (1985) (internal citation omitted).

“there is an identifiable class of cases in which application of a statute will necessarily constitute a taking.”²¹³

Third, and more important, not only have the cable companies failed to show that mandatory carriage will necessarily constitute a taking, they have failed to raise a substantial takings challenge to the mandatory carriage rules at all. In making their comments, the cable companies place exclusive reliance on the line of case law beginning with the Supreme Court’s decision in *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 426 (1982).

²¹³ *Id.* at 128 n.5 (emphasis added); see also *Bell Atlantic Telephone Cos. v. FCC*, 24 F.3d 1441, 1445 (D.C. Cir. 1994) (same). The cable companies also rely on *Bell Atlantic* to support the proposition that when Commission action will effect a taking, agency discretion must be limited lest “agencies . . . use statutory silence or ambiguity to expose the Treasury to liability both massive and unforeseen.” 24 F.3d at 1445. But there is no plausible argument that the mandatory carriage of digital signals during the transition under the 1992 Cable Act was “unforeseen.” Indeed, as we have argued, the statute *requires* such carriage. But even if such carriage were not required, there is no doubt that Congress required analog must carry before the transition and digital must carry after it, and was aware that the Commission was contemplating the possibility of some dual carriage in the interim. In such circumstances, it strains credulity to maintain that mandatory carriage during the transition was unforeseen. Moreover, as noted above, such solicitude for congressional power is particularly misplaced in light of Congress’ explicit consideration of the Fifth Amendment issues involved in must carry, and Congress’ rejection of any constitutional concerns. In the House Report, for example, the Committee thoroughly discussed the takings argument and concluded that “[t]he reestablishment of signal carriage requirements will not, therefore, result in any unconstitutional taking of cable operators’ property without compensation.” H. Rep. 102-628 at 67. In light of Congress’ rejection of the precise takings argument the cable companies are pressing once again, it would be entirely inappropriate for the Commission to override Congress’ constitutional determination and change the clear course that Congress set.

In *Loretto*, the Court made clear that “a permanent physical occupation of property is a taking.”²¹⁴

The cable companies’ arguments are fundamentally flawed because the mandatory carriage requirements do not resemble a physical occupation of the property of the cable operator. No equipment of the broadcaster need be installed on the property of the cable operator, and the cable company need not cede control over any particular piece of property. This fact alone is sufficient to distinguish the mandatory carriage obligations from the permanent physical occupation at issue in *Loretto*. Indeed, the *Loretto* Court recognized as much when it recognized as critical the very difference that the cable companies seek to have the Commission ignore: the Court carefully distinguished the permanent physical occupation from “even a regulation that imposes affirmative duties on the owner, since the owner may have no control over the timing, extent, or nature of the invasion.”²¹⁵

Against this backdrop, the cable companies’ reliance on *Bell Atlantic* is particularly ironic, because the D.C. Circuit recognized that obligations such as those created by mandatory carriage are not physical occupations in the *Loretto* sense. *Bell Atlantic* involved a challenge to FCC rules that permitted both “physical collocation” -- in which the equipment of a Competing Access Provider (CAP) is placed in the central office of a Local Exchange Carrier

²¹⁴ *Loretto* 458 U.S. at 441.

(LEC), and “virtual collocation” -- in which “the LEC owns and maintains the circuit terminating equipment, but the CAP designates the type of equipment that the LEC must use and strings its own cable to a point of interconnection.”²¹⁶ The D.C. Circuit found a *Loretto*-type takings concern only with respect to *physical* collocation; the Commission’s authority to promulgate virtual collocation rules -- *i.e.*, rules requiring that portions of the LECs’ network be used by third parties while remaining under LEC control -- was not affected. Virtual collocation makes use of the existing telephone network in much the same way that a must-carry requirement makes use of the existing cable network.²¹⁷

Nor is there any merit to the suggestion that the must carry provisions effect a *Loretto*-type taking because they require cable operators to purchase and install equipment to retransmit digital broadcast signals.²¹⁸ Such a

²¹⁵ *Loretto*, 458 U.S. at 436; *see also id.* at 440 n.19 (distinguishing the situation in *Loretto* from one that “required a landlord to provide cable installation if a tenant so desires”).

²¹⁶ *Bell Atlantic*, 24 F.3d at 1444.

²¹⁷ The D.C. Circuit remanded the case to the FCC for a determination whether the virtual collocation rules were severable. *Bell Atlantic*, 24 F.3d at 1447. In the 1996 Telecommunications Act, Congress, in reaction to the *Bell Atlantic* decision, made clear its intent to authorize physical collocation. *See* 47 U.S.C. § 251(c)(6) (explicitly creating a duty to provide physical collocation when practical); *see also* H.R. Rep. No. 104-204 at 73 (1995) (noting the need to undo the effects of the D.C. Circuit’s decision in *Bell Atlantic*).

²¹⁸ *See* Time Warner Comments at 28 n.28.

requirement cannot properly be viewed as a *Loretto*-type taking, but rather as a permissible regulation of property.²¹⁹

What the cable companies seek is not the application of *Loretto*, but its expansion. But the Court explicitly emphasized in *Loretto* that “[o]ur holding today is very narrow.”²²⁰ For that reason, the Supreme Court and the Courts of Appeals have consistently rejected attempts to expand the *Loretto* notion of a permanent physical occupation of property.²²¹

Such an expansion would be particularly inappropriate here for at least two reasons. First, the must carry requirements violate none of the reasonable expectations of the property owner that the Court found critical in *Loretto*.²²² Instead, these requirements simply constitute duties that a

²¹⁹ See *Loretto*, 458 U.S. at 440 (“our holding today in no way alters the analysis governing the State’s power to require landlords to . . . provide utility connections, mailboxes, smoke detectors, fire extinguishers, and the like”). Moreover, in light of the cable companies’ assertions that substantial carriage is occurring voluntarily, there is no reason expect that any additional expenses required to comply by must carry will be significant.

²²⁰ *Loretto* 458 U.S. at 441; see also *FCC v. Florida Power Corp.*, 480 U.S. 245, 251 (1987) (“We characterized our holding in *Loretto* as ‘very narrow.’”).

²²¹ See, e.g., *United States v. Sperry*, 493 U.S. 52, 62 n.9 (1989) (deduction from monetary award); *United States v. 0.59 Acres of Land*, 109 F.3d 1493, 1497 (9th Cir. 1997) (refusing to extend *Loretto* to occupation by electromagnetic fields generated by power lines); *Samaad v. City of Dallas*, 940 F.2d 925, 938 (5th Cir. 1991) (noise from adjacent property is not a *Loretto* taking).

²²² See, e.g., *Loretto*, 458 U.S. at 435-36 (explaining *Loretto*’s per se rule as relying in large part on the protection of “an owner’s expectation”); see also *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1027 (1992) (noting the existence in takings cases of “the logically antecedent inquiry into the nature of the owner’s estate”).

reasonable property owner would expect in a regulated industry.²²³ Indeed, carriage obligations of the sort at issue in the 1992 Cable Act have been a part of cable regulation from the beginning.²²⁴ The reasonable expectations of the property owner that drove the Court in *Loretto* to conclude that a taking had occurred thus counsel precisely the opposite result for must carry.

