

Appendix Table A-1 Cable service in the U.S.¹³⁶

| Year | TV house- holds | Homes passed | Cable subs | Homes passed per TVHH | Cable subs per TVHH |
|------|--------------------|-----------------|------------|-----------------------------|------------------------|
| | (millions) | (millions) | (millions) | (percentage) | |
| 1975 | 68.5 | 21.8 | 9.8 | 31.8 | 14.3 |
| 1976 | 71.2 | 23.1 | 11.8 | 32.4 | 16.6 |
| 1977 | 72.9 | 24.2 | 12.6 | 33.2 | 17.3 |
| 1978 | 74.5 | 26.8 | 14.2 | 36.0 | 19.1 |
| 1979 | 76.3 | 29.3 | 15.8 | 38.4 | 20.7 |
| 1980 | 79.9 | 34.9 | 19.2 | 43.7 | 24.0 |
| 1981 | 81.3 | 41.8 | 23.0 | 51.4 | 28.3 |
| 1982 | 81.9 | 49.5 | 27.5 | 60.4 | 33.6 |
| 1983 | 83.3 | 55.9 | 31.4 | 67.1 | 37.7 |
| 1984 | 84.9 | 60.5 | 34.2 | 71.3 | 40.3 |
| 1985 | 86.5 | 64.7 | 36.7 | 74.8 | 42.4 |
| 1986 | 87.7 | 69.4 | 39.7 | 79.2 | 45.3 |
| 1987 | 89.2 | 73.1 | 42.6 | 81.9 | 47.8 |
| 1988 | 90.9 | 77.2 | 45.7 | 85.0 | 50.3 |
| 1989 | 91.6 | 82.8 | 49.3 | 90.4 | 53.8 |
| 1990 | 90.9 | 86.0 | 51.7 | 94.7 | 57.0 |
| 1991 | 92.0 | 88.4 | 53.4 | 96.1 | 58.1 |
| 1992 | 93.1 | 89.4 | 55.2 | 96.1 | 59.3 |
| 1993 | 93.9 | 90.6 | 57.2 | 96.5 | 60.9 |
| 1994 | 94.9 | 91.6 | 59.0 | 96.5 | 62.0 |

Many cable networks have emerged to supply programming for resale to cable subscribers. Over 100 networks are available to cable systems throughout the nation, including 79 basic cable networks, 17 pay networks and 8 pay-per-view networks. See Appendix Table A-2. A great deal of cable programming is available to the average cable subscriber as an alternative to broadcast television.

¹³⁶ Paul Kagan Associates, KAGAN MEDIA INDEX, Jan. 11, 1995, at 7, 14; Feb. 26, 1993, at 2.

Appendix Table A-2 Cable networks in the U.S.¹³⁷

| Year | National | | | | Total | Regional |
|-------|----------|-----|--------------|--------------|-------|----------|
| | Basic | Pay | Pay-per view | Combina-tion | | |
| 1976 | 2 | 2 | | | 4 | |
| 1977 | 3 | 2 | | | 5 | |
| 1978 | 6 | 2 | | | 8 | |
| 1979 | 14 | 5 | | | 19 | |
| 1980 | 19 | 8 | | 1 | 28 | |
| 1981 | 29 | 9 | | | 38 | |
| 1982 | 30 | 11 | 1 | | 42 | |
| 1983 | 31 | 11 | 1 | | 43 | |
| 1984 | 36 | 10 | 1 | | 47 | |
| 1985 | 40 | 9 | 4 | 2 | 55 | 18 |
| 1986 | 52 | 8 | 5 | 2 | 67 | 20 |
| 1987 | 59 | 9 | 6 | 1 | 75 | 24 |
| 1988 | 61 | 8 | 5 | 1 | 75 | 30 |
| 1989 | 60 | 5 | 4 | 3 | 72 | 37 |
| 1990 | 61 | 5 | 5 | 4 | 75 | 37 |
| 1991 | 61 | 7 | 4 | 4 | 76 | 39 |
| 1992 | 64 | 8 | 4 | 4 | 80 | 41 |
| 1993 | 73 | 9 | 7 | 5 | 94 | 42 |
| 1994* | 79 | 17 | 8 | 5 | 109 | 43 |

*1994 data are through September.

