the critical mass of subscribers necessary to make or break a new programming service.[410] Further, it asserted that a large MSO has no rational incentive to restrict its purchases from programmers, or its supply of programming to cable subscribers, by exercising purchasing power over programming suppliers.[411]

149. As shown herein, the persistence of high concentration at the local level tends to impair market performance.[412] In addition, Congress and the Commission have noted that greater national concentration may have both adverse and pro-competitive effects. On the one hand, large MSOs have assisted in the creation and survival of new and underfinanced programmers. On the other hand, those same MSOs may have used their programming purchasing power to deter the entry of new cable programmers or competitive alternatives to cable. To the extent that large MSOs used their power over vertically-integrated programmers to obtain exclusive distribution rights to satellite-delivered programming, and those exclusive rights disadvantaged competitors of those large MSOs, the 1992 Cable Act's program access provisions and the Commission's program access rules appear to have largely addressed the problem.[413]

150. Concentration at the national level enables cable operators to achieve certain efficiencies, such as discounts for programming.[414] Programming costs are a significant portion of total operating costs, accounting for about thirty-six percent of expenditures.[415] Lower prices for programming result from two aspects of firm size. First, given that many programmers grant quantity discounts based on the number of subscribers, larger MSOs will pay lower prices for programs than their non-MSO counterparts. Second, the largest MSOs also may be able to exert superior bargaining power, and thereby, negotiate significant discounts for programming.[416] Lower prices for programming are not, in themselves, a cause

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[410] TCI Comments, App. A at 23. TCI also stated that the point of "critical mass" was different for each type of programming, depending on the cost of production. At another place, TCI acknowledged that increased concentration among MSOs reduces transaction costs for programmers. TCI Comments at 12-13, App. B at 7.

[411] TCI Comments, App. B at 14.

[412] *See infra* § V.A.2.

[413] *See infra* § IV.B.2.a.

[414] TASNEEM CHIPTY, HORIZONTAL INTEGRATION FOR BARGAINING POWER: EVIDENCE FROM THE CABLE TELEVISION INDUS. 3, 20-21 (Conference Paper, AEI Telecommunications Summit: Competition & Strategic Alliances, Am. Enter. Inst., July 7, 1994).

[415] TOWARD COMPETITION, *supra* note 132, at 43.

[416] *Id.* at 3, 20-21. The authors of a 1988 study on concentration contended that discounting was prevalent throughout the cable industry, citing price differentials in excess of

(continued...)

for concern. Discounts on programming can significantly lower the cost of packaging and distributing the cable product. Lower costs also might increase the profits of an MSO which can, in turn, use those funds to increase the supply and quality of programming. However, greater programming discounts, if unfairly and discriminatory granted, may be a competitive concern.

151. Concentration in regional, or locally clustered, marketing areas may also be pro-competitive or anti-competitive.[417] Regional concentration may result in significant efficiencies. A centrally-located regional installation and maintenance office can perform those functions for a number of nearby markets, allowing more efficient use of high-capacity, productive assets. Duplication of other factors of production, such as management, billing, and office space, may also be eliminated by regional clustering. Advertising, marketing and sales functions might realize such economies as well. Larger firms may also realize economies in the purchase of inputs of production, such as programming.[418] Moreover, it may be possible to spread fixed headend costs over a large number of subscribers using fiber optic links. If fiber optic links are substituted for headends, some scale economies could be achieved by eliminating duplication of headend equipment. That flexibility may allow cable firms to adopt more efficient system sizes, and thereby, lower their costs.

152. The sharing of fixed resources required for the deployment of innovative services, including video-on-demand, may also be characteristic of regional economies of scale. Interlinked cable systems will eliminate the need for costly duplication of expensive capital equipment required for these new services. If duplication is required, the access costs related to innovative services may not warrant their provision in less densely populated or rural cable markets. However, if a group of markets were all served from a central location, a standard product could be served to all customers within the cluster. If so, consumers will benefit as the new services will be deployed more rapidly to all markets.

153. Clustering may also reflect the desire of cable operators to enter the telephone business, or it may reflect strategic decisions by cable operators to position themselves to compete against LECs that are poised to enter the market for the distribution of multichannel

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[416](...continued)
90%. NATIONAL TELECOMMUNICATIONS & INFO. ADMIN., U.S. DEP'T OF COMMERCE, NTIA REP. 88-233, VIDEO PROGRAM DIST. & CABLE TELEVISION: CURRENT POLICY ISSUES & RECOMMENDATIONS 81 (1988).

[417] Some of the recently announced mergers involve such clustering. For example, the Cox-Times Mirror transaction involves clusters in Southern California and New England. The Comcast-Maclean Hunter acquisition involves clusters in Michigan, and New Jersey. The Cablevision-Sutton purchase involved a New Jersey cluster.

[418] CHIPTY, *supra* note 414.

video programming.[419] Creating large geographic regions of contiguous cable markets may allow a single MSO to construct more cheaply the network necessary to provide telephone services on a wide scale. By connecting the contiguous systems with fiber optic links, a large regional cable firm may be able to compete better in both voice and video distribution with the RBOCs, which serve large geographic regions.[420] Future cable networks that offer multiple services (voice, video, and data) may require companies to serve larger markets in order to fully take advantage of economies of scale and scope. Therefore, clustering may be viewed as pro-competitive both in terms of cable companies' entry into the market for switched voice and data services, and in terms of positioning themselves for potential competition from LECs in the market for video programming

154. There are, however, competitive risks associated with increased regional clustering of commonly-owned cable systems. The creation of large, contiguous clusters of commonly-owned systems may result in the removal of cable systems that are not affiliated with large MSOs from significant regions of the country. Those "independent" systems may serve presently as a competitive constraint, offering a credible threat of expansion into adjacent markets. If high capital expenditures discourage entry, then adjacent systems may be the most likely entrants, because such systems may be able to use parts of their existing cable plant to support expansion into adjacent areas.[421] The elimination by acquisition of these potential competitors may increase the market power of clustered systems by decreasing the likelihood of entry.

155. A possible consequence of the accumulation of large regional clusters of interconnected cable systems is that such systems may send an entry-deterring signal to potential rivals. When a firm incurs substantial sunk costs by investing in its operations, it signals a long-term commitment to the market. Cable firms making the first move to provide a fiber-based broadband network may dissuade potential entrants from entering the market, or cause then to enter on a smaller scale. For example, a commitment by an MSO to build an integrated broadband network capable of delivering a wide variety of services may discourage the more limited wireless systems from investing in particular markets.[422] Moreover, increased concentration in tightly clustered markets may also enable the few surviving cable operators to coordinate their conduct, with the effect of raising rivals' costs. Nevertheless,

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[419] *See* Geraldine Fabrikant, *Time Warner and Newhouse Form Joint Cable Operation*, NEW YORK TIMES, September 13, 1994, at D1; Paul Farhi, *Time Warner Cable Combination*, WASHINGTON POST, September 13, 1994, at D1; Amy Harmon & J. Lippman, *Times Mirror Deal with Cox Signals New Strategy*, LOS ANGELES TIMES, June 6, 1994, at A1.

[420] *Id.*

[421] *See* C. Cramer, *Local Competition for Telephone Service*, REV. OF INDUS. ORG. 273-91 (June 1994). Existing headends and trunk lines that could be used in expanding the reach of an adjacent cable system account for twenty-five percent of cable plant investment.