Second, a decision that the imposition of must carry would constitute a taking opens for constitutional attack a wide range of congressional and Commission regulatory requirements. On the cable front, for example, the leased access provisions and the PEG provisions would be immediately subject to attack, as would the analog must-carry provisions the Supreme

²²³ See *General Tel. Co. of the Southwest v. United States*, 449 F.2d 846, 864 (5th Cir. 1971) (“The property of regulated industries is held subject to such limitations as may reasonably be imposed upon it in the public interest and the courts have frequently recognized that new rules may abolish or modify pre-existing interests.”); *Lucas v. South Carolina Coastal Council*, 505 U.S. at 1027-28 (“in the case of personal property, by reason of the State’s traditionally high degree of control over commercial dealings, he ought to be aware of the possibility that new regulation might even render his property economically worthless”); *United States v. Branch*, 69 F.3d 1571, 1576 (Fed. Cir. 1995) (noting that principles of takings law that apply to real property do not apply in the same manner to statutes imposing monetary liability “[b]ecause of the ‘State’s traditionally high degree of control of commercial dealings’”) (quoting *Lucas v. South Carolina Coastal Council*, 505 U.S. at 1027).

²²⁴ See, e.g., *United States v. Southwestern Cable Co.*, 392 U.S. 157, 166-67 (1968) (mandatory carriage of certain broadcast signals); *United States v. Midwest Video Corp.*, 406 U.S. 649, 653-55 (1972) (mandatory origination provisions); *Black Hills Video Corp. v. FCC*, 399 F.2d 65, 67 (8th Cir. 1968) (must carry rules); 47 U.S.C. § 531(b) (PEG provisions); 47 U.S.C. § 532(b)(1) (leased access provisions). See also H. Rep. No. 102-628, at 67 (“since signal carriage rules were central to regulation of cable television for many years, and most cable systems have continued to carry a number of local over-the-

Court upheld in *Turner II*.²²⁵ But perhaps even greater damage would be inflicted in industries outside of cable. For example, many of the requirements imposed on telecommunications carriers by the Telecommunications Act of 1996, including the duties to interconnect, 47 U.S.C. § 251(c)(2), to provide access to unbundled network elements, 47 U.S.C. § 251(c)(3), and to make their telecommunications services available for resale, 47 U.S.C. § 251(c)(4) would face attacks with renewed vigor.²²⁶ There is simply nothing in *Loretto* or the Court's subsequent cases that would require or even permit such a vast expansion of the Court's fundamental but "narrow" holding.

IV. Comments In This Proceeding Demonstrate That the Commission Must Continue To Provide Strong Oversight To Insure Interoperability Among DTV Receivers and Cable Systems.

The CEMA standard for the basic protocols over the 1394 interface were approved by its R4.8 subcommittee on November 12, 1998.²²⁷ That standard is now known as EIA-775. This is laudable progress, but comments

air signals, imposition of the signal carriage regulations would not disturb any reasonable expectations of investors in cable systems.”).

²²⁵ Although the cable companies initially raised a takings challenge to the analog must carry provisions, they declined to pursue it in the Court of Claims or elsewhere. Their lack of enthusiasm for pursuing the takings claim while vigorously pursuing nearly every other challenge to analog must carry speaks volumes about the merits of the takings claim.

²²⁶ If *Loretto* were expanded as the cable companies desire, the mere fact that the 1996 Act requires compensation from the “interconnecting” parties would not insulate entirely the interconnection requirements from a takings attack. See *Bell Atlantic*, 24 F.3d at 1445 n.3.

filed in this proceeding raise serious concerns that the consumer electronics industry does not agree on the critical importance of implementing a single guaranteed interoperable connection for all digital devices, particularly for the interface to digital cable systems.

NAB applauds the commitment to interoperability and emphasis on Commission oversight recommended by Mitsubishi, who stated that “MEA is a strong advocate of the 1394 interface as a standard to connect DTV receivers and STB’s [set-top-boxes].” Further they stated “...the Commission should continue to carefully monitor this [market-based] process to ensure that all parties agree upon a single and generally accepted method.”²²⁸

Sony also weighed in as an apparent supporter of a 1394 interface standard on their consumer products. However, Sony’s comments always reference “i.LINK” after each 1394 reference,²²⁹ not EIA-775 (the CEMA 1394 Standard). i.LINK is Sony’s current implementation of IEEE-1394 in some of their computer and audio and digital camera product lines.²³⁰ Is this indicative of a variant on EIA-775 or perhaps something else entirely? This demonstrates that different manufacturers may implement different interfaces, in the name of product differentiation or branding, that in fact do

²²⁷ See *CEMA Officially Approves DTV 1394 Interface Specification*, CEMA Media Alert, Nov. 12, 1998.

²²⁸ See Comments of Mitsubishi Electric America (hereinafter “Mitsubishi Comments”), CS Docket 98-120, Oct. 13, 1998 at 2.

²²⁹ See e.g., Comments of Sony Electronics Inc. (hereinafter “Sony Comments”), CS Docket 98-120, Oct. 13, 1998 at 1.

²³⁰ See, e.g., Sony marketing literature at <<http://www.ita.sel.sony.com/>

not interoperate with all other EIA-775 products in all defined ways, or at least introduce consumer doubt and confusion. Both possibilities should be eschewed.

Comments from other consumer electronics manufacturers espouse a variety of differing views on achieving interoperability. For example, Thomson Consumer Electronics, Inc. said, "[T]he IEEE 1394 'firewire' standard is one approach to facilitating cable-DTV receiver interoperability, but it is not a panacea. Its utility is diminished because there is currently no consensus regarding copy protection. . . . [T]he FCC should require cable operators to provide an ATSC-compliant (i.e. 8 VSB) output of DTV signals for input directly into a DTV receiver."²³¹ Thomson urged that the focus should be on developing standards for cable-ready DTV receivers as soon as possible. It is clear that Thomson is not ready to put the 1394 interface in all DTV sets intended to be used with cable.

Philips urges the Commission to take the following initial step for interoperability: "Upon the initiation of the transition and *until such time as an alternative approach to cable compatibility is universally available*, the FCC should require cable operators to provide, in some manner, an 8VSB

vaioworld/ft/ft.html>.

²³¹ Comments of Thomson Consumer Electronics Inc. (hereinafter "Thomson Comments") CS Docket 98-120, Oct. 13, 1998 at 3, 19.

output of DTV signals directly to the receiver.”²³² Like Thomson, Philips prefers to press for timely adoption of standards for cable-ready DTV receivers. Philips mentions IEEE-1394 as, at best, an interim measure to facilitate cable compatibility, and describes the standard as “a piecemeal solution to – and by no means a panacea for – optimal cable compatibility.”²³³ Although Philips professes that it will make 1394-compatible DTV receivers available to the public within 18 to 24 months of completing the standard,²³⁴ their clear lack of preference for implementing this approach in favor of 8VSB interface or cable-ready DTV receiver standards is apparent.

Zenith also promotes the importance of a direct RF connection to the DTV set, using the 16VSB standard.²³⁵ They advised the Commission not to require particular DTV interfaces and advised that: “The 1394 interface deserves a place in differentiated, more featured product where it would be useful.”²³⁶ They seem to feel consumers should have to purchase a high end product to get DTV signals through digital cable systems (unless the 8/16 VSB output were made available).

²³² See Comments of Philips Electronics North America Corporation (hereinafter “Philips Comments”), CS Docket 98-120, Oct. 13, 1998 at 11 (emphasis added).

²³³ *Id.* at 12.

²³⁴ *Id.* at 12. We note that 24 months from agreement on an interface standard to production is the same amount of time used from agreement on a digital transmission standard to production of DTV receivers generally, a much more challenging task. Philips proposed time frame completely misses Fall ’99 product introductions.

²³⁵ See Zenith Comments at 6.

