deemed to exist if a municipal cable system offers service to at least fifty percent of the households in the franchise area.[114]

4. *Implications of Market Definition for This and Future Reports*

49. Product Market. For purposes of this *Report,* the relevant product market contemplated in the 1992 Act -- multichannel video programming service -- is the appropriate starting point for assessing the status of competition in the market for the delivery of video programming. A primary focus of this *Report*, and a central concern of the 1992 Cable Act, is the extent to which MVPDs that use alternative technologies are emerging as significant competitors to cable operators. In addition to cable operators (which include direct competitors known as "overbuilders"), MMDS, DBS, and TVRO providers are specifically included within the statutory definition of an MVPD,[115] and the Commission has subsequently determined that VDT and SMATV systems should be considered MVPDs, as well.[116] Consequently, this *Report* will evaluate the status of providers utilizing each of these technologies.

50. In addition, the Commission will discuss other video programming distribution media as potential substitutes for cable services. While the use of current broadcast technology is expressly excluded from the statutory definition of an MVPD (because a broadcast station does not offer "multiple" channels of video programming and is not offered on a subscription basis), the Commission nonetheless includes a discussion of broadcast television in this *Report*, given broadcasting's potential constraining effect on cable industry conduct. Finally, the Commission discusses in this section other delivery media that arguably may have a competitive impact in the market, including low power television, programming distribution by electric utilities and VCRs.

51. Geographic Market. The proper definition of the geographic market in which cable operators compete has relevance both to the assessment of cable operators' market power, and to the administration of the "effective competition" standard of the 1992 Act, a

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[114] *Id.* at § 543(l)(1)(C), 47 U.S.C. § 543(l)(1)(C). As of September 16, 1994, a total of 135 claims raising the existence of "effective competition" in certification proceedings before the Commission have been made by cable system operators. Of these, 11 (all of which are pending), are based on the 50/15 standard of the 1992 Cable Act. The other 124 of those "effective competition" claims are based on the 30% penetration standard A total of 13 of these 124 cases have been resolved (eight have been denied, while five have been dismissed).

[115] Communications Act § 602(12), 47 U.S.C. § 522(12).

[116] *1993 Rate Report & Order* ¶¶ 21-22, 8 FCC Rcd at 5650-51. The Commission reserved judgment as to whether LMDS systems or digitally-compressed broadcast signals would fit within the statutory definition, and the Commission expressly held that leased access providers offering compressed or multiplexed multichannel video programming were not MVPDs because they used the same facilities as the cable system operator. *Id.*

topic which will be addressed in future reports. As discussed above, the scope of the geographic market is defined by the geographic area to which buyers will reasonably turn and from which competing suppliers sell their products.[117] Given the current state of competitive entry, it would seem reasonable to define, at least tentatively, the local franchise area as the geographic market relevant to an analysis of the cable industry.

52. On the other hand, it is not entirely clear that cable operators view the franchise area as the "area of effective competition."[118] While at the system level, competition may be viewed on a franchise by franchise basis, MSO operations at the firm level may be national in scope, and are often comprised of a series of regional clusters.[119]

53. Moreover, over time, it is likely that consumers will be able to purchase services from MVPDs located outside their franchise areas. For example, wireless cable and SMATV systems may serve entire metropolitan areas.[120] A LEC providing VDT service may serve an entire region of the country.[121] Finally, DBS service providers may contemplate a national market.[122] Therefore, as competitive entry increases, the definition of the geographic market for purposes of economic analysis may be broadened beyond the franchise area to account for the impact of these alternative suppliers.

B. The Status of Existing Competitors to Franchised Cable Systems

1. Overbuilders

54. The term "overbuild" describes the situation in which a second cable operator enters a local market in direct competition with an incumbent cable operator. In these markets, the second operator, or "overbuilder," lays wires in the same area as the incumbent, "overbuilding" the incumbent's plant, thereby giving consumers a choice between cable service providers.

55. In the *1990 Cable Report,* the Commission found that the number of overbuilders was "relatively small," noting reports of forty to forty-nine directly competitive

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[117] *See Tampa Electric*, 365 U.S. at 330-33; *See also* UNITED STATES DEP'T OF JUSTICE & FEDERAL TRADE COMM'N, 1992 HORIZONTAL MERGER GUIDELINES ("HORIZONTAL MERGER GUIDELINES") ¶ 1.21, 4 Trade Reg. Rep. (CCH) ¶ 13,104 at 20,573-4.

[118] *See Standard Oil,* 337 U.S. at 299 n.5; *Competitive Common Carrier Report & Order* ¶ 25, 95 FCC 2d at 563.

[119] *See infra* ¶¶ 151-55.

[120] *See infra* §§ III.B.3-4.

[121] *See, e.g.*, GTE Comments at 5-6.

[122] *See, e.g.*, DirecTV Comments at 14.

systems in operation at the time of that *Report*.[123] The Commission found, however, that "direct competition has resulted in reduced per channel rates for cable service."[124] Therefore, in order to stimulate further competition from cable overbuilders, the *1990 Cable Report* contained the recommendation that Congress: "(a) forbid local franchise authorities from unreasonably denying a franchise to potential competitors who are ready and able to provide service; (b) prohibit franchising rules whose intent or effect is to create unreasonable barriers to the entry of potential competing multichannel video providers; (c) limit local franchising requirements to appropriate governmental interests (*e.g.*, public health and safety, repair and good condition of public rights-of-way, and the posting of an appropriate construction bond); and (d) permit competitors to enter a market pursuant to an initial, time-limited suspension of any 'universal service' obligation."[125]

56. Congress incorporated the Commission's recommendations in the *1992 Cable Act* by amending § 621(a)(1) of the Communications Act to provide that:

> [a franchising authority may award . . . 1 or more franchises within its jurisdiction]; except that a franchising authority may not grant an exclusive franchise and may not unreasonably refuse to award an additional competitive franchise.[126] Any applicant whose application for a second franchise has been denied by a final decision of the franchising authority may appeal such final decision pursuant to the provisions of section 635 for failure to comply with this subsection.[127]

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[123] *1990 Cable Report* ¶ 98, 5 FCC Rcd at 5013.

[124] *Id.*

[125] *Id.* ¶ 14(1), 5 FCC Rcd at 4974.

[126] Two courts have rendered divergent interpretations of the 1992 Cable Act's exclusive franchise provisions. In *Jones Cable Partners v. City of Jamestown*, 822 F. Supp. 476, 478-79 (M.D. Tenn. 1993), the court held that an exclusive franchise remained "valid, effective and enforceable," after passage of the 1992 Cable Act on the basis that Congress had not indicated an intent to apply the 1992 Cable Act retroactively, and enjoined the City of Jamestown from creating its own competing system. In *Cox Cable Communications, Inc. v. United States*, 992 F.2d 1178, 1181 (11th Cir. 1993), however, the court refused to enjoin a cable operator from overbuilding the operations of the incumbent operator which had an exclusive franchise. The court held that the 1992 Cable Act "does not automatically invalidate existing exclusive franchises; rather it invalidates the exclusivity of such franchises when a qualified applicant requests access to the market serviced by those franchises. The 1992 Act overrules the exclusivity of government franchises by imposing a reasonableness requirement on a franchising authority's refusal to award an additional franchise."

[127] 1992 Cable Act, sec. 7(a)(1) (codified at 47 U.S.C. § 546(a)(1)). A concern has

(continued...)