[422] *See* JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 368 (1988).

major sunk cost investment by cable systems should expand and improve the quality of services provided to subscribers. Therefore, there may exist complex tradeoffs between the potential consumer benefits that are provided by the sunk cost investments of incumbent cable systems and the potential consumer benefits that new entrants may offer consumers if not deterred by incumbent cable systems.

3. *Conclusion*

156. The record in this proceeding shows that horizontal concentration in the cable industry has increased moderately since 1990. If the recently announced mergers are consummated, they will result in a further increase in concentration. The Commission will monitor further changes in concentration, and will complete its reconsideration of the horizontal concentration rules. Furthermore, the Commission will continue its analysis of the possible economic efficiencies and inefficiencies of horizontal concentration. Finally, the Commission will continue to evaluate issues associated with industry mergers as required by its implementation of the horizontal ownership provisions of the 1992 Cable Act,[423] as well as by its public interest responsibilities under other provisions of the Communications Act.[424]

B. Vertical Integration in the Cable Industry

157. In the *1990 Cable Report,* the Commission found that vertically-integrated cable operators have the ability to deny competing MVPDs access to programming services in which cable operators have ownership interests.[425] The Commission concluded that such practices could jeopardize the viability of new competition to cable. The Commission also observed that programming services, particularly new ones, at times had difficulty obtaining carriage on cable systems.[426]

158. In response to similar record evidence and in order to promote competition in the program supply and distribution markets, Congress enacted provisions of the 1992 Cable Act that limit the ability of vertically-integrated satellite programming vendors and cable operators to inhibit competitive entry into both the programming supply and distribution

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[423] 47 U.S.C. § 533(f). The Commission's implementation of the horizontal ownership provisions of the 1992 Cable Act will depend on the ultimate disposition of those provisions on appeal, as well as the Commission's reconsideration of its existing horizontal ownership rules, which the Commission has stayed. *See supra* ¶ 140.

[424] *See, e.g.*, 47 U.S.C. §§ 310(d).

[425] *1990 Cable Report* ¶ 113, 5 FCC Rcd at 5021. Vertical integration in the cable industry refers to situations where cable operators, or companies with which they are affiliated, hold interests in vendors that supply video programming to cable systems and other MVPDs, and vice versa.

[426] *1990 Cable Report* ¶ 113, 5 FCC Rcd at 5021.

markets.[427] Specifically, Section 11 of the 1992 Cable Act required the Commission to adopt, *inter alia*, restrictions on the number of channels on a cable system that can be occupied by programming services in which the operator has an attributable interest.[428] Section 12 of the 1992 Act prohibits cable operators and other MVPDs from: (1) requiring that they have a financial interest in a programming service as a condition for carriage; (2) coercing programming vendors to provide exclusive rights as a condition of carriage; and (3) discriminating on the basis of affiliation of vendors in the selection, terms or conditions of carriage.[429] Finally, Section 19 of the 1992 Act prohibits unfair methods of competition and proscribes several specific practices by vertically-integrated satellite cable programming vendors, satellite broadcast cable programming vendors, and cable operators, including, in certain circumstances, the granting of "exclusivity" provisions in cable carriage contracts.[430]

159. On April 1, 1993, the Commission implemented Section 19 by adopting rules that prohibit unfair and discriminatory acts and prohibit or limit the types of exclusive programming contracts that may be entered into between cable operators and vertically-integrated programming vendors (the "program access rules").[431] On September 23, 1993, the Commission issued rules implementing Section 11, which restrict the number of channels on a cable system that may be occupied by programmers affiliated with the owner of that system (the "channel occupancy rules").[432] In a separate order, also issued on September 23,

[427] Communications Act, §§ 612(f)(1-2), 628, 47 U.S.C. §§ 533(f)(1-2), 548. Congress noted that it had received information that "some vertically integrated MSOs have agreed to carry a programming service only in exchange for an ownership interest in the service. . . . Other witnesses . . . testified that vertical relationships strongly promote diversity and make the creation of innovative, and risky, programming services possible." H.R. REP. NO. 862, *supra* note 11, at 41. The Senate committee stated that "to encourage competition to cable, the bill bars vertically integrated, national and regional cable programmers from unreasonably refusing to deal with any multichannel video distributor . . . ." S. REP NO. 92, *supra* note 11, at 28. Congress also recognized that exclusivity could be a "legitimate business strategy where there is effective competition. Where there is no effective competition, however, exclusive arrangements may tend to establish a barrier to entry and inhibit development of competition in the market." *Id.*

[428] Communications Act § 613(f)(1)(B), 47 U.S.C. § 533(f)(1)(B).

[429] Communications Act § 616, 47 U.S.C. § 536.

[430] Communications Act, §§ 628(b-c), 47 U.S.C. §§ 548(b-c).

[431] *Program Access Report & Order* ¶¶ 123-41, 8 FCC Rcd at 3416-23; *see also* 47 C.F.R. §§ 76.1000 *et seq.*

[432] *Second Ownership Report & Order*, 8 FCC Rcd 8565 (1993), *recon. pending*; 47 C.F.R. §§ 76.501, 76.504. Compliance with those channel occupancy rules is to be monitored in the first instance at the local level and enforced through a complaint process. *Second Ownership Report & Order* ¶¶ 98-99, 8 FCC Rcd at 8606; 47 C.F.R. § 76.504(e).

the Commission adopted rules implementing Section 12 of the Act, which prohibit cable operators from coercing programming vendors into granting them exclusive rights and from discriminating against program suppliers on the basis of the operators' ownership interests (the "program carriage" rules).[433]

160. As discussed in the following sections, the level of vertical integration in the cable industry has remained at roughly the same level as found in the *1990 Cable Report*. However, the program access provisions of the 1992 Act and the Commission's implementation of its program access rules have helped ensure that satellite-delivered programming is made available to competing MVPDs and has reduced the gap between programming prices paid by cable operators and their competitors. Moreover, since 1990, there has also been growth in the diversity and quality of programming services that are offered or whose launch has been announced. Although the Commission believes that its program access rules have generally been successful in ensuring the supply of programming to competing MVPDs, there remain a number of unresolved issues relating to vertical integration that require further attention.

1. Status of Vertical Integration in 1994

161. While the number of vertically-integrated national programming services has grown substantially since 1990, so too has the overall number of programming services available for distribution. Consequently, approximately 53% of programming services are integrated with cable system operators today, compared with 50% of programming services that were vertically integrated in 1990.[434]

162. The Commission noted in the *1990 Cable Report* that all of the successful channels that were introduced after passage of the 1984 Cable Act were affiliated with cable system operators,[435] and today, vertically-integrated national programming services continue to dominate the group of services that are most widely viewed. Twelve of the top fifteen most-watched services, according to prime-time rankings, are vertically integrated, an increase from ten in 1990.[436] Cable operators have interests in fifteen of the top twenty-five

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[433] *Program Carriage Report & Order*, 9 FCC Rcd 2642 (1993).

[434] Since the time of the data used in the *1990 Cable Report*, the overall number of national programming services has increased from 70 to 106. *Compare 1990 Cable Report*, Appendix G, Tables IV-V, 5 FCC Rcd at 5109-10, *with* Appendix G, Tables 3-4 of this *Report*. It appears that MSOs have increased their ownership in national programming services from a total of thirty-five services in 1990 to fifty-six in 1994. *Compare 1990 Cable Report*, Appendix G., Table IV, 5 FCC Rcd at 5109, *with* Appendix G, Table 3 of this *Report*.