²³⁶ *Id.* at 10.

CEMA, having just successfully completed the IEEE 1394-based interoperability standard, curiously concentrates its focus elsewhere as it urges that the Commission “do everything possible to encourage the industry adoption of standards to allow manufacturers to design cable-ready DTV receivers.”²³⁷ Although we agree this is an appropriate long-term goal, accomplishment of this task requires such receivers to provide adequate security from the cable operators’ perspective. Developing such a solution should be on a parallel track, and not be allowed to divert attention from the critical deployment of receivers and set top boxes in the fall of 1999 that interoperate using the 1394 interface.

CEMA also champions the misplaced objective of compatibility as contrasted with interoperability. In the section of their comments titled “Multiple Options Exist for Digital Television Receivers to be Fully Functional With Cable Systems”²³⁸ they outline all the different connections that *might* work, 1394 being *one* of the options listed, but without special emphasis. Providing alternatives is only appropriate if every consumer device offers at least one common interconnection method so that interoperability is assured. Expecting interoperation when there are multiple possible choices among connections requires that the consumer know which output connection is present on his/her digital cable set-top box.

²³⁷ See Comments of the Consumer Electronics Manufacturers Association (hereinafter “CEMA Comments”), CS Docket 98-120, Oct. 13, 1998 at 19.

²³⁸ See CEMA Comments at 21.

The consumer (and retail sales force) education task to enable the consumer to know this technical information about the cable set-top box so that a DTV with the same connection can be purchased is formidable, to say the least. Also, a product that is otherwise desirable might not have the same connection as the set top box. The net result of this plethora of options would be to introduce delay in the purchases of DTV sets due to confusion, as the “right” interface would not be selected by many consumers, and they would likely tell their friends and neighbors about the unsatisfactory experience. One standard interface that can be relied upon to be included in every digital device is the correct solution. IEEE-1394, as documented in EIA-775, is the best candidate for that standard.

In perhaps the most disingenuous and misinformed comments on this issue, Microsoft misfires in attempting to convince the Commission that must-carry should not be considered at this time because, with respect to the IEEE-1394 standard, “no standards exist yet to support Internet Protocol transmission.”²³⁹ In struggling to justify this point, Microsoft attempts to tell the Commission that the IEEE-1394 standard will not pass Internet Protocol in connection with cable carriage of DTV broadcasts. This is ridiculous and demonstrates Microsoft’s lack of understanding of the purpose of the IEEE-1394 based interface for cable set-top box interoperability with DTV receivers.

The IEEE-1394 interface implementation philosophy among the knowledgeable standards developers has always been to allow passage of MPEG transport streams (the packaged services) without disturbing the payload bits (the services themselves). If the original DTV broadcast signal included IP data in the broadcast as an enhancement to the broadcast service, it would be passed through the IEEE 1394 interface from set-top box to DTV receiver and made available to viewers just as it would be via over-the-air transmission (assuming that programming-related data is afforded the same rights for must carry as the video and audio signals as NAB has suggested²⁴⁰). Microsoft further demonstrates their fundamental lack of understanding of the purpose of the IEEE-1394 interface for cable interoperability when they state “the 1394 connector lacks sufficient bandwidth to pass through baseband 1080I signals by more than a factor of two”²⁴¹ as an issue that must be resolved before IEEE 1394 can be implemented. In fact, baseband signals were never intended to be passed across the 1394 interface—the whole point of using the IEEE 1394 solution is that the compressed and packaged data stream (which cannot be more than the 19.4 Mbps of payload data transmitted by the broadcaster) can easily be

²³⁹ Comments of Microsoft Corporation (hereinafter “Microsoft Comments”), CS Docket 98-120, Oct. 13, 1998 at 9.

²⁴⁰ NAB Comments at 37.

²⁴¹ Microsoft Comments at 12.

passed across the interface.²⁴² The 200 Mbps capability of the version of the IEEE-1394 standard being adopted by the industry is more than adequate for the task for which it being asked to perform.

During the development of the CEMA DTV interface standard based on IEEE-1394, it became clear to NAB that some important end-to-end interoperability issues were not being addressed in the emerging standard. It was also clear that there were different views among consumer electronics manufacturers and cable industry representatives about the desirability or likelihood of offering the EIA-775 Standard in their products. NAB and MSTV then sent a joint letter to Chairman Kennard to apprise him of the current status of this situation. The letter summed up the situation by stating:

“The baseline digital interface standard to enable digital set-top boxes to communicate with and send DTV signals to DTV sets is not enough to guarantee that set makers and set-top box manufacturers will build this digital connection into their equipment. Some manufacturers don’t want to incur the modest expense of implementation, some have other ‘favorite’ interfaces, and some are concerned that a standard for digital copyright protection is needed...”

With the goal of achieving universal deployment of interoperable products by November 1999, the letter concluded with a request:

“Now NAB and MSTV ask that you immediately form an inter-industry group, chaired by you or another Commissioner, to facilitate

²⁴² MSTV also mistakenly confused the intended function of the IEEE-1394 interface with baseband video interface. See Comments of the Association for Maximum Service Television, Inc. (hereinafter "MSTV Comments"), CS Docket 98-120, Oct. 13, 1998 at 42: “The [1394] interface standard as proposed to date may not permit the transmission of HDTV signals to the set in their original format.”

(1) completion of current standards setting and (2) widespread implementation of set-top box/DTV receiver interoperability.”²⁴³

NAB applauds the leadership position taken by Chairman Kennard in his speech at the "Dawn of Digital Television" Summit Meeting in Washington, D.C. on November 16, 1998 when he said:

“At my direction, therefore, the technical staff at the FCC, under the leadership of FCC Office of Engineering and Technology Bureau Chief Dale Hatfield, over the upcoming months will be hosting a series of inter-industry forums to discuss DTV compatibility and interoperability issues. Many of the technical issues that must be resolved will require cooperation among industries with diverging interests. I believe that government can play a facilitative role by providing a neutral but knowledgeable forum in which industry participants can come together to exchange information and points of view.”²⁴⁴

Clearly the need for this forcing function has been correctly assessed by Chairman Kennard and NAB stands ready to assist and looks forward to working with all parties to insure public access to digital broadcast signals via cable.

V. Other Important Issues.

A. Appropriate Policies and Technical Standards Have Been Established For Navigational Systems And Should Be Applied To Cable Carriage Of Broadcast DTV Signals.

The issue of navigational requirements for Open Video Systems (OVS) was addressed in CS Docket 96-46, (Implementation of Section 302 of the

²⁴³ See Letter from Eddie Fritts, President & CEO, NAB and Margita White, President, MSTV to William Kennard, Chairman, FCC (Nov. 10, 1998).

²⁴⁴ Chairman William Kennard, address at the "Dawn of Digital" Summit Meeting in Washington, D.C. (Nov. 16, 1998) (as prepared for delivery).

Telecommunications Act of 1996). NAB agrees with the commenters²⁴⁵ that argued that the Commission's policy with respect to navigational data associated with cable delivery of broadcast signals should be consistent with the decisions in that proceeding.²⁴⁶

NAB also agrees with the comments²⁴⁷ which cited the navigational requirements for Multichannel Video Programming Distributors (MVPD) which were addressed in CS Docket 97-80, (Implementation of Section 304 of the Telecommunications Act of 1996) and urges that decisions in this matter be consistent with those decisions.