In addition, Congress amended the Communications Act to require a franchising authority to "allow the applicant's cable system a reasonable period of time to become capable of providing cable service to all households in the franchise area."[128]

57. In connection with its March 30, 1994 Report and Order regarding rate regulation, the Commission examined the competitive differential between markets that were overbuilt and those that were not. That competitive differential was defined as the difference in monthly average revenue per subscriber between two cable systems, otherwise identical, one of which is subject to duopolistic competition from the overbuilder, and one of which is not. The Commission's statistical analysis refined the measure of the strength of overbuild competition by taking account of the amount of overlap between competing providers. Under that analysis, the Commission determined that the rates in markets that were overbuilt were an average of sixteen percent lower than the rates in markets that were not overbuilt.[129]

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[127](...continued)
been raised that the provision of Section 621 that allows an appeal only from a *final* decision of denial by a franchising authority potentially could be used by a franchising authority to delay or preclude a potential entrant from availing itself of the remedies in the Act. The Commission would be interested in hearing of any such alleged frustration of the purpose of Section 621.

[128] 1992 Cable Act, sec. 7(b) (codified at 47 U.S.C. § 541(a)(4)(A)).

[129] *1994 Rate Report & Order* ¶ 97. Appendix C of the *1994 Rate Report & Order* contains a detailed and technical discussion of the variables and economic assumptions underlying the Commission's calculation. The Commission studied 51 overbuilds (including those by municipal providers) in connection with that order. *Id.* ¶ 96.

The National Cable Television Association ("NCTA") takes exception to the methodology used by the Commission to determine the competitive differential in overbuilt markets, and submitted in this proceeding a study prepared by Arthur D. Little, Inc., which purports to evaluate the Commission's methodology used in the *1994 Rate Report and Order*. NCTA asserts that the competitive differential found by the Commission only existed in cases of systems serving fewer than 5,000 subscribers, and that such systems are not representative of the industry. According to NCTA, when system size is taken into account, the competitive differential for overbuilt systems is reduced to almost zero. *See* NCTA Comments at 4-5, Attachment D (Arthur D. Little, Inc., Evaluation of FCC Methodology for 1994 Rate Order, Report to NCTA (June 1994)).

The Commission notes that NCTA and others have appealed the *1994 Rate Report & Order*. *See Time Warner Entertainment Co. v. FCC*, No. 93-1723 (and consolidated cases) (D.C. Cir., filed Oct. 29, 1993). Accordingly, it would be inappropriate to comment on NCTA's criticisms of the Commission's rate setting methodology in this *Report*.

58. Several economic studies of direct competition in the cable industry also show that competition from overbuilding lowers cable rates.[130] Anecdotal evidence shows positive service and rate effects from overbuilds. For example, in Glasgow, Kentucky, consumers can choose between two cable systems -- one of which is operated by the Glasgow Electric Plant Board ("GEPB"), the municipal electric utility.[131] In anticipation of overbuild entry by GEPB in June 1989,[132] the incumbent operator initially dropped its basic rate for twenty-four channel service from $23.00 to $5.95. As of September 1993, after more than four years of direct competition, the municipal operator entrant offered forty-eight channels for $13.50 a month; the incumbent charged $8.95 for thirty-seven channels.[133]

59. In a 1990 article, Thomas Hazlett reported on four instances of 1987 overbuild entry, three of which were in Florida.[134] In Orange County, an overbuilder secured a county-wide franchise permitting competition in all unincorporated areas. In response, two different incumbents each reduced their basic prices by half, from the $13.00-per-month range to the $6.50-per-month range. In Riviera Beach, the incumbent operator responded to the entry of an overbuilder in 1987 by expanding its twelve-channel basic service priced at $8.40 to a package competitive with the overbuilder's twenty-six-channel, $5.75 offering. In Dade County, Florida, the incumbent operator reduced its basic service price by one-third to match

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[130] *See* John W. Merline, *How to Get Better Cable TV at Lower Prices,* CONSUMERS' RESEARCH, May 1990, at 10-17 (duopolistically competitive cable systems have rates that average 18% lower than their monopoly counterparts, and carry an average of 21% more channels than monopoly systems); Stanford Levin & John Meisel, *Cable Television and Competition: Theory, Evidence, and Policy,* TELECOMM. POLICY (1991) (monthly rates for competitive systems are approximately $2.94 to $3.33 lower than for monopoly systems); Richard O. Beil, P. Thomas Dazzio, Robert B. Ekelund, Jr., and John D. Jackson, *Competition and the Price of Municipal Cable Services: An Empirical Study,* 6 J. REG. ECON. 410-15 (1993) (competitive market prices are, on average, $3.85 less than the rates charged in monopoly markets); George Ford, Competition in the Cable Television Industry: An Economic Analysis of Overlap Variations and Cable Prices (1994) (unpublished Ph.D dissertation, Auburn University) (monopoly prices are 21% higher than overbuild prices).

[131] Entry by electric utilities into the video distribution market, generally, is discussed in Section III.C.4, *infra.*

[132] *See* WARREN PUBLISHING, INC., 1994 TELEVISION AND CABLE FACTBOOK ("1994 FACTBOOK") at D-651; *see also* LELAND L. JOHNSON, TOWARD COMPETITION IN CABLE TELEVISION ("TOWARD COMPETITION") 20 (1994).

[133] Audrey Davidson & George Ford, *Competition Will Decrease Cable Rates,* BUSINESS FIRST, Sept. 6, 1993; Kate Maddox, *Cable Overbuilds Struggle with Retransmission,* ELECTRONIC MEDIA, June 7, 1993, at S4.

[134] Thomas W. Hazlett, *Duopolistic Competition in Cable Television,* 7 YALE J. REG. 65 (Winter 1990).

a new overbuild entrant. Finally, an overbuilder entering the market in Sacramento, California in late 1987 offered thirty-six to forty-two channels at $10.00 a month, and a $10.00 installation charge, compared with the incumbent's forty-channel, $14.50 offering. However, while the incumbent initially repriced to meet the entrant's prices, it purchased the competitor six months later.[135]

60. While most studies suggest that overbuilding produces meaningful rate effects, the extent of overbuilding seems to have remained quite limited, despite the 1992 Cable Act's explicit purpose to encourage the emergence of direct competition.[136] The Commission is aware of only a few new overbuilding proposals. One example is that of FiberVision Corporation, which has plans for several significant overbuilds in Hartford, Bridgeport, New Britain and New Haven, Connecticut.[137] In has also been reported that local authorities in Greenburgh, New York are considering allowing Northeast Networks, Inc., to overbuild and compete with the incumbent, TCI of Westchester, and have agreed to let Liberty Cable Company, Inc. provide cable service via fiber optic lines of NYNEX, the local exchange carrier. According to one report, Liberty Cable will initially provide service to two condominium complexes, and may then expand its service to additional complexes and single family homes.[138] Finally, recent press reports indicate that Cablevision, currently the nation's fifth largest MSO, is considering overbuilding several systems in New Jersey.[139] The

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[135] *Id.*

[136] The reasons for limited cable system overbuilding are undoubtedly complex, although the record in this proceeding does not provide the basis for a definitive explanation. Factors such as local franchising requirements, entry-deterring strategic behavior by the incumbent operator, and the prospective effects of possible direct competition by local telephone companies, appear to be some of the considerations that currently limit the extent of overbuilding.

[137] Incumbent Hartford operator TCI unsuccessfully brought suit to overturn the Connecticut Department of Public Utility Control's grant of a Hartford franchise to Fibervision. *See First Cable Overbuild in Conn.*, COMMUNICATIONS DAILY, Feb. 18, 1994, at 8; Geoffrey Foisie, *TCI Goes to Court to Block Overbuild*, BROADCASTING & CABLE, Apr. 25, 1994, at 38; *Overbuild Appeal Denied*, BROADCASTING & CABLE TV FAX, Sept. 13, 1994.

[138] Kent Gibbons, *C-TEC Subsidiary Wants to Overbuild TCI System*, MULTICHANNEL NEWS, July 25, 1994, at 94; John Jordan, *Liberty, TCI Battle for Cable TV Market Share in Greenburgh*, WESTCHESTER CO. BUS. J., Feb. 14, 1994 § 1, at 2; Merri Rosenberg, *Municipalities Seek Cable Improvement*, N.Y. TIMES, Jan. 9, 1994 § 13, at 13.