[435] *1990 Cable Report* ¶ 80, Appendix G, 5 FCC Rcd at 5007, 5106.

[436] *See* Appendix G, Table 8.

services, an increase from thirteen in 1990.[437] It is too early to determine, however, whether vertically-integrated services that have been introduced since 1990 will be more successful than their non-integrated counterparts.

163. There has been only moderate change since 1990 in cable system ownership of the most popular programming services. All but three of the top twenty-five programming services listed in the *1990 Cable Report* are still in the top twenty-five. One of the three services that have entered the top twenty-five since 1990, Comedy Central, has cable ownership interests, and two, EWTN and Prevue Channel, are not vertically integrated.[438] Since the *1990 Cable Report*, cable operators acquired ownership interests in two of the top twenty-five services and divested interests in one.[439]

164. In total, cable operators have acquired interests in eight existing programming services that had no cable ownership in 1990.[440] Those include the April 1994 acquisition of Paramount Communications, Inc., by Viacom International, Inc., in which Viacom acquired ownership interests in the USA Network and the Sci-Fi Channel.[441] TCI/Liberty Media also acquired a controlling interest in the Home Shopping Network, which offers two programming services.[442] Gaylord Entertainment ("Gaylord"), an owner of three cable systems, acquired Country Music TV, The Nashville Network and superstation KTVT.[443]

165. During this same period, cable operators divested themselves of five existing programming services. Viacom sold its interest in Lifetime to Hearst and Capital Cities/ABC.[444] Cablevision sold its interest in CNBC to NBC.[445] Nostalgia and The Travel

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[437] *See* Appendix G, Table 7. The top 25 programming services are determined by number of subscribers.

[438] *See* Appendix G, Table 7.

[439] Gaylord Entertainment ("Gaylord") acquired The Nashville Network. Viacom acquired the USA Network through its purchase of Paramount and sold its interest in Lifetime.

[440] *Compare 1990 Cable Report*, App. G, at Tbls. 4-5 *with* NCTA Comments, Attachment C, at Tables 1-2.

[441] Viacom Reply Comments at 1-2.

[442] Liberty Media Comments at 12.

[443] *Nashville Network's Parent Going Public*, MULTICHANNEL NEWS, Sept. 2, 1991, at 34; Richard A. Oppel, Jr., *Country and Western Europe; Gaylord Strums Its Stuff Overseas on Cable Network*, DALLAS MORNING NEWS, Mar. 14, 1993, at 1H.

[444] *Viacom Sells 1/3 Interest in Lifetime to Hearst & Capital Cities/ABC for $317.6 Million*, CABLE TV PROGRAMMING, Mar. 31, 1994, at 1.

Channel were reported in 1990 as having MSO ownership, but since then, cable operators have divested those interests.[446] Finally, a few of the programming services listed in the *1990 Cable Report* have gone bankrupt or have merged with other services. The Fashion Channel, a financial investment of TCI, went bankrupt in 1991.[447] In late 1992, VISN, a TCI investment, merged with American Christian TV System ("ACTS") to form the Faith and Values Channel, in which TCI has no ownership interest.[448]

166. Since 1990, thirty-six new programming services have been launched, twenty-two of them since the passage of the 1992 Cable Act.[449] Of the services launched after 1990, twenty are owned in part by one or more cable operators.[450] The Commission has examined the market penetration growth of the fourteen new services that had more than one million subscribers after their launch, the results of which are set forth in Table 4.1.[451]

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[445](...continued)
[445] CABLEVISION SYS. CORP., 1991 ANNUAL REPORT 14 (DEC. 31, 1991).

[446] *Compare 1990 Cable Report*, App. G, tbls IV-V, 5 FCC Rcd at 5109-10, *with* NCTA Comments, Attachment C, Tables 1-2.

[447] TCI Comments, App. A, at 18. QVC, a programming service owned in part by TCI, acquired the bankrupt Fashion Channel's transponder rights and affiliation agreements in 1989. *QVC Buys Out Fashion Channel as Comedy Wars Continue*, COMM. DAILY, Dec. 15, 1989, at 3. In 1991, QVC launched the QVC Fashion Channel. *QVC Will Launch New Shopping Channel*, COMM. DAILY, June 19, 1991, at 6.

[448] *Union of Religious Cable TV Networks Blessed by TCI, Jones*, DENVER BUS. J., Oct. 16,, 1992, at 15.

[449] *See* Appendix G, Tables 3-4.

[450] *Id.* However, only 30 of the 98 newly announced programming services are owned, in whole or in part, by cable operators. *See* Appendix G, Table 5.

[451] Of these fourteen new programming services, five -- Fox Net (launched in July 1991), Value Vision (October 1991), Mor Music TV (August 1992), ESPN2 (October 1993) and Americana Television (April 1994) -- had no cable system investment. Cable system operators had investments in nine of the new services examined -- the International Channel (launched in July 1990), Comedy Central (April 1991), Court TV (July 1991), QVC Fashion Channel (December 1991), Cartoon Network (October 1992), Z Music (March 1993), Cable Health Club (October 1993), MTV Latino (October 1993), and the Television Food Network (November 1993). Total United States subscribers taken from *Basic Cable: 1975-1993*, CABLE TELEVISION DEVELOPMENTS 2-A (National Cable Television Assoc. Apr. 1994). Average penetration based on subscriber counts for listed systems as a percent of total United States subscribers. The subscriber counts are taken from *Database, Network Subscriber Counts*, CABLEVISION, Apr. 25, 1994, at 44; *Database, Network Subscriber Counts*, CABLEVISION, Dec. 6, 1993, at 106; *Database, Network Subscriber Counts*, CABLEVISION,
(continued...)

Table 4.1
Average Market Penetration of
New Programming Services[452]

	Market Penetration at Launch	*Market Penetration after One Year*	*Market Penetration after Two Years*
Services with Cable Ownership	7.17%	11.11%	20.83%
Services with No Cable Ownership	5.35%	8.66%	7.75%*

* Based on information for only two services.

It appears that vertically- integrated services, on average, achieved greater market penetration in their first two years than services without cable ownership. On the other hand, ESPN2, a new service with no cable ownership, had the highest penetration at launch of any new programming services and continues to grow at a steady rate.[453]

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[451](...continued)
Feb. 2, 1993, at 42; *Database, Network Subscriber Counts*, CABLEVISION, Sept. 21, 1992, at 54; *Database, Network Subscriber Counts*, CABLEVISION, May 4, 1992, at 102; *Database, Network Subscriber Counts*, CABLEVISION, Oct. 21, 1991, at 52; *Database, Network Subscriber Counts*, CABLEVISION, Mar. 11, 1991, at 60; *Database, Network Subscriber Counts*, CABLEVISION, Nov. 19, 1990, at 45.

[452] Source for Subscriber Counts: *Database, Network Subscriber Counts*, CABLEVISION, Apr. 25, 1994 at 44; Dec. 6, 1993 at 106; Feb. 2, 1993 at 42; Sep. 21, 1992 at 54; May 4, 1992 at 102; Oct. 21, 1991 at 52; Mar. 11, 1991 at 60; Nov. 19, 1990 at 45. The penetration figures are calculated as the percent of total U.S. subscribers in that year: 1990 -- 54,871,330 subscribers; 1991 -- 55,786,390 subscribers; 1992 -- 57,211,600 subscribers; and 1993 -- 58,834,440 subscribers. NCTA, *Cable Television Developments*, Apr. 1994 at 2-A.