The ATSC (A/65)/SCTE (DVS097) standards for navigational information (PSIP) provides the means for transport to facilitate the required elements of the Commission's rules MVPD allowing use of any navigation

²⁴⁵ See ALTV Comments at 52; Comments of the National Broadcasting Company (hereinafter "NBC Comments"), CS Docket 98-120, Oct. 13, 1998 at 5-6; Comments of Benedek Broadcasting Corporation, Chronicle Broadcasting Company, Draper Media Group, Raycom Media, and Spartan Communications (hereinafter "Broadcast Group Comments"), CS Docket 98-120, Oct. 13, 1998 at 23; MSTV Comments at 36-37; Comments of Paxson Communications Corporation (hereinafter "Paxson Comments"), CS Docket 98-120, Oct. 13, 1998 at 30.

²⁴⁶ An Open Video System operator is required to transmit a video programming provider's identification if it is transmitted as part of the programming signal, and ATSC PSIP data qualifies as such. See CFR 47 § 76.1512 (d).

²⁴⁷ For example, See Comments of Gemstar International Group Limited and Starsight Telecast, Inc. (hereinafter "Gemstar Comments"), CS Docket 98-120, Oct. 13, 1998 at 5.

system.²⁴⁸ NAB also agrees with those commenters that pointed out the need for easy consumer access to DTV signals.²⁴⁹

A number of commenters advised the Commission about the importance of requiring that the Program and System Information Protocol (PSIP) data in broadcast signals be carried by cable systems without alteration.²⁵⁰ NAB is heartened by the broad recognition of the importance of this standard and continue to urge the Commission to mandate that all cable systems comply with its requirements. The PSIP Standard was developed with the active participation of cable equipment manufacturers and is designed to meet the needs of both cable and terrestrial broadcasting. One commenter, General Instrument, objected to carriage of PSIP data,²⁵¹ a

²⁴⁸ CFR 47 § 76.120 "No multichannel video programming distributor shall prevent the connection or *use* (emphasis added) of navigational device to or with its multichannel video programming system,..."

²⁴⁹ See ALTV Comments at 72; Comments of Granite Broadcasting Corporation (hereinafter "Granite Comments"), CS Docket 98-120, Oct. 13, 1998 at 10; Comments of Corporation for General Trade, Inc. (hereinafter "General Trade Comments"), CS Docket 98-120, Oct. 13, 1998 at 14; Comments of Pappas Telecasting Incorporated, et al. (hereinafter "Pappas Comments"), CS Docket 98-120, Oct. 13, 1998 at 33-34; Paxson Comments at 31.

²⁵⁰ See ALTV Comments at 73-74; Comments of the Association of Americas' Public Television Stations, The Public Broadcasting Service and The Corporation for Public Broadcasting, CS Docket 98-120, Oct. 13, 1998 at 47; CEMA Comments at 13-14; MSTV Comments at 33-34; NBC Comments at 6; Philips Comments at 2, 7 and 10; Sony Comments at 9; Thomson Comments at 5.

²⁵¹ See Comments of General Instrument Corporation, CS Docket 98-120, Oct. 13, 1998 at 7.

position that is clearly self-serving as they are actively promoting the adoption of their own preferred method of system information.²⁵²

B. The Commission's Must Carry Rules Should Provide for Priority Carriage of One Signal of Every Must-Carry Eligible Broadcaster.

Section 614(b)(4)(B) of the Cable Act directs the Commission to “establish any changes in the signal carriage requirements of cable television systems necessary to ensure cable carriage of such broadcast signals of local commercial television stations” which have been modified for the provision of advanced television. The Conference Report accompanying the Cable Act makes clear that the purpose of directing the Commission to adjust the must carry rules is to ensure that cable systems will carry the modified DTV signals “in accordance with the objectives of this Section.”²⁵³

As the objectives of the must carry section of the Cable Act seek to preserve the benefits and multiplicity of free, over-the-air local broadcast television,²⁵⁴ so too must the Commission's rules support this goal, as NAB said in initial comments. To that end, the base line for such adjustment of the rules is carriage of one signal of each eligible broadcaster. So comporting the rules will ensure that, in situations where the one-third cap is reached, the “multiplicity” of broadcasters will be able to reach their audience with *at*

²⁵² Multiple standards of providing navigational information would cause interoperability problems and lead to consumer frustration.

²⁵³ See H.R. Conf. Rep. No. 862, 102d Cong., 2d Sess. 67 (1992).

²⁵⁴ See *Turner I*, 512 U.S. 622 (1994).

least one of their signals.²⁵⁵ The choice of which signal, NTSC or DTV, is first carried by cable systems should be left to the broadcaster. The rules will thus not need further modification in this regard to accommodate changed priorities depending on which audience, DTV or NTSC, is larger or more important to the broadcaster as the transition proceeds.

To not provide for priority carriage of one signal of every eligible broadcaster before both signals of another broadcaster is carried (when faced with a cap) would undermine the goal of the Cable Act that a “multiplicity” of broadcast outlets be preserved via must carry’s required access to the audience.

²⁵⁵ See Comments of ALTV, *supra*, at fn. 129.

Conclusion.

For all these reasons, as well as those adduced in our initial comments, the Commission should follow the unambiguous mandate of the 1992 Act and require carriage of both analog and digital signals during the transition.

Respectfully submitted,



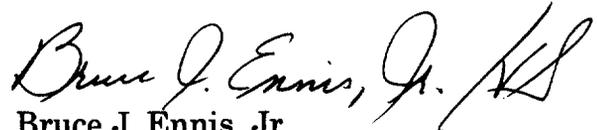
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December 22, 1998

EXHIBITS

EXHIBIT A

media  Central**Cable World** Bandwidth Debate: Just How Much Will Be Enough?

By Jim Barthold

As long as there has been a cable industry, there have been dire predictions that there's not enough bandwidth to accomplish everything. Today, with the specter of must-carry high definition television (HDTV) looming and the increased popularity of high-speed data, cable telephony and even video-on-demand, the whispers are getting louder.

There just isn't enough bandwidth.

"I'll tell you what the determining factor is going to be. It's the amount of broadcast programming that the operator wants to put out, programming content that he just wants to spray all over the homes in his area. That's what really chews up the bandwidth," said David Grubb, marketing VP in General Instrument Corp.'s transmission network systems business unit.

Paul Connolly, VP-marketing and network architecture with Scientific-Atlanta Inc.'s transmission network systems is equally alarmist.

"The biggest bandwidth hog is still obviously analog channels, if you assume with your business case that you're competing with direct broadcast satellite so you want a lot of analog channels," he noted.

So, how much bandwidth is enough?

"We think 20 GHz is what we want," joked Tony Werner, senior VP-engineering and technical operations for Tele-Communications Inc.

On a serious note, Werner, and other industry leaders, feel that the 750 MHz plateau on which the industry has settled, with some deviations to 450, 550 and 860, is a comfortable place to be.

"The issue isn't how much is enough. I think 750 is certainly enough," Werner said.

Of course, if 860 was available at the right price, what then?

"The analogy I use is if you're out buying a house and all you need is 3,000 square feet, but there's one over there that's 3,800 square feet for an extra \$2, most people will opt for the extra 800-square feet, even though there's absolutely no requirement today or in the future," he continued.

That's because the way the industry looks at bandwidth has changed.

"Digital broke the paradigm of you upgrade to the next technology bandwidth, keep adding 6 MHz channels and when you run out, you run back to the vendors and ask, 'What can you do for me today?'" explained Alex Best, senior VP-engineering for Cox Communications Inc. "The only freedom you had to add more channels was to add more bandwidth. Now we have two additional degrees of freedom."