[139] John M. Higgins, *Dolan Vows to Overbuild N.J. Ops*, MULTICHANNEL NEWS, June 27, 1994, at 1; Mark Robichaux, *Cable Chief Casts His Eye on Competitors' Turf*, WALL ST. J., June 30, 1994, at B1; *Cablevision Systems Ponders Fiber Overbuild in Comcast Territory*, FIBER OPTIC NEWS, July 11, 1994.

Commission will track the progress of existing overbuilds and monitor the emergence of new overbuild construction on an on-going basis.

2. *Direct-To-Home Satellite Services*

61. Two distinct types of direct-to-home ("DTH") satellite services now offer video programming for subscription that is comparable to the satellite-delivered programming provided by cable television services. DBS is one. Technically, DBS service refers to satellites that transmit signals "intended for reception by the general public" operating pursuant to Part 100 of the Commission's Rules in a portion of the Ku-band.[140] At present, the only operational DBS service, as that term is defined in the Commission's rules, is the high-power Ku-band DBS service offered by Hughes Communications Galaxy, Inc./DirecTV ("DirecTV") and United States Satellite Broadcasting ("USSB"). Another service, the medium-power Ku-band service offered by Primestar Partners, L.P. ("Primestar"), is commonly referred to as "medium power DBS," although the service operates in the Fixed Satellite Service ("FSS").[141] The second type of DTH service is offered by the home satellite dish (HSD) industry, and involves the home reception of signals transmitted by satellites operating generally in the C-band.

a. *Direct Broadcast Satellite (DBS)*

62. In 1982, the Commission authorized DBS service,[142] and granted the first of several construction permits.[143] Even though DBS service was not yet operational at the

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[140] 47 C.F.R. § 100.3.

[141] Ku-band satellites operating in the FSS are authorized pursuant to Part 25 of the Commission's rules, 47 C.F.R. § 25, *et. seq.*, and operate in different portions of the Ku-band than DBS satellites. Though Primestar uses a satellite operating in the FSS, for ease of analysis, the service will be discussed in the DBS section of the *Report*.

[142] *Inquiry into the Development of Regulatory Policy in Regard to Direct Broadcast Satellites, Report & Order*, 90 FCC 2d 676 (1982).

[143] The United States was allotted eight orbital positions for DBS under international treaties and agreements. Each orbital position has 32 channels, and thus, there are 256 DBS channels that can be used to provide service to the continental United States ("full-CONUS service"). In 1989, the Commission decided to assign orbital positions in east-west pairs, so as to maximize the number of channels of DBS service that will be provided to the entire United States. Each assigned channel covers a specified frequency range of 24 MHz, so that, for example, channel number one at each orbital position occupies the range from 12,212 MHz to 12,236 MHz.

time, the Commission found in the *1990 Cable Report* that the medium had the potential to "readily compete with cable," provided that adequate programming was available.[144]

63. Since 1990, DBS has advanced as a potential long-term viable competitor to cable. In December, 1993, the first high-power DBS satellite ("DBS-1"), owned by DirecTV and operated jointly with USSB, was launched. DirecTV owns eleven transponders on DBS-1, and USSB owns the other five.[145] On June 17, 1994, DirecTV and USSB began providing high-power DBS service via DBS-1, and DirecTV currently is transmitting over fifty channels of subscription and pay-per-view programming.[146] On August 3, 1994, DBS-2, also owned by DirecTV, was launched; DirecTV owns all sixteen of the transponders on DBS-2.[147] When DBS-2 becomes operational, which is projected to occur on September 19, 1994, DirecTV's digital broadcast facility will purportedly be able to process and transmit as many as 216 video and audio channels simultaneously.[148]

64. DirecTV states that it will be able to increase channel capacity by increasing power and introducing a new signal compression standard, which will allow it to provide an additional fifteen to twenty channels by 1995.[149] DirecTV has also filed an application to operate a third satellite, which is scheduled to be launched in early 1995.[150] USSB, with five transponders, currently offers twenty channels, and stated in comments in this docket that improvements in encoder equipment and software will make it possible to expand its service to offer twenty-five to twenty-eight channels over the next few months.[151]

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[144] *1990 Cable Report* ¶ 104, 5 FCC Rcd at 5018.

[145] A transponder receives the signal from a transmitting earth station on one frequency and retransmits the signal on another frequency for distribution to one or more receiving earth stations.

[146] DirecTV Comments at 1-2.

[147] DirecTV, Inc., *DirecTV Successfully Launches Second Direct Broadcast Satellite,* (News Release, Aug. 3, 1994); *Demand for DirecTV/USSB Systems Exceeds Supply in First Month*, COMM. DAILY, July 19, 1994, at 2-3.

[148] Chris McConnell, *DirecTV's All-Digital Domain*, BROADCASTING & CABLE, Mar. 28, 1994, at 52. *See also*, Christopher Stern, *DirecTV Aims for Cable Viewers*, BROADCASTING & CABLE, Dec. 6, 1993, at 42.

[149] DirecTV Comments at 14-15.

[150] DirecTV Comments at 15. DirecTV reportedly intends to use this third satellite to increase pay-per-view service. *See* Mary Hillebrand, *DBS Services Look Ahead*, SATELLITE BUS. NEWS, July 13, 1994, at 1, 25.

[151] USSB Comments at 5.

65. As of September 9, 1994, DBS equipment was available in twenty-three states, and approximately 40,000 households were receiving programming via DBS.[152] DirecTV expects that DBS equipment will be available throughout the continental United States by early November 1994.[153] Subscribers receive video programming directly from the satellite through small reception dishes that are approximately eighteen inches in diameter. The home receiving equipment that is required to receive the service costs $699, and subscribers can either pay $150-200 for professional installation or purchase the installation equipment for $69.95.[154] The $699 Digital Satellite System ("DSS") unit allows a subscribing household to watch one channel at a time. In order to view two different channels on different television sets, a person must purchase an $899 DSS unit and then also purchase a $649 decoder for the second television set.[155] Thomson Consumer Electronics ("Thomson"), under the brand name RCA, produces the DSS equipment which includes the receiving dish, digital receiver and remote control. Thomson/RCA has an exclusive contract to produce DSS units for the first eighteen months or one million units, whichever occurs first.[156] After that, Sony and Thomson will both produce the DSS equipment for the next six months.[157] Thereafter, other manufacturers may be licensed to produce DSS equipment.

66. DirecTV states that despite the relatively significant initial cost, 400,000 to 500,000 DSS units will be shipped by Thomson/RCA this year, and that equipment costs will decline over time.[158] Retailers in the first five markets in which DBS service has been introduced have reported that the demand for the dishes has exceeded the supply.[159] By the end of 1994, according to USSB, approximately 10,000 locations nationwide will be carrying

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[152] Letter dated September 13, 1994 from Marvin Rosenberg, Esq., counsel for USSB, Inc., to William F. Caton, Acting Secretary, Federal Communications Commission, filed in this proceeding on September 13, 1994.

[153] Letter dated September 12, 1994 from Gary M. Epstein, Esq., counsel for DirecTV, to William F. Caton, Acting Secretary, Federal Communications Commission, filed in this proceeding on September 12, 1994 ("DirecTV Letter").

[154] DirecTV Comments at 17; USSB Comments at 10; Mary Hillebrand, *DBS Hits Thomson's Backyard*, SATELLITE BUS. NEWS, July 27, 1994, at 1, 25.

[155] *Thomson, DBS Shine at CES*, SATELLITE BUS. NEWS, June 16, 1993, at 1, 21; Comments of USSB at 9.

[156] *See* DirecTV Letter.