[453] ESPN2 launched with 10 million subscribers, approximately 1.7 million more than Comedy Central's initial 1991 launch, the next-best successful launch of the group studied.

It is unclear to what extent ESPN2's early growth is related to negotiations between its broadcast network corporate affiliate, ABC, and cable system operators relating to the "retransmission consent" provision of the 1992 Cable Act, 47 U.S.C. § 325(b). It has been reported that in those negotiations, ABC tied its consent to the carriage of its broadcast stations by various cable operators to the operators' agreement to carry ESPN2. *See, e.g., American Cable Television; Not Now, Darling*, THE ECONOMIST, Sept. 3, 1994, at 63; Bill Carter, *The Media Business; Networks' New Cable Channels Get a Big Jump on the Competition*, N.Y. TIMES, Mar. 14, 1994, at D7. As discussed *infra* at ¶ 173, NBC and Fox
(continued...)

167. Currently, there are fifty-six vertically-integrated programming services.[454] They are owned, in whole or in part, by only twenty MSOs. Twelve of those MSOs have at least a five-percent interest in one or more of the fifty-six services,[455] which qualifies as an "attributable ownership interest" under the Commission's program access rules.[456] An additional eight MSOs hold ownership interests of less than five percent in one or more of those services.[457]

168. Nine of the ten largest MSOs[458] have attributable ownership interests under the program access rules in one or more of these fifty-six programming services.[459] The four largest MSOs have partial ownership interests in seven of the fifteen most popular services and in nine of the top twenty-five.[460] TCI/Liberty Media, the nation's largest MSO, has attributable interests under the program access rules in twenty-three national programming services, which amounts to approximately 22% of the available programming services. Time Warner, the nation's second largest MSO, has attributable interests in sixteen national

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[453](...continued)
have also launched satellite-delivered programming services. As with ESPN2, it has been reported that the NBC and Fox programming services were part of their parents' negotiations under the retransmission consent provision of the 1992 Act. *See* Scott Hettrick, *Putting New Signature on Cable; QVC Tie May Enable CBS to Put Early Failure, Retrans Acrimony in Past*, THE HOLLYWOOD REPORTER, July 1, 1994; Richard Mahler, *A Look at Cable, 1994; Are We Really Close to This?*, L.A. TIMES, Dec. 31, 1993, at F1.

[454] *See* Appendix G, Table 3.

[455] *See* Appendix G, Tables 6, 9-10. The MSOs with attributable interests in programming include Cablevision, Comcast, Continental, Cox, Gaylord, Jones, Lenfest Communications ("Lenfest"), TCI/Liberty Media, Newhouse, Scripps-Howard, Time Warner and Viacom.

[456] *See* 47 C.F.R. § 76.1000(b).

[457] *See* Appendix G, Tables 6, 9-10. Those MSOs are Adelphia, CVI (Cablevision Industries), Colony Communications, C-TEC Cable, Sammons, TeleCable, Times Mirror and TKR.

[458] The only large MSO with no apparent attributable programming interests is CVI. One small MSO, Gaylord, has majority interests in three programming services and operates three cable systems that have a total of 63,195 basic subscribers. Appendix G, Table 9; 1994 FACTBOOK at D-1950.

[459] *See* Appendix G, Tables 6, 9-10.

[460] *See* Appendix G, Tables 7-8.

programming services, or approximately 15% of those available.[461] In contrast, in 1990, TCI held interests in twenty-two national programming services, which was 28.5% of the programming services available at that time. In 1990, Time Warner had interests in eight national programming services, representing 10% of available programming services.[462]

169. Twenty-four of the fifty-six vertically-integrated national programming services are owned, in part, by a single MSO having a 50% or greater ownership interest.[463] Viacom has a 50% or greater interest in twelve services, three of which are ranked among the top fifteen national programming services.[464] TCI/Liberty Media has a 50% or greater interest in three services.[465] Gaylord has a 50% or greater interest in three of the top fifteen national programming services. Four other MSOs have 50% or greater ownership interests in one or two services each.

170. There are nineteen national programming services that are each owned, in part, by several MSOs whose ownership interests, if aggregated, would comprise a majority interest in that programmer. Five of those are among the top fifteen services.[466] In contrast, there are only two vertically-integrated programmers that are each owned, in part, by several MSOs, whose ownership interests, if aggregated, would constitute a minority interest in that programmer.[467] In addition, there are five vertically-integrated programming services that have only one MSO with a minority ownership interest.[468]

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[461] *Id.*, Table 6.

[462] *1990 Cable Report* ¶ 77, 5 FCC Rcd at 5006.

[463] *See* Appendix G, Table 9. The MSOs are Cablevision, Gaylord, Jones, Lenfest, TCI/Liberty Media, Time Warner, and Viacom.

[464] *Id.*

[465] *Id.* TCI also has a 24.8% interest in Turner Broadcasting Systems ("TBS"), and three officers of TCI/Liberty Media are members of the Board of Directors of TBS. TCI Comments, App. A, Chart 4; TBS Comments at 3-4.

[466] *See* Appendix G, Table 10.

[467] *See* Appendix G, Table 10 at 2. One of these, Black Entertainment Television ("BET") was launched without cable investment. However, TCI and Time Warner provided financing to BET in return for equity interests in the programmer. TCI Comments, App. A, at 15-16; Time Warner Comments at 32-33.

[468] *See* Appendix G, Table 10. Only one of those services, The Family Channel, in which TCI/Liberty Media holds a minority interest, is ranked within the top fifteen national programming services. TCI/Liberty Media holds minority interests in the other four services -- Cable Health Club and the three Request Television services. Liberty Media Comments at 9.

171. Also included in the fifty-six vertically-integrated services are the two C-SPAN networks. Those services are considered programming services with cable interests because they receive funding from their cable affiliates. However, according to NCTA, cable operators have no ownership in, or program control over, the C-SPAN services.[469] Finally, there are four national programming services about which NCTA stated that cable system operators had ownership interests, but for which the Commission does not have information regarding the identity of the MSOs that hold the interests, or the amount of those interests in the identified services.

172. To complete the picture of vertical integration in national programming services, the Commission notes that ABC, NBC, and Fox, each own national programming services. ABC holds an eighty-percent ownership interst ESPN and ESPN2, has a fifty-percent interest in Lifetime and has a minority interest in A&E. NBC owns CNBC and America's Talking, has a fifty-percent interest in Bravo and has minority interests in A&E, AMC, and Court TV. Fox owns fX and Fox Net.[470]

2. *Competitive Effects of Vertical Integration*

a. *Competitive Access to Programming*

173. Commission Enforcement Activities. In contrast to the "substantial evidence of specific problems concerning program access" that were noted in the *1990 Cable Report*,[471] the commenters in this proceeding have not complained about widespread unavailability of programming to distributors competing with cable operators. For example, DirecTV states its belief that the program access provisions in the 1992 Cable Act and the Commission's regulations provide the most effective means for the development of competition to cable.[472] Moreover, the NCTA submits that the program access rules have facilitated increased competition in the video marketplace, and provide more than adequate remedies for instances of unfair conduct by vertically-integrated programming vendors.[473] These comments are consistent with the relatively small number of complaints filed with the Commission concerning denial of access to programming on the grounds of exclusivity agreements.