As an advertising-supported medium, broadcast television has strong incentives to present programming that will appeal to the largest possible audience. Basic cable programming, in contrast, is typically supported, at least in part, by subscriber payments. Through these payments, narrower groups of viewers with special interests can support programming that

¹³⁷ NCTA, *Cable Television Developments, Fall 1994*. Regional totals are from TELEVISION & CABLE FACTBOOK, SERVICES (various years).

caters to those interests, even if the programming does not appeal to mass audiences. Examples of the diverse programming available on basic cable include MTV, Black Entertainment Television, Courtroom Television Network and the Family Channel. Subscriber payments are even more important to the support of pay and pay-per-view channels. Pay cable networks include Home Box Office, Showtime and the Disney Channel. Pay-per-view channels also offer movies as well as live sports and entertainment programming. Such basic, pay and pay-per-view programming provides viewers with an alternative to the programming available on broadcast stations.

Cable systems compete with broadcast stations not only by offering distinctive programming but also by offering similar programming. A significant amount of cable programming, while not available on broadcast stations, is similar to broadcast television programming. The programming schedules of 94 basic, regional and premium cable networks were analyzed during a recent representative week.¹³⁸ Of the 12,305 hours of programming examined, 28 percent of the time was movies, 5 percent was sports, 3 percent was paid programming, and 8 percent was off-network. These are programming categories familiar to broadcast television viewers. The remaining 56 percent was programming that aired for the first time on a cable network or was originally released as syndicated programming.

The substitutability between broadcast television and cable television is further illustrated by instances in which identical programming is shown on broadcast and cable. HSN2 and ValueVision, for example, are home shopping channels that are available over the air in some areas but carried only on cable in other areas.¹³⁹ The same infomercials are shown on broadcast stations, by cable networks, and during time purchased from cable operators. Spanish language programming from Univision and

¹³⁸ This analysis is described in Economists Incorporated, *An Economic Analysis of the Prime Time Access Rule*, March 7, 1995, MM Docket No. 94-123, at Appendix B.

¹³⁹ Home Shopping Network, 1993 SEC Form 10-K; ValueVision International, 1993 SEC Form 10-K.

Telemundo is likewise carried on broadcast stations in some localities and on cable systems in other localities.

The blurred line between cable and broadcast television is encountered not only in somewhat specialized areas like those just discussed, but also in conventional entertainment programming. Television programming by the Fox network is carried on a large number of broadcast affiliates. In areas not covered by broadcast affiliates, cable operators carry this programming under the label Fox Net.¹⁴⁰ The recently launched WB Network reaches 80 percent of the national television audience. Superstation WGN, carried on cable systems, is used to achieve 18 percent of that reach.¹⁴¹ Also, WB plans to seek cable carriage in areas in which it is unable to obtain broadcast affiliates.¹⁴² Cable and broadcast television have also shared sports programming. Examples include the 1991 Pan Am Games, in which ABC bought the rights and sold off some rights to Turner, the 1994 Goodwill Games, in which Turner bought the rights and then bought the time on ABC, and the 1994 Winter Olympics, in which CBS sold some rights to TNT.¹⁴³

Given the widespread penetration of cable and the large amount of programming cable offers, cable programming has had an enormous impact on television viewing habits. In the average television household, including both cable subscribers and non-subscribers, about a third of television viewing is non-broadcast programming. In the November 1994 sweeps, basic and pay cable combined had an all-day/all-week share of 35. See Appendix Table A-3.

¹⁴⁰ Fox Net is listed as a basic cable network in *Database: Network Subscriber Counts*, CABLEVISION, Feb. 6, 1995, at 60.

¹⁴¹ Elizabeth Jensen, *Building a Network: 50 Stations, 4 Shows, 1 Frog*, WALL STREET JOURNAL, Jan. 3, 1995, at A-11-12.

¹⁴² Thomas Tyrer, *New networks gear up for launch: WB putting weight behind shows, promos*, ELECTRONIC MEDIA, Jan. 2, 1995, at 34.

¹⁴³ Paul Kagan Associates, CABLE TV PROGRAMMING, Feb. 25, 1993, at 2.