One of those is using digital compression more efficiently by moving from 64 to 256 QAM (Quadrature Amplitude Modulation). The second is subdividing fiber-fed nodes based on customer demand.

MediaOne is pursuing both routes, said senior VP-engineering and technology Jerry Wolfer.

"What we have going for us, versus what you might have had when you went to 450 or 550, is that we've moved to digital and digital has given us these modulation efficiencies," he explained.

This digital capability, he pointed out, lets systems compress two HDTV signals into a single 6 MHz slot - despite whatever format is used, effectively obliterating the must-carry threat.

"We're figuring 18 megabits per channel, and that's 1080i (interlaced), that's 720p (progressive), that's whatever you want it to be," Wolfer pointed out. "I built the plant here around 1080i, knowing that there's some upside in that because not everyone is going to do 1080i."

If digital solves the HD problem, then node size does the job for contention-based services such as telephony, high-speed data and video-on-demand.

"If they're (data services) extremely popular and people are using high bandwidth services over them, we can subdivide our nodes to make them smaller," said Jim Chiddix, chief technical officer for Time Warner Cable. "If they're smaller, we get to re-use the frequencies. The same is true of video-on-demand. With just two or three 6 MHz slices we can serve a lot of video-on-demand customers and, if we need to subdivide those nodes, we can do that there as well."

While every engineer feels that 750 is plenty, Werner sees places where 450 or 550 will suffice.

"You have to have enough bandwidth to offer high-speed data, perhaps some telephony, which is likely to be embedded in the high-speed data under an IP (Internet Protocol) scenario," he explained.

Relinquishing two or three channels for those services still leaves 62 analog channels in a 450 MHz system, he noted. Werner would then take 12 of those channels and compress them into a digital tier, leaving a 50-channel analog offering.

"That's probably fairly competitive," he said.

It's also on the low end. Cox, for one, uses 650 MHz of its bandwidth for analog and devotes the rest to digital, telephony, high-speed data and whatever else is coming up in the future, said Best. He can also take the 50 MHz he has dedicated to near video-on-demand and switch it to pure VOD, if that becomes necessary, he said.

"We have 180 channels of video, 40 channels of audio, a (program) guide, high-speed data, telephony service and no obvious need today of saying we need to do something else," he said.

Impact

Best said that no matter how wildly popular high-speed data becomes, or how much bandwidth consumers grab, Cox will be the last to feel the impact.

"Before I have a problem @Home (Network) is going to have a problem. Before @Home has a problem, the true Internet backbone infrastructure has a problem. Long before I have to allocate more 27 megabits channels for the Internet, @Home is going to have to beef up its backbone infrastructure," Best predicted.

"I can handle 10 of my 50 Internet customers trying to stream video down my cable system long before @Home can handle thousands of nodes of five people trying to stream video. And long before they have a problem the Internet is going to have a problem," he added.

That's because the cable plant is amazingly flexible, said Wolfer. For wildly successful services, he said, he'll just throw in block converters.

"At the node, when you block-convert you have all this fiber to return on," he said. "At each node we have 500 homes passed, but that usually represents four trunk lines ... running off there that have 125 homes per trunk on the coax."

I have four 750 MHz shots going out of that node and I can block convert any single one of those.

"I just can't see where I'm going to run out of capacity on high-speed data because I have six fibers sitting at my node and I really have four 750 MHz equivalents on that node," he continued.

While most agreed that 750 MHz is more than enough, there were a few signs that if 860 or even 1 GHz became economically feasible, it wouldn't be ignored.

"If I can install a 1 GHz upgrade at a 5% premium to 750, I'll do it," said Best. "If they (vendors) want a 50% premium, I think I'll take my chances on 256 QAM and subdividing the nodes."

Wolfer agreed, but pointed to the time-to-market factor for MediaOne to deploy its passband networks versus other options, such as fiber-to-the-curb baseband models being proffered by telcos as a reason for not deviating from the 750 plan.

"My argument is I can get to market faster; I can get to market with more bandwidth; and I can get to market with more reliable product," he contended.

(August 10, 1998)

[More Cable World](#)

Not many surfing and shopping days left

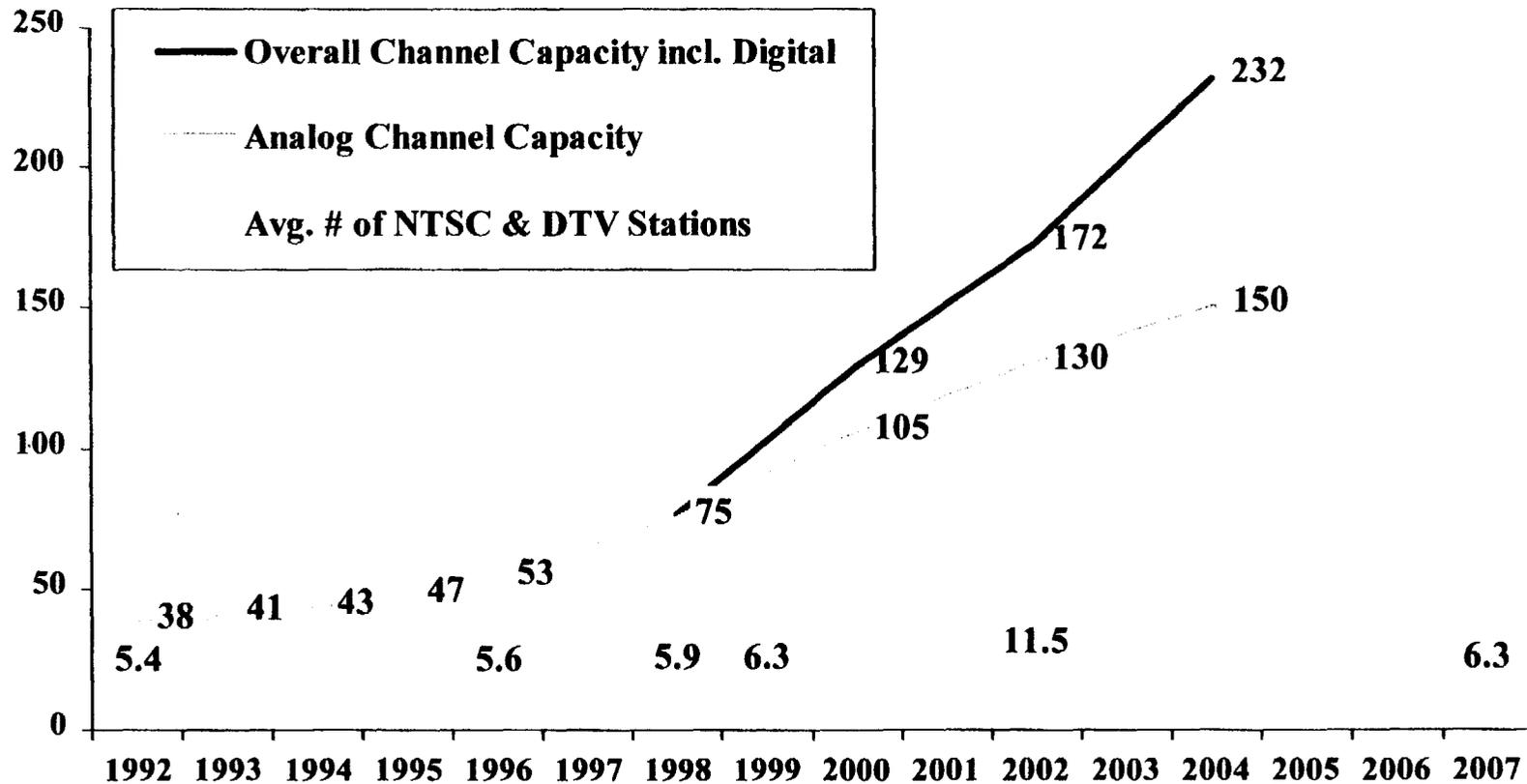
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EXHIBIT B