174. From November 1993, when the program access and carriage agreement regulations took effect, through June 30, 1994, only twelve program access cases were filed;

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[469] NCTA Comments, Attachment C, Table 3.

[470] *Cable Net Ownership*, CABLE TV PROGRAMMING, Aug. 29, 1994, at 2-3.

[471] *1990 Cable Report* ¶ 113, 5 FCC Rcd at 5021.

[472] DirecTV Comments at 2-3.

[473] NCTA Comments at 25-26.

eleven have since been resolved.[474] The Cable Services Bureau has asked for additional information in the one unresolved case. Most of the eleven resolved cases involved exclusivity issues.

175. Another nine cases were filed since late July 1994, and the pleading deadlines in those cases expire in September or October of 1994. Six of those late-July filings involve allegations of price discrimination brought by a single programming distributor. Two of the unresolved matters involve requests by CVI for Sci Fi Channel exclusivity and by Lenfest Communications (fifty-percent owned by TCI/Liberty Media) for exclusivity for a local news service. One additional price discrimination complaint was filed in September. In total, the Commission has received fifteen complaints, five petitions for a finding that exclusivity is in the public interest, and one petition for a waiver of the rules.

176. Two resolved cases involving petitions to the Commission to permit exclusive agreements between vertically-integrated programmers and cable operators are of particular note. In one of those matters, Time Warner filed a petition for exclusivity with regard to the Court TV network. In denying the petition, the Commission first concluded that a party seeking to show that an exclusivity agreement is in the public interest bears the burden of demonstrating that the public interest benefits from exclusivity outweigh its presumptively anticompetitive effects on competing distributors.[475] The Commission then found that continued enforcement of Time Warner's exclusive agreement for the distribution of Court TV adversely affected Liberty Cable's ability to compete effectively in the Manhattan market[476] and would be likely to have similar effects in other markets.[477] The Commission further found that no countervailing public benefits would be derived from the proposed exclusivity. Because Court TV is a viable, successful programming service with a broad and growing national appeal, as shown in part by its thirteen million subscribers, exclusivity was not found to be necessary for survival of the service or to promote diversity in programming.[478] Accordingly, the Commission concluded that continued enforcement of Time Warner's contract with Court TV was not in the public interest.[479]

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[474] A brief description of the resolved cases appears in Appendix F.

[475] *See Time Warner Cable -- Petition for Public Interest Determination Relating to Exclusive Dist. of Courtroom Television, Memorandum Opinion & Order ("Court TV Exclusivity Order")* ¶ 26, FCC 94-132 (No. CSR-4231-P June 1, 1994).

[476] *See Id.* ¶ 37. Liberty Cable is a SMATV system operator that competes in New York City with cable systems owned and operated by Time Warner .

[477] *Id.* ¶¶ 38-39.

[478] *Id.* ¶¶ 43-53.

[479] *Court TV Exclusivity Order* ¶ 55. Following the Commission's decision in this matter, Time Warner withdrew its petition for exclusivity with respect to distribution of

(continued...)

177. In the second case, the Commission found that New England Cable News ("NECN"), a regional news programming source that is fifty-percent owned by Continental Cablevision, had shown that exclusivity was critical to attract investment and secure distribution, which was essential to its financial viability.[480] NECN also showed that exclusive distribution would foster diversity.[481] The Commission found that exclusivity would not have an adverse effect on the development of competition with the cable systems affiliated with it.[482] Therefore, the Commission found that reasonably-tailored exclusivity was in the public interest and granted NECN's petition with certain limits as to the duration of exclusivity.[483]

178. The Commission's enforcement of the program access provisions appears to be meeting one of the goals of Section 19 of the 1992 Cable Act -- ensuring access by competing MVPDs to satellite cable programming from vertically-integrated programming services. There remain, however, several unresolved program access issues, which the Commission considers below.

179. Access to Programming of Non-Vertically-Integrated Vendors. Several commenters, such as WCA, People's Choice, American Telecasting ("ATEL") and Liberty Cable, advocate extension of the statutory prohibitions and requirements to *all* programming vendors -- *regardless* of vertical integration.[484] Those MVPD commenters compete with cable operators and claim to have been denied access to some programming from vendors that are not vertically integrated with cable system operators. Certain MVPDs allege that

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[479](...continued)
Prime Ticket Network. *Time Warner Cable, Petition for Public Interest Determination Under § 76.1002(c)(4) Relating to Exclusive Dist. of Prime Ticket Network, Order*, 9 FCC Rcd 4029 (1994).

[480] *New Eng. Cable News, Petition for Public Interest Determination Under 47 C.F.R. § 76.1002(c)(4) Relating to Exclusive Dist. of New Eng. Cable News, Memorandum Opinion and Order ("NECN Exclusivity Order")* ¶ 34-39, FCC 94-133 (No. CSR-4190-P June 1, 1994). The evidence indicated that NECN had about 900,000 subscribers in a potential market of about 3 million.

[481] *Id.* ¶¶ 41-43.

[482] *Id.* ¶¶ 29-32.

[483] Under the terms of the Commission's order, NECN is allowed to offer exclusive distribution rights to cable affiliates for a period of 18 months, but all such exclusive distribution rights must terminate seven years from the effective date of the Commission's order granting NECN's petition. *NECN Exclusivity Order* ¶¶ 49-51, 53.

[484] WCA Comments at 13-14; People's Choice Comments at 5; ATEL Reply Comments at 7; Liberty Cable Reply Comments at 11.

large MSOs exert pressure on non-vertically-integrated programming vendors to provide exclusivity to cable operators in exchange for carriage on their systems.[485]

180. Since these comments were filed, the Commission has amended its program carriage rules to provide standing to MVPDs to file complaints alleging that cable operators have coerced programmers, whether vertically-integrated or not, into granting exclusivity to their competitors.[486] The Commission concluded that coerced programmers might not file complaints because of the potential for damage to their future business relationships with the MSOs that coerced them.[487] The Commission wrote that the mere threat of potential complaints by competing distributors should provide an added check on anticompetitive behavior by MSOs with respect to their negotiation of carriage agreements.[488] The Commission will continue to monitor this situation to determine whether exclusivity agreements granted by services that are not vertically integrated have significant anticompetitive effects.

181. Access to Programming not Delivered by Satellite. Liberty Cable contends that the fact that the program access provisions of the 1992 Cable Act only apply to satellite-delivered programming restricts its ability to obtain attractive, desirable programming that is delivered by other means, and thus impedes its ability to compete with cable competitors who control or otherwise have access to such programming.[489] Liberty Cable further predicts that, unless corrected, this problem will grow in the future because vertically-integrated programming vendors will have the incentive to modify the distribution of their programming, using fiber optics or other non-satellite means, in order to evade application of the program access requirements.[490]

182. Time Warner disputes this concern, stating that satellite transmission remains the most effective method for distributing programming.[491] NCTA argues that the program access provisions were intended to apply to popular, nationally-distributed and satellite-delivered basic and premium services, which arguably are vital to the success of MVPD

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[485] *See* WCA Comments at 13-14; People's Choice Comments at 5.

[486] *Memorandum Opinion & Order* ¶ 40, FCC 94-203, App. A (MM Docket No. 92-265) (released Aug. 5, 1994).

[487] *Id.* ¶ 30.

[488] *Id.* ¶ 24.

[489] *See* Liberty Cable Comments at 13-14.