Appendix Table A-3 Audience shares of cable and non-cable households, Monday-Sunday, 7 a.m.-1 a.m.¹⁴⁴

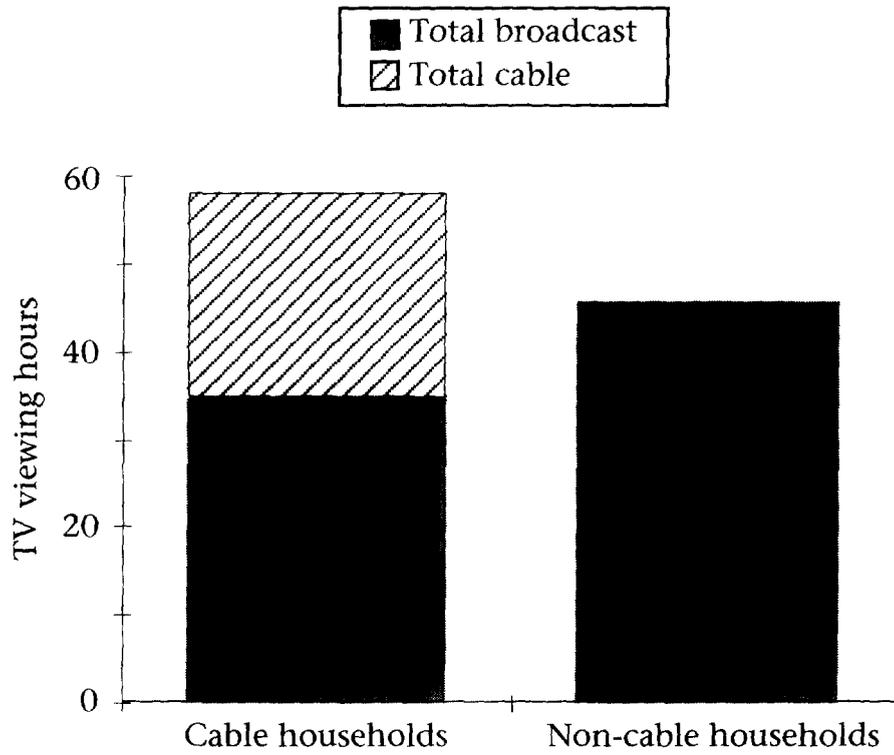
| Program source | All television households | Cable television households | Non-cable television households |
|----------------|---------------------------|-----------------------------|---------------------------------|
| ABC affiliates | 18 | 16 | 22 |
| CBS affiliates | 18 | 15 | 24 |
| NBC affiliates | 17 | 16 | 20 |
| Fox affiliates | 11 | 9 | 15 |
| Independents | 9 | 7 | 14 |
| PBS | 4 | 3 | 5 |
| Basic cable | 31 | 43 | 2 |
| Pay cable | 4 | 6 | - |

The substitution of cable programming for broadcast programming is suggested by comparing cable television households with non-cable television households. See Figure A-1. Households that do not subscribe to cable watch broadcast television 45.8 hours per week on average. Cable households, which have additional programming available to them, watch television an average of 58.2 hours per week. But cable viewing does not merely supplement broadcast viewing in these households, it is substituted for broadcast viewing. Cable households view broadcast television for an average of 34.8 hours per week, 11 fewer hours than non-cable households.

¹⁴⁴ NIELSEN TELEVISION INDEX, SPECIAL ANALYSIS (Oct. 31, 1994-Nov. 27, 1994). "Share" means television sets tuned to a particular station or network as a percentage of homes using television (HUTs) in a relevant geographical area. Shares can add to more than 100 percent because homes often have more than one switched-on set.

Figure A-1

Average weekly hours of television viewing by programming source, cable and non-cable households¹⁴⁵



145 Source: Appendix Table A-4.

Appendix Table A-4 **Total hours of television viewing
per week¹⁴⁶**

| | Cable households | Non-cable households |
|--------------------|------------------|----------------------|
| Total TV viewing | 58.2 | 45.8 |
| Total broadcast | 34.8 | 45.8 |
| Network affiliates | 24.5 | 30.5 |
| Independents | 8.8 | 12.9 |
| Public | 1.5 | 2.4 |
| Total cable | 23.4 | |
| Basic | 19.4 | |
| Pay | 4.0 | |

The Commission has long accepted that viewers consider broadcast television and cable television to be substitutes. The Commission's 1984 decision to deregulate most cable operators was based on a finding that if consumers in a cable franchise area could receive three or more signals over the air, the cable operator faced "effective competition."¹⁴⁷ In other words, the Commission believed that cable operators would be unable to charge unduly high rates for cable if a good substitute, in the form of broadcast television, was available to viewers.