[157] *Id.*

[158] DirecTV Comments at 16-17. *See also* USSB Comments at 8.

[159] USSB Comments at 7; *Demand for DirecTV/USSB Systems*, *supra* note 147, at 2. Those five markets are Albuquerque, New Mexico; Jackson, Mississippi; Little Rock, Arkansas; Shreveport, Louisiana; and Tulsa, Oklahoma.

DSS equipment and offering both USSB and DirecTV programming.[160] As part of its marketing effort, Hughes has also entered into an agreement with the National Rural Telecommunications Cooperative ("NRTC") to provide DirecTV services to subscribers through its membership across the country.[161]

67. In addition to DirecTV and USSB, several other ventures are attempting to enter the high-power DBS field. EchoStar Communications Corporation ("EchoStar"), which has reportedly raised $332 million dollars in a debt offering, is required by the terms of its construction permit to have its system in operation by August 15, 1995.[162] Directsat Corporation and Direct Broadcast Satellite Corporation, which are each authorized to provide eleven channels of service,[163] are required by their construction permits to be operational by August 15, 1995.[164] Tempo Satellite, Inc. (a wholly-owned subsidiary of TCI), is authorized to provide eleven channels of service and is required to be operational by May 1, 1998.[165] The other parties, which have received conditional construction permits, but have not yet been assigned specific orbital positions and channels, are Continental Satellite Corporation, and Dominion Video Satellite, Inc. According to the terms of its construction permit, Continental's DBS system is to be operational by December 4, 1996.[166] Finally, Advanced Communications Corporation, which has been assigned orbital positions and channels, is required to have its system operational by December, 1994.[167]

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[160] USSB Comments at 6.

[161] NRTC Comments at 5.

[162] *Eying Charlie Ergen's World*, SATELLITE BUS. NEWS, May 18, 1994, at 6. *Cf.* Dinah Zeiger, *EchoStar Moves into Satellite-TV Spotlight*, DENVER POST, Mar. 29, 1994, at C1 (EchoStar filed with the SEC documents describing a $335 million debt offering).

[163] EchoStar and SSE Telecom Inc. have filed an application seeking Commission consent for transfer of control of Directsat from SSE to EchoStar which would combine the allocation of channels of both EchoStar and Directsat. *See* FCC File No. DBS-88-01\88-02\94-08 TCP\M.

[164] *Application of Continental Satellite Corp. for Assignment of DBS Channels, Memorandum Opinion & Order*, 4 FCC Rcd 6292 (1989) (applying 47 C.F.R. § 100.19).

[165] *Application of Tempo Satellite, Inc. for Assignment of DBS Channels, Memorandum Opinion & Order*, 7 FCC Rcd 2728 (1992) (applying 47 C.F.R. § 100.19).

[166] *Id.*

[167] *Application of Advanced Communications Corp. for Assignment of DBS Channels, Memorandum Opinion & Order*, 6 FCC Rcd 2269 (1992) (applying 47 C.F.R. § 100.19). Advanced Communications Corporation's application for an extension of time to construct its system is currently pending before the Commission. *See* FCC File No. DBS-84-01\94-11 EXT.

68. In addition to the high-power DBS services listed above, Primestar is a joint venture owned by six MSOs, and GE American Communications, Inc., which owns the satellite used by Primestar.[168] Primestar has been operational as a medium-power Ku-band service provider since 1991,[169] and its service is available to consumers using thirty-six-inch and forty-inch dishes.[170] As of June 4, 1994, Primestar served 70,383 subscribers, and it began to use digital technology to provide service to its subscribers by digital technology on July 31, 1994.[171] Primestar is currently conducting a $55 million advertising campaign, and now offers seventy-one video channels.[172] Ultimately, after it makes a planned transition to a new generation of satellites in 1996, Primestar plans to offer more than 150 channels of programming.[173]

69. By its very nature, DBS is a national video programming distribution service.[174] DirecTV considers its potential subscriber base to be all 94 million television households.[175] However, DBS service does not offer local broadcast signals, a fact which some commenters argue inhibits the ability of DBS service to become an effective competitor

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[168] The cable companies are Comcast, Continental Cablevision, Cox Enterprises, Newhouse Broadcasting Corporation, TCI and Time Warner. *United States v. Primestar Partners*, 1994-1 Trade Cas. (CCH) ¶ 70,562 (S.D.N.Y. 1994); *State of New York ex rel. Abrams v. Primestar Partners*, 1993-2 Trade Cas. (CCH) ¶¶ 70,403, 404 (S.D.N.Y. 1993) (collectively the "*Primestar Consent Decrees* ").

[169] *Implementation of Section 25 of the Cable Television Consumer Protection and Competition Act of 1992, Direct Broadcast Satellite Public Service Obligations, Notice of Proposed Rule Making* ¶ 11, 8 FCC Rcd 1589, 1591 (1993) ("*DBS NPRM*").

[170] *DBS Duelers Cross Swords in New York*, BROADCASTING & CABLE, Mar. 21, 1994, at 40; *Arietta, New York to Be the Nation's First Digital Town*, PR NEWSWIRE, Sept. 8, 1994 (available in LEXIS, Nexis Library).

[171] Primestar Comments at 4. It was reported on September 16, 1994 that Primestar was serving more than 100,000 subscribers in forty-eight states. *Satellite and International*, COMM. DAILY, Sept. 16, 1994, at 5.

[172] *See* Primestar Comments at 4.

[173] *Id.*

[174] USSB Emergency Motion at 3.

[175] DirecTV Comments at 14 ("Since DirecTV's reach is essentially ubiquitous, all United States households are potential DirecTV subscribers"). However, DirecTV points out that local zoning ordinances or similar household access restrictions regarding residential purchase and placement of the dishes can limit DirecTV's eventual reach. *Id.* at n.21.

to cable service.[176] On the other hand, DBS service might provide consumers with service attributes that are not generally available on cable systems at this time. For example, USSB states that DBS subscribers will have digital video and compact disc ("CD") quality sound,[177] and DirecTV states that its DBS system, which has a modem in the DSS receiver, will have interactive capabilities via telephone lines.[178]

70. DBS service providers and equipment manufacturers are highly optimistic about the potential for subscribership growth. USSB predicts that between one and two million dishes will be sold within a year, and five to ten million will be sold within three years.[179] DirecTV projects that it will have over three million subscribing households within three years.[180] USSB estimates that in seven years, almost forty percent of all television households may receive programming via DSS equipment.[181] Thomson Consumer Electronics/RCA, the current manufacturer of the DBS dishes, anticipates sales of ten million units in the next six years.[182] Finally, although Primestar has concentrated its early efforts on areas unserved by cable or wireless cable,[183] it projects that it will serve in excess of 200,000 subscribers by the end of 1994, and two-to-five million by the end of the decade.[184]

b. Home Satellite Dishes (HSDs)

71. HSD technology was first developed in 1976, and commercialized in 1980.[185] HSDs are approximately 7-10 feet in diameter and receive video programming transmitted in the C-band of frequencies.[186] HSD owners can watch without payment approximately 150 unscrambled signals, and another 103 scrambled channels can be ordered through program

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[176] *See* Primestar Comments at 8; Bell Atlantic Reply Comments at 2-3.

[177] USSB Comments at 11.

[178] DirecTV Letter at 2.

[179] USSB Comments at 8.

[180] DirecTV Comments at 16.

[181] USSB Comments at 8.

[182] USSB Comments at 13.

[183] Primestar Comments at 4-5, 8.

[184] Primestar Comments at 4-5.

[185] Satellite Broadcasting and Communications Association of America ("SBCA") Comments at 3.