[490] For instance, Liberty Cable complains that it is unable to secure access to "New York One," a regional news programming service, under the program access rules because it is not "satellite cable programming." *See* Liberty Cable Comments at 13-14.

[491] *See* Time Warner Reply Comments at 23-24

competitors that use alternative technologies, and were not intended to affect unique, locally-originated programming. NCTA contends that forcing vertically-integrated programmers to provide such programming to competitors of cable system operators affiliated with them would create a strong disincentive to the development of costly and risky ventures like local news programming.[492] The Commission will monitor industry conduct involving programming services that are not delivered via satellite transmission.

183. Alleged Price Discrimination with Respect to HSD Programming Distributors. NRTC and CSS contend that price discrimination continues to be a significant problem for HSD distributors, which allegedly must often pay prices two to five times higher than those charged to comparable cable operators. The programming vendors that filed comments, however, respond that the 1992 Cable Act permits differential pricing with respect to HSD packager-distributors because there are additional costs and services associated with serving such distributors.[493] When it addressed this issue in a prior proceeding, the Commission agreed with the programmers' argument, writing that:

> service to HSD distributors may be more costly than service to others using different delivery systems such as cable operators, as additional costs are often incurred for advertising expenses, copyright fees, customer service, DBS Authorization Center charges and signal security. The record indicates that these cost differences are particularly evident when providing program services to HSD distributors who do not provide a complete distribution path to individual subscribers.[494]

Accordingly, the Commission recognized that pricing differentials with respect to HSD distributors may be justified. The Commission said, however, that it could only determine whether particular cost differentials were justified on a case-by-case basis.[495]

184. In this proceeding, CSS submitted a table showing that the prices charged to HSD distributors for many popular programming services remain significantly higher than listed prices charged to cable operators, with the differentials ranging from 114% to 490%

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[492] NCTA Reply Comments at 10. It is possible, however, that providing locally-originated programming to other MVPDs may prove beneficial to the local cable programmer by spreading the fixed costs of production over a larger subscriber base.

[493] *See, e.g.*, TBS Comments at 2; Superstar Satellite Reply Comments at 6-11; and Southern Satellite Systems ("Southern Satellite") Reply Comments at 3.

[494] *Program Access Order* ¶ 106, 8 FCC Rcd at 3406.

[495] *Id.* ¶ 111, 8 FCC Rcd at 3409-10.

higher for HSD distributors.[496] Other commenters argue that the data in that table are inaccurate, outdated and, in some instances, unverifiable.[497] In its reply comments, HBO stated that counsel for CSS acknowledged in a meeting with HBO's counsel that information in the table was erroneous.[498] The Commission declines to evaluate such data in this proceeding. Rather, such data can best be assessed in the context of individual program access complaints brought pursuant to the Commission's rules.

185. Other Alleged Discrimination Against HSD Packagers. Certain commenters allege that programming vendors discriminate against MVPDs that use specific technologies other than cable through the use of subscriber penetration level requirements, program offering requirements (service must be sold in every package offered by the HSD distributor to a customer), or tier placement requirements associated with lower rates.[499] The only programming vendor to address those contentions in this proceeding was Comedy Partners, which contends that it offers the same rates for high subscriber penetration and overall distribution regardless of the delivery technology used by the distributor.[500] The record is insufficient for the Commission to determine whether discrimination, is in fact, occurring with respect to penetration level requirements, tier placement requirements or service offering requirements. Those issues are best resolved in the context of specific adjudications.

186. Filing of Rate Information. Certain commenters request that the Commission require programming vendors to file rate information with the Commission.[501] In the *Program Access Report & Order*, however, the Commission concluded that a requirement mandating all programming vendors to file rate cards or other rate information would impose an excessive administrative burden on the Commission and would pose difficult questions of confidentiality.[502] The Commission also stated that:

> to the extent that parties have shown that standard "rate cards" generally do not exist, we believe that a filing requirement would impose an excessive constraint on vendors -- thus increasing the possibility of limiting the sale of programming -- and could diminish competitive pricing for multichannel programming through a

[496] *See* CSS Comments at Appendix A.

[497] *See, e.g.*, Southern Satellite Reply Comments at 2; Viacom Reply Comments at 3; and HBO Reply Comments at 9

[498] HBO Reply Comments at 9.

[499] *See* CSS Comments at 5; ATEL Reply Comments at 6.

[500] *See* Comedy Partners Reply Comments at 3-4.

[501] DirecTV Comments at 22; GTE Comments at 3; NRTC Comments at 27.

[502] *Program Access Report & Order* ¶ 113, 8 FCC Rcd at 3411.

> standardization of higher programming rates as vendors become more aware of the pricing practices by competitors.[503]

b. Commission Rules Promulgated to Assure Diversity in Programming.

187. The Commission's channel occupancy rules place a forty-percent limit on the number of channels that a vertically-integrated cable system may devote to video programmers in which the system operator has an attributable interest.[504] In promulgating these rules, the Commission decided to: (1) calculate the forty percent limit from all "activated" channels;[505] (2) measure "attributable interest" in a manner similar to the cable cross-ownership rules;[506] (3) count each channel devoted to vertically-integrated pay and multiplexed services in the forty-percent limitation;[507] (4) exempt local and regional programming from the limit;[508] (5) apply the channel occupancy limits only to the first seventy-five channels of a cable system;[509] and (6) apply the channel occupancy limits even to cable systems subject to "effective competition."[510]

188. While these channel occupancy rules are in effect, the rules are currently under reconsideration by the Commission. Petitioners in the reconsideration proceeding have

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[503] *Id.*

[504] *Second Ownership Report & Order* ¶ 68, 8 FCC Rcd at 8593. A higher limit was set for programming that is minority-controlled. *Id.* ¶ 71, 8 FCC Rcd at 8596.

In addition to channel occupancy regulations, Section 11(c) of the 1992 Cable Act directed the Commission "to consider the necessity and appropriateness of imposing limitations on the degree to which [MVPDs] may engage in creation of video programming." Communications Act § 613(f)(1)(C), 47 U.S.C. § 533(f)(1)(C). The Commission determined that the structural limits imposed by the subscriber limits and channel occupancy rules, as well as behavioral restrictions contained in Sections 12 and 19 of the 1992 Cable Act, already limit the ability of cable operators to impede entry of new programming services, and that additional restrictions on the creation and/or production of video programming were not warranted at that time. *Second Ownership Report & Order* ¶ 106, 8 FCC Rcd at 8608.

[505] *Second Ownership Report & Order* ¶ 54, 8 FCC Rcd at 8588.

[506] *Id.* ¶¶ 61-62, 8 FCC Rcd at 8591-92. These attribution rules, 47 C.F.R. § 76.501, differ from the attribution rules used in the program access context, 47 C.F.R. § 76.1000(b).

[507] *Id.* ¶ 77, 8 FCC Rcd at 8598.

[508] *Id.* ¶ 78, 8 FCC Rcd at 8599.

[509] *Id.* ¶ 84, 8 FCC Rcd at 8601-02.