Cable Growth Chart

Cable Channel Capacity: Average Cable System vs. Number of Local Broadcast Signals, Including DTV



Source: Channel capacity data are from Paul Kagan Associates, Inc. estimates, "Channel Logjam Eases-- Capacity Projections to 2004," *Cable TV Programming*, July 31, 1996. Channel capacity with digital estimates are calculated using double (see "Digital Doubles Channel Capacity," *Pay TV Newsletter*, September 25, 1998, Paul Kagan Associates) the above cited Kagan capacity estimates, adjusted for the percentage of subscribers with digital service, Donaldson, Lufkin & Jenrette, published in *Broadcasting & Cable*, November 10, 1998, Cable TV Operations supplement, p. 15. The average number of NTSC and DTV stations reported is the total number of these stations divided by the number of television markets for each of the years. The number of DTV stations used in the calculations are: 40 DTV stations on air in 1998, 120 by 2000, and 1,200 by 2002. It is assumed that in 2007 the NTSC stations are no longer broadcasting.

EXHIBIT C

May 29, 1998

Mr. Brian P. Lamb
C-SPAN
400 North Capitol Street, N.W.
Suite 650
Washington, D.C. 20001

Dear Brian,

As President Reagan once remarked, "There you go again."

In your recent letter to Congress, you repeat the same tired claim that the adoption of must carry in the 1992 Cable Act caused C-SPAN to be dropped in "over 10 million households," and that "we still haven't recovered all of those losses." That sounds like a great story. Unfortunately, as you well know, it isn't true.

C-SPAN and other cable programmers were required in the *Turner* litigation to come forward with evidence to support their claims that must carry resulted in loss of carriage. Here's what that evidence showed:

- Nationwide, cable operators continued to carry *99.8 percent* of the cable programming that they carried before must carry.
- In October 1992, when Congress adopted must carry, C-SPAN was carried on 4,253 cable systems. In September 1994, more than a year after must carry went into effect, it was carried on 4,799 systems. By March 1995, it was carried on 5,200 systems, almost a 25 percent *increase* in cable carriage.
- When must carry was enacted, C-SPAN 2 was carried on 933 systems. In September 1994, carriage had gone up to 1,200 systems, and it was seen on 1,357 systems by March 1995. Thus, after must carry, the number of cable systems showing C-SPAN 2 went *up* by more than 45 percent.
- The same is true if you look at subscribers. In October 1992, C-SPAN was available in 53,600,000 households. That number went up by September 1994 to 58,640,000, and continued to rise to 62,400,00 households in March 1995. That's more than a 16 percent *increase*. For C-SPAN 2, it could be seen in 24,300,000 cable homes before must carry and in 37,000,000 in March 1995. Instead of losing households as you claimed, the subscriber figures you produced under oath show that C-SPAN 2 *gained* more than 52 percent in household availability after must carry.

Mr. Brian P. Lamb
May 29, 1998
Page 2

- While you now claim that must carry resulted in C-SPAN's being dropped from cable systems, you told the FCC that its rate regulation rules were the reason C-SPAN was being dropped.
- At C-SPAN's deposition in April 1995, your witness was asked under oath to identify each cable system from which C-SPAN had been dropped because of must carry. You were only able to identify *eight* cable systems (out of more than 11,000) where you claimed C-SPAN had been dropped, and eight more where C-SPAN 2 had allegedly been dropped. As the deposition revealed, for most – if not all – of those systems, you had no evidence that must carry was the cause of the drop. Indeed, in one of the eight systems where you claimed C-SPAN 2 had been dropped, the evidence showed that the reason claimed by the cable system was “that all viewership surveys consistently demonstrate that C-Span 2 is the lowest viewed service on their line-up.”

The evidence of C-SPAN's own witness and documents is that, after must carry, C-SPAN and C-SPAN 2 were both carried on more cable systems and seen in far more households than before. You couldn't prove your claims of losing millions of viewers in court; it's time to stop peddling the same old line to Congress.

Kindest regards,



cc: House and Senate Leadership
Members of the House and Senate Commerce Committees
Members of the House and Senate Judiciary Committees
Members of the Federal Communications Commission

EXHIBIT D

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Cable giants flex multiplexing muscle

In rush to convert to digital TV, independent networks get shoved aside in favor of well-established brands

By Emory Thomas Jr.
MSNBC

Oct. 26 — Digital technology was supposed to be a savior for the likes of the Outdoor Channel, a small hunting and fishing independent television network. As cable operators convert their vast infrastructures to digital service, they're able to offer dozens more channels to their subscribers. But Outdoor and other independents are already getting shoved aside in favor of well-established brands.

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'You might have the best cereal in the world, but it's still extremely difficult to get shelf space. That's basically the analogy with us.'
— DEAN GRIDLEY
The Outdoor Channel

THE ONSET OF DIGITAL cable service - which typically brings 40 or more additional channels into a subscriber's home — has triggered a mad scramble to maintain market share among cable-TV's programming leaders. To meet the threat of potential audience dilution, HBO, Discovery, MTV and other heavyweights are creating multiple variations of themselves.

So instead of gaining access to the independent Outdoor Channel, most subscribers are more likely to receive Discovery Science, VH1 Soul, HBO Signature (movies geared to a high-brow crowd) or some other

niche-oriented offshoot of a major channel brand.

INTERACTIVES Check out the new channels. An interactive guide.

In a new digital tier of service from MediaOne in Detroit, for example, the bulk of the 23 video-programming channels are "multiplex" versions of established channels, according to a company official. Some big-name channels have begun producing as many as a half-dozen variations of themselves.

"Any payback will come years down the road," acknowledges Matt Farber, senior vice president for MTV and VH1. "We certainly want to be present with our brands as people start to watch more channels."

The effect of this programming mitosis is far from clear. Cable operators are only now beginning to implement the digital services that are eventually expected to replace analogue systems altogether. And very little ratings information on the fledgling offshoots has been compiled.

But at least in its early phase, the digital rollout is taxing the resources of the large programmers and placing an unexpected squeeze on small, independent networks that were hoping digital cable capacity would automatically deliver them from obscurity.

"You might have the best cereal in the world, but it's still extremely difficult to get shelf space," says Dean Gridley, general counsel and a director of the Outdoor Channel. "That's basically the analogy with us."

The Outdoor Channel, featuring hunting and fishing shows, is an underdog in a world still controlled by names like HBO, MTV and Discovery.



www.OutdoorChannel.com

The Outdoor Channel has scratched out a small but devoted subscriber base of about 2.4 million hunters and fishers, and it's on the verge of turning a profit after five years in operation. But despite some modest recent gains on new digital systems, the company is learning not to expect

automatic gains from the digital expansion of channel capacity.

"When you have that multiplexing, it starts to suck up potential channel space fast," Gridley says.

John Forbess, president of the recently founded Documentary Channel, is similarly worried, though he tries to maintain optimism for the long-term. "While we are concerned with efforts of the established programming entities to lock up vast amounts of channel capacity," he says, "we do think that ultimately, good, new and different content will always find its way

‘These giants are just protecting their turf. It’s very, very smart business. The only problem is it may have nothing at all to do with what the consumer wants.’