[186] Because signals in this band are transmitted at lower power than signals in other bands used for direct-to-home service, the receiving antenna must be larger to receive the signal.

packagers.[187] Generally, HSD owners have access to the same programming services that are available on cable, although the most popular cable programming services are scrambled.[188] In order to receive one or more scrambled channels, an HSD owner must purchase an integrated receiver-decoder ("IRD") from an equipment dealer and then pay a monthly or annual subscription fee to one of the thirty or so national packagers of HSD programming.[189]

72. In the *1990 Cable Report*, the Commission observed that HSD use in the United States had grown to roughly 2.8 million units from approximately 900,000 in 1984, and that this growth stalled in 1986 with the advent of satellite signal scrambling.[190] In addition, the *Report* noted that zoning regulations could restrict many viewers' ability to install an HSD system.[191]

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[187] SBCA Comments at 3.

[188] TOWARD COMPETITION, *supra* note 132, at 115.

[189] SBCA Comments at 8. A number of programmers and cable operators have established HSD packager units or subsidiaries. In addition, a number of unaffiliated third-parties serve as program packagers.

[190] *1990 Cable Report* at ¶ 103, 5 FCC Rcd at 5016. As noted in the *1990 Cable Report*, the market for HSD service changed significantly in 1986, when HBO first began scrambling its satellite signal and then selling it to HSD owners who had purchased a decoder. Other program services followed HBO's example and began scrambling their satellite signals. The introduction of signal scrambling in 1986 resulted in the advent of significant pirating of scrambled signals through the illegal use of decoding systems. Indeed, the first decoder used by the HSD industry, the VideoCipher II, manufactured by General Instrument, Inc., was itself susceptible to signal pirating. According to one report, by 1990 more than 50% of the users of this decoder were not paying for programming. TOWARD COMPETITION, *supra* note 132, at 116 (citing Karen J.P. Hawes, *Encryption in the '90s*, VIA SATELLITE, June 1990, at 29). According to another estimate, of the approximately 3.5 million reception systems in the United States in 1991, close to 1.2 million consumers had modified their systems so as to be able to receive scrambled programming without having to pay a fee. SBCA Comments at 7. As a result of this pirating, a second decoder was developed, the VideoCipher II Plus, which offered greater security and replaced the earlier units. TOWARD COMPETITION, *supra* note 132, at 116. SBCA indicates that VideoCipher II Plus "has held for three years now, and many of the consumers who previously owned 'chipped' units have now converted to being legitimate subscribers." SBCA Comments at 7.

[191] *Id.*

73. Today, there are approximately four million HSD users, roughly half of whom, according to SBCA estimates, subscribe to one or more programming services.[192] It has also been reported that almost all recent buyers of HSD systems are choosing to subscribe to a programming service.[193] Consumers pay an average of $2,500 for a complete HSD system,[194] although one commenter states that a C-band system can be purchased and installed for as little as $1,000.[195] There are indications that HSD use might be increasing -- SBCA reports that 55,000 C-band systems were shipped in April 1994 and another 61,000 were shipped in May 1994.[196] Those are the two highest monthly totals of C-band shipments since 1986, the year programmers began scrambling their signals.[197]

74. A survey by the SBCA indicates that HSDs and cable systems may be either complementary video programming services or substitutes for each other, depending on viewer preferences and other circumstances. That survey found that 61% of HSD systems were purchased by persons who did not have access to cable at the time they purchased the HSD.[198] However, the survey also found that 37% of HSD owners with access to cable subscribe to cable services, and that 18% of HSD owners who subscribe to satellite-programming packages also subscribe to cable.[199] Among HSD owners who subscribe to both cable and one or more satellite-programming packages, 41% did so for the purpose of receiving local television stations.[200]

75. The HSD industry's primary competitive strength *vis-a-vis* cable is programming variety and flexibility. An HSD owner may choose from a variety of program packages offered by the approximately thirty program packagers nationwide.[201] Those program packagers compete with each other to offer owners the most desirable combinations

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[192] SBCA Comments at 12; *Satellite System Sales*, SATELLITE BUS. NEWS, Aug. 10, 1994 at 1 (citing General Instrument Corp. statement).

[193] *Why Do People Buy?* SKYREPORT (Newsletter of SBCA), First quarter 1994, at 10, 11.

[194] SBCA Comments at 5.

[195] Consumer Satellite Systems, Inc., Programmers Clearing House, Inc., and Satellite Receivers, Inc. (hereinafter collectively referred to as "CSS") Comments at 2.

[196] SBCA Comments at 4.

[197] *Id.*

[198] SBCA Comments, Appendix B, at 7.

[199] *Id.*

[200] *Id.*

[201] *Id.* at 8.

of programming services at attractive prices.[202] One commenter states that the average HSD subscriber purchases programming from 2.5 different outlets.[203] The survey commissioned by the SBCA found that the most common reason for purchasing an HSD was to gain access to an increased variety of programming.[204]

76. Although HSD services offer more programming options than any other video delivery system, the cost of a system entails a large upfront expenditure by the consumer. Another drawback for HSD services comes from the fact that many localities have enacted zoning ordinances that restrict the deployment of HSDs.[205] Although the Commission has preempted zoning ordinances that either discriminate against HSDs without "a reasonable and clearly defined health, safety or aesthetic objective," or impose "unreasonable limitations" on the use of satellite dishes,[206] the SBCA reports that local authorities continue to enact ordinances that violate these rules.[207] It also notes that the Commission's ability to enforce its zoning preemption rules recently has been limited by a federal court decision.[208] Therefore, the SBCA requests that the Commission clarify its rules preempting zoning ordinances that unreasonably differentiate between satellite dishes and other types of antennas.[209] Related to the zoning problem is the SBCA's contention that homeowners' associations, through covenants and other restrictions, prohibit homeowners from deploying HSDs.[210] Although the SBCA estimates that eighty percent of all new homes in the United States are part of homeowners' associations, there is no indication of how widespread this practice may be.[211]

77. A third factor that may affect the ability of HSD systems to compete with cable systems is presented by claims that HSD program packagers are charged prices for video

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[202] Netlink Reply Comments at 3.

[203] CSS Comments at 5.

[204] SBCA Comments, Appendix B at 3.

[205] *Id.* at 17-18.

[206] 47 C.F.R. § 25.104.

[207] SBCA Comments at 18.

[208] *Town of Deerfield v. FCC*, 992 F.2d 420 (2d Cir. 1993) (where Commission rules contemplated court review of municipal zoning ordinances under limited Commission preemption, Commission may not subsequently review finding made by district court).

[209] SBCA Comments at 18. SBCA and Hughes Network Systems, Inc. have each filed a petition for declaratory ruling concerning the Commission's preemption of local zoning regulation of satellite antennas.

[210] SBCA Comments at 19.

[211] *Id.*

programming that cannot be justified under the Commission's program access rules.[212] Those claims are addressed in the Commission's discussion of the program access rules in Section IV.B.2.a of the *Report*.

3. *Terrestrial "Wireless" Cable -- Multichannel Multipoint Distribution Service (MMDS)*

78. The term "wireless cable" refers to the Multipoint Distribution Service ("MDS") and MMDS (Multichannel Multipoint Distribution Service), both of which transmit video programming using over-the-air microwave radio channels.[213] Subscribers use rooftop antennas to receive the programming transmitted from the wireless cable tower. The signals received are then sent through electronics equipment to the subscriber's television set. There are eleven MMDS channels available to wireless cable system operators for full-time use, and either two or three single-channel MDS channels depending on the particular city. In addition, wireless cable system operators have access to the twenty channels allocated to Instructional Television Fixed Service ("ITFS")[214] on a leased, part-time basis. Thus, wireless cable operators have access to a maximum of thirty-two or thirty-three channels.