[510] *Id.* ¶ 88, 8 FCC Rcd at 8603.

requested that the Commission, *inter alia*, lower the 40% channel occupancy limit and change the method by which the limit is calculated.[511] A petition from Bell Atlantic requests that the Commission exempt systems under "effective competition" from the channel occupancy limits.[512]

189. Currently, systems that exceeded the forty-percent limit as of December 4, 1992 are "grandfathered" and those operators are not required to delete attributable video programming services in order to comply with the limit. Instead, the Commission requires that once additional capacity becomes available on such a system (either through system upgrades or programming deletions), the cable operator must fill this additional capacity with video programming from unattributable programming vendors until it is in full compliance with the channel occupancy rules.[513] To enforce the channel occupancy rules, cable system operators are required to maintain records regarding the nature and extent of their attributable interests in and carriage of video programming services, and the Commission welcomes monitoring by local franchise authorities of compliance within their franchise areas.[514]

190. The Commission has not received any complaints alleging violations of its channel occupancy rules or petitions requesting that the restrictions be waived. That silence, ten months after the rules took effect, is a strong indication that there are no significant violations of the rules and that the rules are not unduly restricting the ability of vertically-integrated MSOs to deliver programming to their customers. However, the Commission does not have a sufficient record to determine whether cable systems exclude affiliated programming services because of the rules.[515] Nor is there a sufficient record to address whether the channel occupancy limits have influenced investment of cable MSOs in programming, or whether unaffiliated programming vendors have benefitted from the limits.

3. *Conclusions*

191. In sum, it appears that the state of vertical integration in the cable industry has not altered significantly since 1990. Cable operators continue to invest in existing and new programming services.

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[511] *Consumer Fed'n Petition for Recon.* (MM Docket No. 92-264).

[512] *Bell Atl. Petition for Recon.* (MM Docket No. 92-264).

[513] *Second Ownership Report & Order* ¶ 93, 8 FCC Rcd at 8604-05.

[514] *Id.* ¶¶ 98-99, 8 FCC Rcd at 8606.

[515] In this regard, the Commission notes that, in 1993, 87% of all cable systems had channel capacities of less than 53 channels, while there are presently 106 national programming services available for carriage. *See* Appendix C, Tables 2-4; Appendix G, Tables 3, 4.

192. The Commission's program access rules and its decisions applying those rules have given competing MVPDs access to programming produced by programmers that are affiliated with cable system operators. The Commission does not find it necessary to make any specific recommendations that Congress amend the program access provisions at this time. Nevertheless, the Commission will continue to monitor the marketplace, and will also rely on MVPDs competing in the marketplace to advise the Commission of further difficulties they encounter in obtaining programming, and the effect of those difficulties on their ability to compete.

193. The Commission has not received sufficient information in this proceeding to enable it to evaluate fully the impact of the vertical ownership rules, and will continue to monitor the impact of those structural limitations.

C. Nature of Technical Changes Affecting Cable Systems

194. As discussed in earlier sections of the *Report*, aspects of industry structure, such as horizontal concentration and vertical integration, might affect competition between cable operators and competing distributors. However, industry structure is not a static concept. Therefore, as historically has been the case in other industries, technological change, whether evolutionary or revolutionary, can directly affect the competitive viability of firms using existing technologies, and has the potential to alter dramatically both industry structure and the overall competitive environment.

195. Telecommunications technologies, including those used in the distribution of video programming, are evolving rapidly. For example, technologies used to transmit voice, video and data are crossing the boundaries that have traditionally separated information distributors. Moreover, the cable industry and competing information distributors are in the midst of deploying new and improved transmission systems, and are projecting the near-term introduction of new and innovative services, that are presently unavailable to consumers, or are only available on an experimental basis. Those changes have the potential to exert a major influence on industry structure, and will affect the sustainability of competition with incumbent cable systems from MVPDs that use technologies other than cable.

196. Developments in system architecture may affect industry structure and the extent of competition.[516] Different distribution media -- copper wire, coaxial cable, optical fiber, terrestrial microwave and satellites -- all differ in their information carrying capacity. Consequently, if technological breakthroughs allow one type of transmission system to increase capacity significantly, that technology may become more advantageous than other technologies. In such a case, the transmission systems using that technology may gain competitive advantages over systems that use other technologies.

[516] For purposes of this section, system architecture refers to the various media that are used to transmit information, including satellites, terrestrial microwave, optical fiber, coaxial cable and copper, and how those media are used in communications networks.

197. For example, as companies seek to deliver more information, whether it be voice, video or data, through different transmission media, various compression and modulation techniques are used to fit the information within the media, and various switching techniques are used to enhance their ability to deliver the information to end users.[517] Notwithstanding the benefits of increased network capacity, efficiency and functionality that are gained through various modulation, compression, multiplexing and switching techniques, many of these new technologies are designed in such way as to work most efficiently within a particular transmission medium, or with a particular transmission mode. Consequently, architectural design issues are affected by the various methods and technologies used for integrating and transmitting voice, video and data over the same network.

198. However, transmission capacity is not the sole consideration that influences the deployment and utilization of new technologies. Cost may critically influence which technologies win broad consumer acceptance, and which providers thrive in the new communications landscape.[518] The deployment of fiber optic technology is an important example. Fiber optic wiring is often touted for its advantages of high capacity and low maintenance, and it is being widely deployed by cable operators and telephone companies.[519] Cable operators and LECs have both expressed interest in bringing fiber closer to

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[517] *See, e.g., "Building for the Future Video Technology Special, Video Dialtone: Putting the Pieces Together,"* TELEPHONY, July 25, 1994, Special Supplement at 6; *"At Issue: Copper v. Coax,"* TELEPHONY, Mar. 14, 1994, at 18; Paula Bernier, *"Vendors Gear Up for Video Flurry,"* TELEPHONY, June 6, 1994, at 40.

[518] For example, David P. Reed concluded that his study of estimated capital cost functions tentatively demonstrated substantial economies of scope between telephone and distributed video services that are delivered through a hybrid fiber/coaxial cable architecture. DAVID P. REED, THE PROSPECTS FOR COMPETITION IN THE SUBSCRIBER LOOP: THE FIBER-TO-THE-NEIGHBORHOOD APPROACH 12 (FCC Office of Plans and Policy, September 1993). Others conclude that technological developments are increasing the likelihood of local competition. *See, e.g.*, TOWARDS COMPETITION, *supra* note 132, at 42.

[519] Cable operators have been using fiber optics in their system upgrades to replace coaxial trunk lines, as well as to replace the local distribution plant in what is commonly known as "fiber to the neighborhood" or "fiber to the node." The installation of fiber in cable systems has grown from close to zero in 1988, to over 24,000 miles by 1992. CABLE TV TECHNOLOGY, Mar. 19, 1993, at 1. The cable television industry's rate of fiber deployment doubled between 1991 and 1992, and in 1993, over 25% of wired cable subscribers were served by systems employing fiber optics. 1994 Conference on Emerging Technologies ("1994 Conference") 115 (1994) (Society of Cable Television Engineers). It has been estimated that telephone companies had installed over 100,000 miles of fiber by 1992. *Fiber Optics - A New Horizon*, FEDERAL COMMUNICATIONS COMMISSION FACT SHEET, Oct. 1993.

subscribers' homes.[520] Some published reports suggest that the cost of fiber has fallen to the point where it may be economically installed for all but the last mile of network rebuilds and new construction.[521] Others contend that while installation of fiber as part of a hybrid fiber-coaxial architecture is economical, deployment of fiber to the curb or to the home is still prohibitively expensive, and cost considerations associated with how far fiber is deployed into a network may have important competitive consequences.[522]

199. Finally, a number of other interrelated architecture issues exist, which may impact the competitive landscape, including interconnection, consumer interface, and standards.[523] The ability of the public to access, and interact with, the communications networks through modems or converter boxes -- the so-called on- and off-ramps of the national information superhighway -- is an important competitive issue because it visibly manifests the issues of interoperability, interconnectivity and compatibility.[524] The issue of standards, which could impact interoperability, implicates the issue of open versus proprietary architectures.[525] The company (and industry) that captures the lead in these debates may have

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[520] For instance, last year, TCI announced plans to spend $1.9 billion over four years to install 7,000 miles of fiber in at least nine regional hubs. Tele-Communications, Inc. (press release Apr. 12, 1993).