— **BOB MARIANO**
Cable-programming consultant, Compsan

onto cable operators’ lineups.”

Distribution has been a major hurdle in the cable-TV programming business for decades. Typically today, operators have about 45 channels on their most popular “expanded basic” subscription plans. And while that may seem like a large number, many of the spots are filled quickly by network affiliates, local stations and standard cable channels like TBS and ESPN, leaving little or no room for niche programmers like the Documentary Channel.

But cable companies — at the expense of billions of dollars — are quickly adding digital technology that can expand capacity by at least 35 to 40 channels. Digital tiers of TCI and MediaOne often offer 75 to 100 different stations, sometimes even more. The conversion is time-consuming; just over 1 million of the nation’s 65 million cable subscribers are digital today, though perhaps a decade from now, virtually all of them will be.

So with the 100-plus-channel universe rapidly approaching, programmers believe they need to act now to stake out the digital territory. “These giants are just protecting their turf,” says Bob Mariano, a cable-programming consultant with Comspan in Los Angeles. “It’s very, very smart business. The only problem is it may have nothing at all to do with what the consumer wants.”

Indeed, industry executives are fearful of cannibalizing their own audiences at great expense for little, if any, return.

“Some [programmers] seem to be multiplexing for the sake of multiplexing,” notes one official with a large programmer. “How many animal channels do you really need?”

“I think they’re diluting their own audience,” says Jake Hartwick, the Outdoor Channel’s executive vice president. “Next thing you know, it’s going to be Discovery Bugs” channel.

Some programmers intend to spend heavily on new shows for their offshoot channels. HBO, for example, is reportedly expected to begin spending roughly \$20 million on new programming this year. MTV is also investing in new shows.

“We’re creating new programming specifically for the digital world,” says an MTV spokeswoman. “It’s new content. It’s not just time-shifting.”

Time-shifting is the term programmers use for a less-expensive approach to multiplexing. Encore, for instance, has the rights to hundreds of contemporary Hollywood movies, and by simply offering more of them simultaneously through additional channels, it expects to reap bigger audiences. Since it already owns access to the movies, creating extra channels shouldn’t create much extra cost.

But most non-movie channels don’t have the luxury of all that “free” programming sitting on the shelf. As a result, entertainment-industry executives foresee a new

era of spending ahead — all for smaller, more niche-oriented audiences.

“Clever shuffling of the deck only carries you so far,” says Mariano. “Sooner or later it catches up with you.” And at that point, he notes, you either opt off the air, or pony up more money for programming.

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EXHIBIT E

Updated C-SPAN "Typical" Channel Line-up

C-Span's "Typical" Line-Up 59 Channels ¹		Typical System With 90 Channels- As Of December 1998 ²		Typical System with 172 Channels ⁴ as of 2002	
ABC CBS NBC PBS PBS FOX WB UPN Independent Independent		ABC DTV CBS DTV NBC DTV FOX DTV PBS DTV ³ 26 Additional Channels Available for Future Cable Networks		PBS DTV WB DTV UPN DTV Independent DTV Independent DTV 77 Additional Channels Available for Future Cable Networks	
Public Access Government Access Educational Access					
HBO Showtime HBO2 HBO3		HBO Family Cinemax Cinemax2 Starz! BET Movies/Starz The Movie Channel		HBO Comedy HBO Zone HBO EAST HBO WEST MoreMax ActionMax ThrillerMax	
PPV1 PPV2 PPV3		PPV4 PPV5 PPV6 PPV7	PPV8 PPV9 PPV10 PPV11		
Black Entertainment Television The Learning Channel MSNBC TBS TNT Court TV Encore Country Music Television The Disney Channel Sci-Fi Channel Animal Planet Odyssey FX QVC American Movie Classics Univision The Weather Channel Headline News CNN	Discovery Channel ESPN USA Network The Family Channel A&E Network Nickelodeon VH1 MTV EWTN Cartoon Channel Prevue Guide C-SPAN C-SPAN2 ESPN2 CNBC TV Food Network Home & Garden TV The History Channel Lifetime Network	The Golf Channel America's Health Network Great American Country Comedy Central Knowledge TV Ovation Game Show Network Prevue Channel ZDTV International Channel Filipino Channel Speedvision		C-SPAN3 C-SPAN4 C-SPAN5 Discovery Civilization Discovery Home Discovery Kids Discovery Science Discovery Travel Encore Love Stories Encore Westerns Encore Mysteries Encore Action Encore True Stories Encore WAM! Biography Channel History Channel International	

¹ The C-SPAN (www.c-span.org) web site shows this typical cable system with 59 channels and a line-up similar to the one shown. C-SPAN does not indicate which year this 59 channel system was "typical". They rhetorically ask "If you were the cable operator which 10 channels would you take away from your customers" to make room for DTV must carried channels. This revised chart shows the likely actual "non-impact" on the "typical" cable subscriber as of December 1998 and of 2002, with the greatly expanded capacity estimated for those years.

² NCTA itself estimates "by year-end 1998 the average cable customer is expected to receive 90 channels." "Cable Television Industry Overview" www.ncta.com/overview98_1.html September 14, 1998

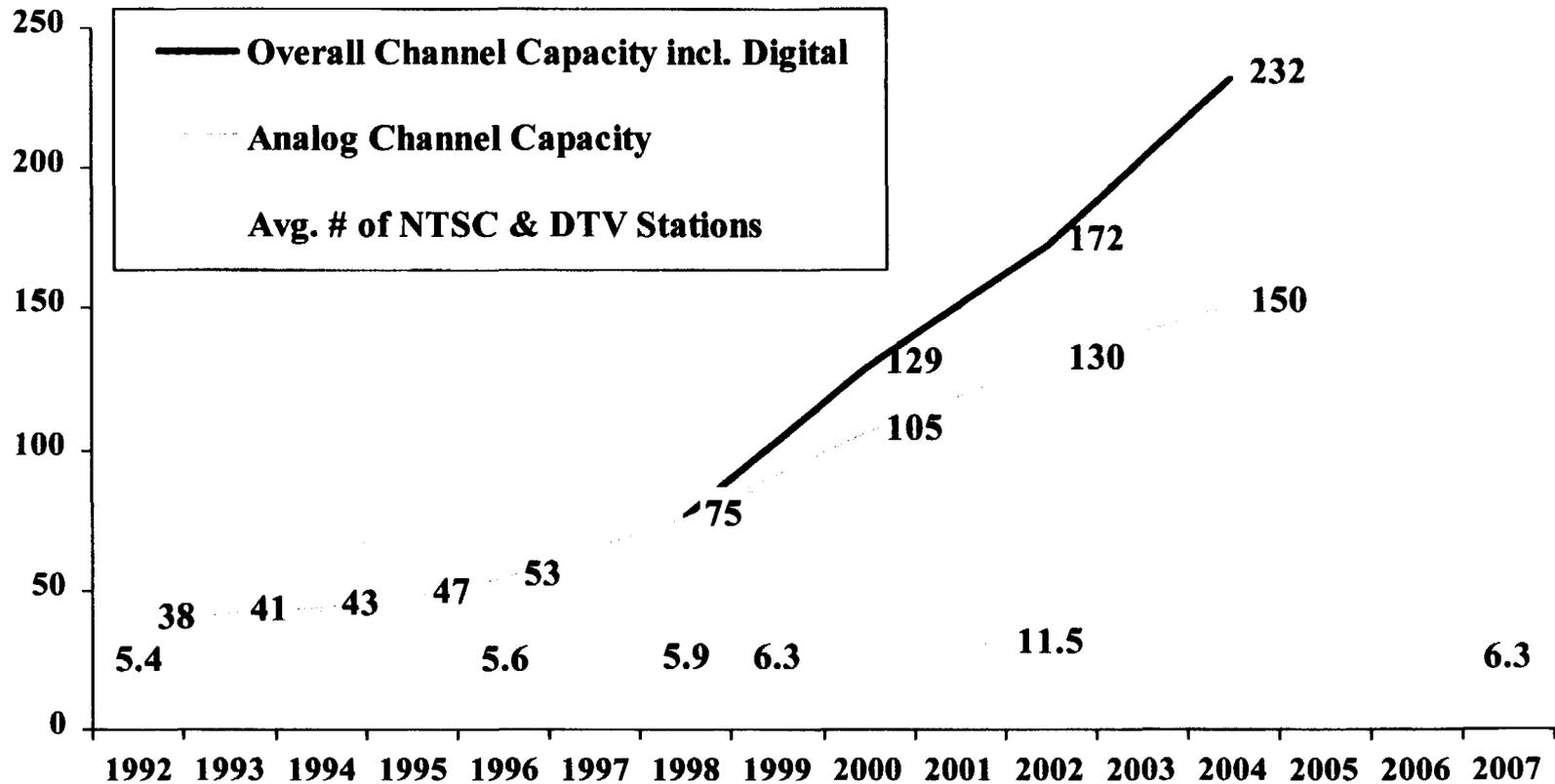
³ This actually overstates the typical number of DTV broadcasters on the air, as of December 1998.