79. The wireless cable industry has increased its subscribership from 50 systems serving 300,000 subscribers in 1990, to 143 systems serving 550,000 subscribers by June 1994.[215] In addition, analysts have projected the number of wireless cable subscribers to grow through the end of the decade.[216] Although wireless cable has not achieved significant penetration nationwide, there are a number of markets in which wireless cable has gained a foothold in competition with wired cable systems. In Riverside, California for example, Cross Country Wireless Cable TV has attracted 42,000 subscribers out of a total of 400,000 homes that can receive its services.[217] People's Choice TV in Tucson, Arizona had 22,000 subscribers as of June 1994, and projects that it will add another 18,000 subscribers over the next two years.[218] CableMaxx currently has 14,000 subscribers in Austin, Texas and is

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[212] *See, e.g.*, CSS Comments at 3-5; NRTC Comments at 9-20.

[213] Local Multipoint Distribution Service ("LMDS") also transmits multichannel video using microwave frequencies. *See infra* LMDS discussion in section III.C.2.

[214] ITFS channels are used by educational institutions to interconnect scattered campus locations.

[215] Wireless Cable Association International, Inc. ("WCA") Comments at 2.

[216] *Critical Mass for Critical Funding*, WIRELESS CABLE INVESTOR, June 30, 1994, at 1-2.

[217] *Gerard Klauer Mattison Conference*, WIRELESS CABLE INVESTOR, Mar. 30, 1994, at 5.

[218] People's Choice Comments at 7.

adding subscribers at the rate of 1000 per month.[219] ACS Enterprises, which operates in the Philadelphia, Pennsylvania area, has approximately 30,000 subscribers.[220] Finally, after just over two years of operation, Coastal Wireless Cable Television provides service to 10.5% of the homes in Ft. Pierce, Florida that are capable of receiving its signal.[221]

80. Wireless cable operators recently have gained access to financing from public debt and equity markets. Since December 1992, wireless operators have raised almost $600 million from the public markets.[222] Those funds permit wireless operators to acquire multiple systems, and thereby to begin laying the foundation for the economies of scale now enjoyed by MSOs.[223] Access to public financing also permits wireless operators to expand their systems more rapidly.[224] For example, after People's Choice TV issued stock to the public on July 8, 1993, it increased its subscriber base in Tucson, Arizona from 13,000 to 22,000, and now expects to add a total of 125,000 subscribers to its five systems by March, 1995.[225] Accordingly, it appears that access to public financing, as well as increasing credibility with banks,[226] may have helped to alleviate one of the major problems that has confronted the wireless industry.

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[219] *Gerard Klauer Mattison Conference*, *supra* note 217, at 4.

[220] Charles Reidstetter, *Trendsetter Grows A Business*, PRIVATE CABLE & WIRELESS CABLE, June 1994, at 7; John M. Higgins, *Wireless Operators Receive Money, but Find It Scarce; Wireless Cable Operators Financing*, MULTICHANNEL NEWS, Jan. 25, 1993, at 3.

[221] As of August 18, 1994, Coastal had 12,966 customers out of 129,000 households that could receive its services ("homes seen"). A recent article indicates that Coastal's subscribership may exceed 15% percent in one of the cable franchise areas where it provides wireless cable service. Tom Kerver, *Attack of the Wireless Entrepreneurs,* CABLEVISION, July 25, 1994, at 30.

[222] *Critical Mass*, *supra* note 216, at 1.

[223] For example, the door-to-door marketing now employed by many wireless cable operators will eventually give way to large scale mass media advertising. Also, wireless cable operators will qualify for bulk discount programming rates when they reach a certain level of subscribership. MARY L. KUKOWSKI, THE WIRELESS CABLE INDUSTRY -- PHOENIX RISING 8, Aug. 22, 1994 (Dillon Read Equity Research Aug. 22, 1994); *See also* Paul Read, *Skyline Goes After Cable Subscribers,* JOURNAL OF BUSINESS - SPOKANE, June 10, 1993 (wireless cable operator who relied on door-to-door marketing began advertising via television and radio).

[224] *See, e.g.*, WCA Comments at 3-4; Annette K. Hugh, *NCTA Invites Competitors To Enter Lion's Den*, PRIVATE CABLE PLUS WIRELESS CABLE, July 1994, at 17.

[225] People's Choice Comments at 7.

[226] *Gerard Klauer Mattison Conference*, *supra* note 217, at 1.

81. The wireless cable industry has a number of strengths *vis-a-vis* cable. First, wireless cable system operators appear to incur lower costs for the initial construction of their systems.[227] One analyst estimates that wireless cable systems have capital costs that are one-third lower than the capital costs of cable systems.[228] The lower initial construction cost allows wireless operators to provide comparable service at lower prices than cable.[229] Indeed, it has been argued that those lower prices are the basis for the growth of wireless cable up to this point.[230]

82. Second, it appears wireless operators may be able to upgrade their systems to employ digital compression and interactive applications at a lower cost per subscriber than cable system operators.[231] A study undertaken by People's Choice TV estimated that upgrading to digital compression and interactive applications would cost cable operators almost twice as much as wireless operators.[232]

83. Third, in contrast to cable system operators, wireless cable operators are not required to obtain franchises in order to provide service.[233] However, at least one state now

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[227] TOWARD COMPETITION, *supra* note 132, at 128. Johnson believes this is particularly true in cases where the owner of the cable system paid significantly more than the replacement cost of the system.

[228] R.S. Salomon, Jr., *Can Wireless Compete?* FORBES, Oct. 11, 1993, at 182. Another observer estimates that the total per-subscriber investment for wireless operators is $400-$500 compared with $700 per subscriber for cable. TOWARD COMPETITION, *supra* note 132, at 128.

[229] WCA Comments at 10-12. It has been reported that wireless cable rates are 25% lower than cable rates for comparable service. G. ROBERT BERZINS, WIRELESS CABLE: A STRONG COMPETITIVE THREAT TO CABLE 3 (Kidder, Peabody & Co. Research, July 20, 1994). In addition, the president of Cross Country Wireless Cable TV, Inc. recently stated that 77% of the subscribers in its Riverside, California system subscribe to Cross Country because of its lower prices. *Attack of the Wireless Entrepreneurs*, *supra* note 221, at 29.

[230] *Attack of the Wireless Entrepreneurs*, *supra* note 221, at 29. *See also* TOWARD COMPETITION, *supra* note 132, at 129 (stating that wireless cable systems' success depends on their ability to undercut their competitors' prices while offering comparable programming).

[231] *Gerard Klauer Mattison Conference*, *supra* note 217, at 1-3; BERZINS, *supra* note 229, at 3.

[232] *Gerard Klauer Mattison Conference*, *supra* note 217, at 1-3.

[233] *See Definition of a Cable Television System, Report & Order* ("*Definition of a Cable System Report & Order*"), 5 FCC Rcd 7638 (1990); *see also* TOWARD COMPETITION, *supra* note 132, at 157: ("Franchising requirements and public service obligations imposed by local governments are a major impediment to full and fair competition . . . .")

regulates various aspects of the customer service provided by wireless cable operators and other MVPDs.[234]

84. Finally, wireless systems may have technological advantages. Because radio frequencies rather than wires are used to deliver signals to subscribers, it has been suggested that there is both less signal degradation, which results in higher picture quality, and fewer outages than with cable systems.[235]

85. However, WCA has pointed to several remaining obstacles which it claims could hamper the growth of wireless cable. First, wireless cable operators have difficulty in gaining access to a sufficient number of channels to provide a competitive service.[236] As previously noted, wireless cable operators may assemble a maximum of thirty-three channels to transmit programming in any one market. Moreover, while some operators have accumulated thirty or more channels, others have encountered difficulty in obtaining licenses. That difficulty results in part from the opportunities for "warehousing" of licenses that both the MMDS and ITFS licensing methods have presented.[237]

86. In order to bring the application process under control, and to prevent further speculative filings, the Commission instituted application freezes both for new MDS

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[234] 5 Cal. Gov. Code 1(a) §§ 53088.1-53088.2.