[521] Raymond Smith, COMM. DAILY, Sept. 22, 1989, at 11.

[522] For example, estimates of fiber costs range from $4,000 to $5,000 per fiber mile for HFC architectures and $20,000 per fiber mile for FTTC or FTTH architectures. *See, e.g.*, *"Building for the Future Video Technology Special,"* TELEPHONY, July 25, 1994, Special Supplement, at 13. Leland Johnson suggests that the cost of rebuilding an existing cable system with fiber to the neighborhood is in the range of $250 to $300 per subscriber, whereas upgrading a system with fiber to the curb in order to provide a combination of telephony and video service, increases the cost dramatically to approximately $1,242 per home passed, comparable to the cost of a LEC-provided integrated network of $1,150 per subscriber. TOWARD COMPETITION, *supra* note 132, at 32.

[523] Cable system interconnection is discussed in the Section IV.A of this *Report*.

[524] For example, some observers assert that a coaxial modem connection to personal computers will supplant the coaxial drop to the television as the link into the home. *The Analyst Forum: Communacopia*, GLOBAL RESEARCH (Goldman Sachs, May 19, 1994). Some economists predict that: (1) newly introduced technologies will be biased against compatibility; (2) incentives exist to make converters incompatible and costly unless bundling can occur; and (3) consumer demand for software variety may impact hardware technologies. *Symposium on Compatibility*, 40 J. INDUS. ECON. 1-123 (Richard J. Giblert ed. Mar. 1992).

[525] *See, e.g.*, Lloyd Whittall, III, Architecture-Based Competition and Interoperability in Advanced Cable Systems and the Coming Broadband Local Exchange Infrastructure, (1994) (unpublished graduate thesis, University of Colorado). There currently are about 20 groups (continued...)

a significant competitive advantage over other information providers. Such an advantage could potentially be extended into competitive advantages in other areas where interoperability and compatibility are desired.

200. The foregoing discussion suggests that it is too soon to draw any conclusions regarding the ongoing dynamics of technological change that permeate the telecommunications industry today. Nevertheless, significant issues that may have a dramatic effect on how competition develops in the delivered multichannel video programming industry are coming into focus. The Commission's ongoing review of such issues will be essential to the formulation of public policies for video distribution markets that will provide consumers with early access to the remarkable advantages that such technologies seem to promise.

[525](...continued)
working on, and competing to have their particular approach adopted as, the international digital industry standard.

V.
STATUS OF COMPETITION IN THE MARKET FOR THE DELIVERY OF VIDEO PROGRAMMING

A. Extent of Competition and Assessment of Market Performance

1. Overview

201. The Commission finds in this *Report* that cable television remains the dominant medium for providing consumers with multichannel video programming. Most local markets for the distribution of multichannel video programming are highly concentrated, and for most consumers, cable television is the only provider of multichannel video programming. There are presently only a few scattered areas of the country where the local cable operator faces direct competition from an overbuilder.[526] Moreover, providers using alternative technologies have not yet reached the subscribership levels necessary for the Commission to find the existence of vigorous rivalry in the market for multichannel video distribution. Relative subscriber levels for the cable industry and competing distribution technologies, to the extent available, are shown in Table 5.1 below.

TABLE 5.1
Estimated Subscribership of Various Video Programming Distribution Systems (in millions)

SYSTEM	*1990*	*1991*	*1992*	*1993*	*CURRENT*
CABLE (mil)	51.7	53.4	55.2	57.4	57.9
HSD	.7	.8	1.0	1.6	2.0
MMDS	.3	.2	.3	.4	.5
SMATV					1.0
OVERBUILD			1.3		n/a
PRIMESTAR					.1
DIRECTV/					n/a
VDT					none
LMDS					n/a

n/a = not available. Shares for alternative distribution technologies include areas not passed by cable.[527]

[526] *See supra* Section III.B.

[527] Sources for the figures in Table 5.1 are as follows: **CABLE** - *History of Cable & Pay TV Subscribers & Revenues*, CABLE TV INVESTOR, March 31, 1994, at 9. **HSD** --
(continued...)

202. The dominance of cable television in local markets may be enhanced by horizontal concentration of cable MSOs nationwide. This *Report* finds that horizontal concentration among the largest cable MSOs has increased only modestly since the time of the *1990 Cable Report*. The Commission notes, however, that there have been several proposed transactions in 1994, most notably, TCI-TeleCable, Cox-Times Mirror, Comcast-Maclean Hunter, and Time Warner-Newhouse, that will, if consumated, involve the largest MSOs acquiring control over a number of additional cable systems. In addition, MSOs appear to be creating regional "clusters" of cable systems and franchises. If those trends persist, the cable television industry will become increasingly concentrated nationally and regionally over the next few years.[528] In addition, MSOs continue to invest in video programming vendors. The Commission anticipates that such investment will continue, and that the Commission's program access and carriage rules remain necessary to prevent the potential abuses of such investment.[529]

203. In the longer term, increased rivalry in the market for delivered multichannel video programming should result in lower prices relative to present cable rates, and in a

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[527](...continued)
1990-91, 1992, and 1994 net authorizations supplied by letter received by telecopier on September 8, 1994 from Brigette Engel, of General Instrument, Inc. to Cable Services Bureau Staff, and General Instrument Press Release (Aug. 18, 1994); 1993 net authorizations from *GI Net Authorization Near 1,900,000*, SKYREPORT, July 1994 at 5. HSD subscribership estimate may also include HSD subscribers that subscribe to cable service; **MMDS** -- 1990 and 1994 from WCA Comments at 2, n.3; 1991 & 1993 from *Average Annual Subs*, WIRELESS CABLE INVESTOR, June 30, 1994, at 1; average annual subscribers for 1992 from telephone interview with Paul Kagan Associates, Inc. personnel explaining details of WIRELESS CABLE INVESTOR, June 30, 1994 at 1; **SMATV** -- from *Cable & Pay TV Census -- August*, MARKETING NEW MEDIA, Aug, 15, 1994; **OVERBUILD** -- 1992 from *P.K. Cable TV Overbuild Census*, CABLE TV FRANCHISING, Apr. 30, 1992, at 4; The Commission has been unable to update 1992 estimate, and will attempt to ascertain subscribership levels of overbuilt systems in future reports; **PRIMESTAR** -- Tom Kerver, *DBS: One Plus One Equals Three*, CABLEVISION, May 23, 1994, at 82; **DIRECTV/USSB** -- roll-out of DBS services in selected markets began on June 17, 1994, and accordingly, meaningful subscription figures are not yet available; **VDT** -- permanent VDT service is not presently available, although the Commission has recently granted application of Bell Atlantic to provide permanent service in Dover, New Jersey; **LMDS** -- the Commission does not possess sufficient information to estimate the number of households that subscribe to the services of LMDS programming providers, but the number of subscribers appears to be *de minimis*.

[528] *See supra* Section IV.A.

[529] *See supra* Section IV.B.