⁴ Average Channel Capacity including digital, Exhibit B

EXHIBIT F

Cable Growth Chart

Cable Channel Capacity: Average Cable System vs. Number of Local Broadcast Signals, Including DTV

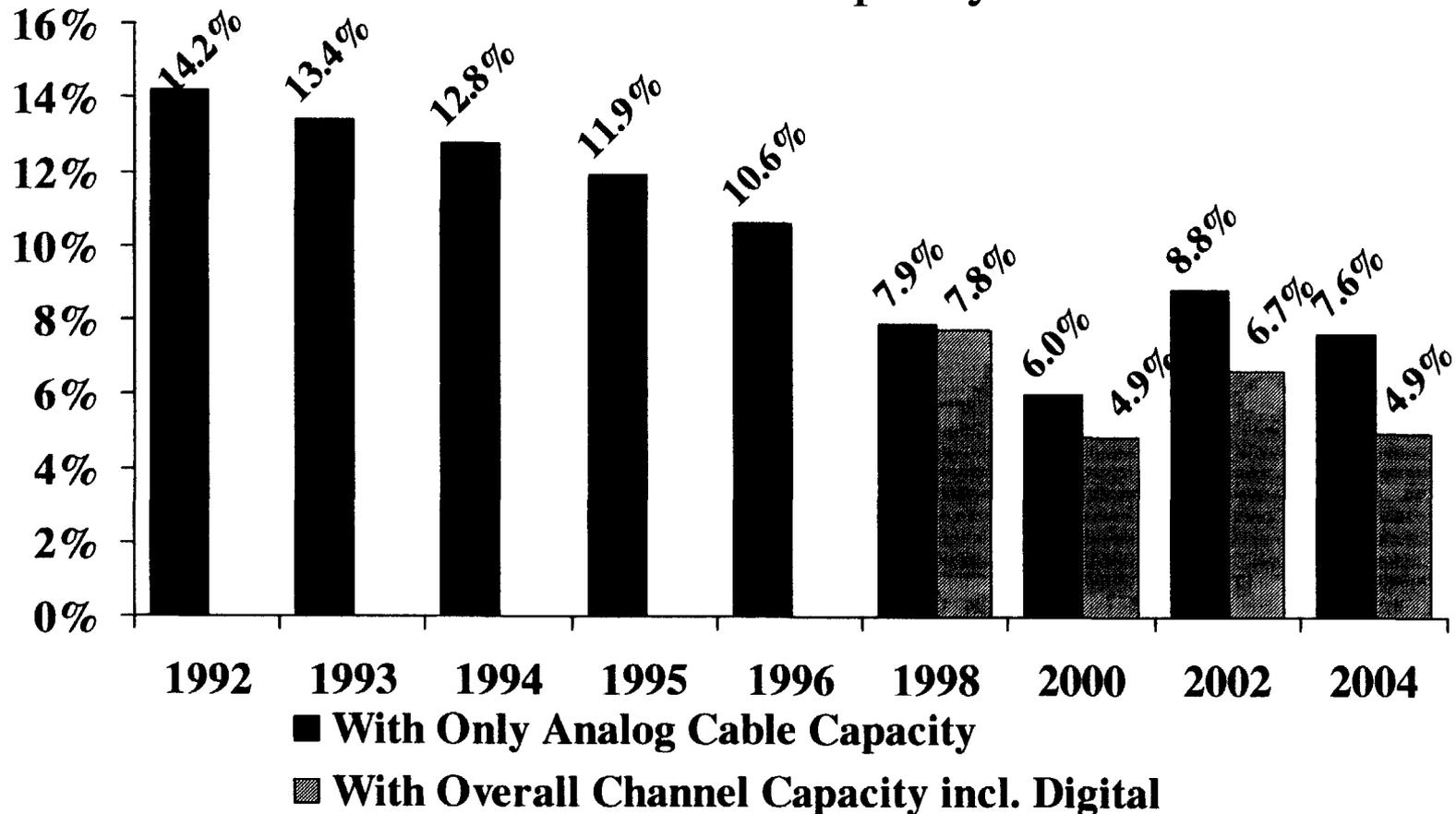


Source: Channel capacity data are from Paul Kagan Associates, Inc. estimates, "Channel Logjam Eases -- Capacity Projections to 2004," *Cable TV Programming*, July 31, 1996. Channel capacity with digital estimates are calculated using double (see "Digital Doubles Channel Capacity," *Pay TV Newsletter*, September 25, 1998, Paul Kagan Associates) the above cited Kagan capacity estimates, adjusted for the percentage of subscribers with digital service, Donaldson, Lufkin & Jenrette, published in *Broadcasting & Cable*, November 10, 1998, Cable TV Operations supplement, p. 15. The average number of NTSC and DTV stations reported is the total number of these stations divided by the number of television markets for each of the years. The number of DTV stations used in the calculations are: 40 DTV stations on air in 1998, 120 by 2000, and 1,200 by 2002. It is assumed that in 2007 the NTSC stations are no longer broadcasting.

EXHIBIT G

Relative Burden Chart

Local Commercial Broadcast Stations As a Percentage of Cable Channel Capacity



Source: Channel capacity data are from Paul Kagan Associates, Inc. estimates, "Channel Logjam Eases -- Capacity Projections to 2004," *Cable TV Programming*, July 31, 1996. Channel capacity with digital estimates are calculated using double (see "Digital Doubles Channel Capacity," *Pay TV Newsletter*, September 25, 1998, Paul Kagan Associates) the above cited Kagan capacity estimates, adjusted for the percentage of subscribers with digital service, Donaldson, Lufkin & Jenrette, published in *Broadcasting & Cable*, November 10, 1998, Cable TV Operations supplement, p. 15. The average number of NTSC and DTV stations reported is the total number of these stations divided by the number of television markets for each of the years. The number of DTV stations used in the calculations are: 40 DTV stations on air in 1998, 120 by 2000, and 1,200 by 2002. It is assumed that in 2007 the NTSC stations are no longer broadcasting.