[235] NORDBERG CAPITAL, INC., THIRD GENERATION TELEVISION 4 (Industry Study Oct. 21, 1993) Wireless cable's possible advantage in the area of signal quality may disappear as cable operators begin transmitting their signals digitally. BERZINS, *supra* note 229, at 4.

[236] WCA Comments at 6-7.

[237] *See Amendment of Part 74 of the Commission's Rules With Regard to the Instructional Television Fixed Service, Order & Further Notice of Proposed Rulemaking*, 9 FCC Rcd 3348 (1994) (addressing ITFS filing abuses and application processing issues); *Amendment of Parts 1, 2, & 21 of the Commission's Rules Governing Use of Frequencies in the 2.1 & 2.5 GHz Bands, Notice of Proposed Rulemaking,* 7 FCC Rcd 3266 (1992) (noting the volume of MMDS applications received by the Commission and instituting a freeze on these applications).

Pursuant to the Omnibus Budget Reconciliation Act of 1993, the Commission now has authority to issue certain licenses by competitive bidding. Communications Act § 309(j)(1), 47 U.S.C. § 309(j)(1). The Commission has determined that mutually exclusive applications for MDS and MMDS licenses filed after July 26, 1993 shall be resolved by using competitive bidding. *Implementation of Section 309(j) of the Communications Act - Competitive Bidding, Second Report & Order* ¶ 62, 9 FCC Rcd 2348, 2353 (1994).

stations,[238] and for new ITFS stations or major modifications to ITFS applications or facilities.[239] WCA states that these application freezes, along with extensive use of ITFS channels by educational institutions in certain markets, have slowed the accumulation of channels by wireless operators.[240] On June 9, 1994, the Commission undertook several steps aimed at eliminating regulatory delays for wireless cable licensing, one of which was to lift the application freeze for major modifications to ITFS licenses.[241] The WCA believes that the Commission's substantive and administrative improvements in wireless cable licensing will improve the Commission's ability to process the pending legal and application backlogs.[242]

87. Second, wireless cable transmitters must have line-of-sight access to a home in order for that home to be capable of receiving wireless cable service. Consequently, many homes are unable to receive service from this technology because they are blocked by trees or buildings. It has been estimated by one analyst that the average wireless cable operator has line-of-sight access to seventy-five percent of the homes in its service area.[243] That percentage varies depending on the strength of the wireless cable transmitter and the topography of the service area. WCA reports that a low-cost signal booster, which allows

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[238] *Amendment of Parts 1, 2, and 21 of the Commission's Rules Governing Use of Frequencies in the 2.1 and 2.5 GHz Bands, Notice of Proposed Rulemaking*, 7 FCC Rcd 3266 (1992).

[239] *Amendment of Part 74 of the Commission's Rules With Regard to the Instructional Television Fixed Service, Notice of Proposed Rulemaking*, 8 FCC Rcd 1275 (1993).

[240] WCA Comments at 6-7.

[241] At its June 9, 1994 meeting, the Commission adopted three orders pertaining to wireless cable. One rule change permitted more streamlined ITFS application processing. *Amendment of Part 74 of the Commission's Rules With Regard to the Instructional Television Fixed Serv., Order & Further Notice of Proposed Rulemaking*, 9 FCC Rcd 3348. The second allowed all educational programming to be "loaded" onto a single ITFS channel, thus allowing the other three channels to be leased to the wireless operator on a full-time basis. *Amendment of Part 74 of the Commission's Rules Governing Use of the Frequencies in the Instructional Television Fixed Serv., Report & Order*, 9 FCC Rcd 3360. The third centralized the processing and regulatory jurisdiction over wireless cable in the Mass Media Bureau. *Amendment of Parts 0 and 1 of the Commission's Rules to Reflect a Reorganization of Multipoint & Multichannel Multipoint Dist. Serv. Regulation, Order*, 9 FCC Rcd 3661. As part of this administrative reorganization, the Commission has assembled a team of 20 engineers, attorneys and analysts to process the pending wireless cable applications and petitions.

[242] WCA Comments at 7.

[243] BERZINS, *supra* note 229, at 4-5.

homes without line-of-sight to receive service, recently has been developed.[244] If effective, this technology would increase the number of "homes seen" by wireless systems. It is unclear, however, whether signal boosting can be accomplished in most wireless systems on a cost-effective basis.[245]

88. Third, wireless operators complain that their operations are hampered by the fact that they cannot interconnect separately-owned buildings by wire, even if the wire only crosses private property.[246] WCA states that the interconnection of subdivisions, townhomes and trailer parks by wire is more efficient than interconnection by microwave, which requires the purchase of expensive equipment.[247] Accordingly, WCA contends that Congress's failure to extend the "private cable" exemption of the Communications Act[248] to interconnection of *separately*-owned buildings on private property is "one of the greatest impediments to competition."[249]

89. Finally, WCA has suggested that a potential impediment to the growth of wireless cable services is alleged anticompetitive behavior by cable operators.[250] For example, WCA described situations in which franchised cable operators may have induced local ITFS licensees to not lease their excess capacities to wireless cable operators.[251] The record does not contain the necessary evidence to determine how widespread those allegedly anticompetitive practices might be. However, to the extent that aggrieved parties believe that

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[244] Andrew Kreig, *Major Digital Initiatives, New Products Announced*, SPECTRUM (Newsletter of WCA) (July 1994) at 3; *See also* John Ramsey, *MMDS: The Advent of Latin American Pay TV; Method of Delivering Pay Television Programs*, SATELLITE COMM., Aug. 1993, at 17.

[245] TOWARD COMPETITION, *supra* note 132, at 133.

[246] In its *Definition of a Cable System, Report & Order ("Definition of a Cable System")*, 5 FCC Rcd 7638, *aff'd sub nom., FCC v. Beach Communications, Inc.*, ___ U.S. ___, 113 S. Ct. 2096 (1993), the Commission reversed its earlier position and concluded that a private cable system that interconnects by wire separately-owned or controlled buildings on private property is a "cable system," and therefore must obtain a franchise prior to offering service.

[247] WCA Comments at 18-19.

[248] Section 602 of the Communications Act exempts from the definition of a cable system "a facility that serves only subscribers in 1 or more multiple dwellings under common ownership, control or management, unless such facility or facilities us[e] any public right-of-way." 47 U.S.C. § 522(7)(B).

[249] *Id.*

[250] WCA Comments at 22-26; People's Choice Comments at 3.

[251] WCA Comments at 22-26.

such conduct violates Commission rules, their concerns may more properly be addressed in an appropriate complaint before the Commission, rather than in this *Report*.

90. Overall, it appears that two of the wireless cable industry's most significant problems, lack of capital and insufficient channel capacity, are being addressed. First, the program access provisions of the 1992 Cable Act appear to have given wireless operators the credibility to raise money in the public debt and equity markets, thereby easing the financial difficulties experienced by many wireless systems.[252] Second, the combination of improved Commission licensing and the use of digital compression is expected to alleviate wireless cable's channel capacity problem in the near future. The progress in these two areas has led some analysts to forecast continued growth for this industry. One industry analyst predicts that the wireless industry will serve 800,000 subscribers by the end of 1994, and 3.2 million subscribers by the year 2000.[253] That report also contained an estimate that the subscriber total will be drawn from approximately thirty-seven million homes capable of receiving wireless cable,[254] which would mean that wireless cable services would be subscribed to by 8.7% of the households to which it is available.

4. Satellite Master Antenna Television Systems (SMATV)

91. SMATV system operators (also known as "private cable systems") are MVPDs that serve residential, multiple-dwelling units ("MDUs"), and various other buildings and complexes. A SMATV system offers, in general, the same type of programming as a cable system, and the operation of a SMATV system, in large part, resembles that of a cable system -- a satellite dish receives the programming signals, equipment processes the signals, and wires distribute the programming to individual dwelling units. The primary difference between the two is that SMATV systems typically are unfranchised, stand-alone systems that serve a single building or complex, or a small number of buildings or complexes in relatively close proximity to each other. However, SMATV operators are increasingly using microwave facilities to interconnect properties spread over a metropolitan area.

92. Currently, one industry source estimates that there are approximately 3000 to 4000 SMATV systems operating nationwide.[255] As of August 15, 1994, approximately one

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[252] *Id.* at 2-3.

[253] *Critical Mass*, *supra* note 216, at 1. Another analyst believes that wireless cable will serve four million customers by 2000. BERZINS, *supra* note 229, at 1.

[254] A total of 37 million homes would represent approximately 40% of all homes in the United States. TOWARD COMPETITION, *supra* note 132, at 150.

[255] Letter dated Aug. 12, 1994 from Deborah C. Costlow, Esq., counsel to various private and wireless cable operators, to Cable Services Bureau staff ("Costlow Letter").

million subscribers were served by SMATV systems.[256] It is projected that by the end of 1994 there will be approximately 1.03 million subscribers to SMATV systems in MDUs, and over 1.10 million such subscribers by the end of 1995.[257]

93. Instances of SMATV service to MDUs and other buildings and complexes include the following:

- Liberty Cable Corporation ("Liberty Cable") operates private cable systems in Manhattan, New York, competing head-to-head with the incumbent franchised cable systems operated by Time Warner. According to its comments, Liberty Cable serves approximately 20,000 subscribers, and currently is adding approximately 1000 new subscribers each month.[258] Liberty Cable claims that it offers its services at approximately one-half the price of Time Warner.[259] Liberty Cable also comments that it has expanded the scope of its operations through use of an 18 GHz microwave network, which links its facilities without the need to use public rights-of-way.[260]

- MSE Cable Systems, Inc. ("MSE") provides SMATV service to MDUs and mobile-home parks in Southeast Michigan. MSE reportedly has grown from four systems passing approximately 2000 homes to thirty systems passing approximately 16,000 homes. It is suggested that MSE began serving its mobile-home park subscribers at a time when no franchised cable operators offered service to those locations, and thus developed its business by filling the need for video programming service in those locations.[261]

- Cable Plus, headquartered in Bellevue, Washington, operates SMATV systems in nine states, mostly in the west. In five years, it has grown

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[256] *Cable & Pay TV Census -- August,* MARKETING NEW MEDIA, Aug. 15, 1994.

[257] *Id.* at 4.

[258] Liberty Cable Comments at 2, nn.2, 7.

[259] *Id.* at 7-8.

[260] *See Amendment of Part 94 of the Commission's Rules to Permit Private Video Distribution Systems of Video Entertainment Access to the 18 GHz Band, Report and Order*, 6 FCC Rcd 1270 (1991).

[261] Costlow Letter, *supra* note 255, at 2

from 8 systems passing approximately 2500 homes, to approximately 200 systems passing approximately 50,000 homes.[262]

- OpTel, Inc. has been operating SMATV systems since November, 1993. OpTel provides SMATV service to more than 330 properties, passing more than 105,000 households and serving more than 41,000 subscribers, in the Los Angeles, San Diego, Houston, Phoenix and the Dallas-Ft. Worth metropolitan areas. OpTel reportedly makes extensive use of 18 GHz microwave links to connect the facilities it serves, and also uses other delivery technologies, including coaxial and fiber optic cable. It is reported that 25% of OpTel's customers receive at least fifty-four channels, and the company expects to upgrade most of its remaining systems to provide similar channel capacity.[263]

- MaxTel Cablevision has SMATV operations in twenty-five states. Originally formed as a subsidiary of a real estate development company, MaxTel now serves approximately 280 properties. Its systems pass nearly 85,000 households and have 42,000 subscribers.[264]

94. SMATV operators may have the ability to offer lower prices than can wired cable operators for substantially the same services. Indeed, it is suggested that some SMATV operators may set their rates by looking to the rates charged by cable incumbents as guidelines and offering certain discounts from the cable rates.[265] It has also been reported that SMATV systems charge lower rates than franchised cable operators for premium services, with such price differences ranging from $1.00 per channel to an overall sixty percent discount.[266] One commenter suggests that SMATV operators are able to offer lower prices because cable systems are prohibited by Commission rules from engaging in price competition for a particular MDU where a SMATV system operates.[267]

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[262] *Id.*

[263] *Id.* at 2-3.

[264] *Id.* at 3.

[265] *Id.* at 2.

[266] *Id.*

[267] *See* Time Warner Comments at 25-26. Section 623(d) of the Communications Act requires a cable operator to have a uniform rate structure throughout the area served by its cable system. 47 U.S.C. § 543(d). In its *1993 Rate Report & Order,* the Commission observed that cable systems often offer bulk discounts to subscribers in MDUs, and expressed a desire that bulk discounts not be used as a means of displacing competition from alternative MVPDs, such as SMATV operators. *1993 Rate Report & Order* ¶ 424, 8 FCC Rcd at 5898.

(continued...)

95. On the other hand, regulatory barriers may artificially raise the cost of operating SMATV systems. First, where a SMATV system uses wires to connect separately-owned buildings, even though no public rights-of-way are crossed, a SMATV system is considered to be a "cable system" under the Communications Act, thereby requiring the operator to obtain a local franchise.[268] As is the case with wireless cable operators,[269] the statutory definition of "cable system" may thus have the unintended effect of raising the costs of SMATV operators, thereby having a negative effect on competition.

96. Moreover, SMATV operators contend that cable operator conduct under the Commission's cable home wiring rules has a chilling effect on competition.[270] Those rules, require, *inter alia*, that cable operators provide subscribers with the opportunity to acquire cable home wiring before the cable operator removes it from the premises after termination of service.[271] One SMATV operator argues that under these rules, it is unable to connect a subscriber that switched from the cable operator's services until after the cable operator disconnects and removes its equipment.[272] As a result, this SMATV operator contends that potential subscribers are dissuaded from switching to SMATV from their existing cable company.[273] However, it is unclear from this record whether these types of concerns reflect anticompetitive abuses, which can be remedied by changing the Commission's home wiring

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[267](...continued)
To prevent cable operator abuse, the Commission's regulations require that all similarly sized MDUs in a franchise area receive "the same bulk discount rate structure," and that the cable operator be able to demonstrate that it receives some economic benefit from offering the discount. *Id. See also Implementation of the 1992 Cable Act: Rate Regulation & Buy-Through Prohibition, Third Order on Reconsideration*, 9 FCC Rcd 4316 (1994).

[268] *See Definition of a Cable System*, 5 FCC Rcd 7638; Communications Act, §§ 602(5-7), 621(b)(1), 47 U.S.C. §§ 522(5-7), 541(b)(1).

[269] *See supra* ¶ 88.

[270] *See, e.g.,* Liberty Cable Comments at 16-18.

[271] 47 C.F.R. § 76.802. The purpose of the cable home wiring rules is to avoid the disruption from having the wire removed after service is terminated and to allow subscribers to utilize the wires with competing MVPDs, thereby facilitating competition from these entities. *Implementation of the 1992 Cable Act, Cable Home Wiring, Report & Order,* 8 FCC Rcd 1435 (1993), *recon. pending.,* MM Docket No. 92-260. The Commission currently has before it a petition to initiate a rulemaking to determine how cable subscribers may have access to existing cable home wiring for the delivery of competing and complementary services. *Joint Petition for Rulemaking on Cable Television Wiring, Public Notice,* 8 FCC Rcd 8184 (1993).

[272] Liberty Cable Comments at 16-17.

[273] *Id.*