When the Commission re-examined its effective competition standard in 1990, several statistical studies were submitted showing broadcast television and cable television to be substitutes. James Dertouzos and Steven Wildman used a stratified sample of 340 cable systems to study the impact of over-the-air television signals.¹⁴⁸ They found that when other

¹⁴⁶ Source: Cabletelevision Advertising Bureau, *1994 Cable TV Facts*, at 20.

¹⁴⁷ 47 C.F.R. § 76.33(a)(2). See *Report and Order* in MM Docket No. 84-1296, 50 Fed. Reg. 18637 (1985), *Memorandum Opinion and Order* in MM Docket No. 84-1296, 51 Fed. Reg. 21770 (1986) and *Second Report and Order* in MM Docket No. 84-1296, 3 FCC Rcd 2617 (1988).

¹⁴⁸ James N. Dertouzos and Steven S. Wildman, *Competitive Effects of Broadcast Signals on Cable*, February 22, 1990, filed with Comments of the National Cable Television Association, MM Docket No. 89-600, FCC, Mar. 1, 1990.

factors are held constant, cable systems located in the Grade B contour of five or more broadcast stations had significantly fewer subscribers, provided significantly more basic cable channels, charged basic service rates that were significantly lower per channel, and charged significantly lower prices for premium movie channels than cable systems located in areas receiving fewer signals. Each of these effects provided evidence that cable television and broadcast television compete for viewers.

Another study, conducted by Robert Crandall, also found that broadcast television competes with cable television for viewers.¹⁴⁹ His study of over 2,700 cable systems found that, at least within a certain range, cable systems in areas receiving more broadcast signals had a lower price for basic service than cable systems in areas receiving fewer signals, holding other factors constant. A third study, undertaken by the National Telecommunications and Information Administration, also concluded that the more broadcast signals available in the cable system's service area, the lower the price of basic service, holding other factors constant.¹⁵⁰ Summarizing these three studies, the Commission reported that they "establish a statistically significant inverse relationship between basic rates and the number of broadcast signals available...."¹⁵¹

Substitution between cable and broadcast television viewing was further confirmed by an analysis presented by the staff of the Federal Trade Commission's Bureau of Economics.¹⁵² Unlike the studies cited above, which examined how the availability of broadcast signals affected the behavior of cable systems, this study investigated how broadcast audiences are affected by the availability of cable. Specifically, the study estimated that

149 Robert W. Crandall, *Regulation, Competition and Cable Performance*, filed with Comments of Tele-Communications, Inc., MM Docket No. 90-4, FCC, Apr. 6, 1990.

150 Mark M. Bykowsky and Timothy Sloan, *Competitive Effects of Broadcast Signals on the Price of Basic Service*, attached to Comments of the National Telecommunications and Information Administration, MM Docket No. 90-4, FCC, Apr. 6, 1990.

151 *Report*, released July 31, 1990, MM Docket No. 89-600, Appendix E, ¶ 21.

152 *Comments of the Staff of the Bureau of Economics of the Federal Trade Commission*, MM Docket No. 91-221, FCC, Sept. 24, 1992.

each percentage point increase in the number of households passed by cable was associated with a decrease of one half percentage point in the viewer shares of local broadcast stations.¹⁵³

Statistical evidence of substitution between cable television and broadcast television, similarity of programming, and common sense all support the Commission's tentative conclusion that cable television competes with broadcast stations in attracting viewers.

2. DBS and other non-broadcast video distribution media

There are other important distributors of non-broadcast video programming in addition to cable television that compete for viewers with broadcast television. Nearly 4 million households subscribe to video programming via MMDS, SMATV or backyard satellite dishes. See Appendix Table A-5. If present trends hold, however, the total number of subscribers to each of these services could be exceeded by households subscribing to direct broadcast satellite (DBS) service.

¹⁵³ *Id.* at 17-18 and Appendix. This relationship was significant at the 99 percent level.

Appendix Table A-5 Households subscribing to video programming through backyard dishes, SMATV and MMDS ¹⁵⁴

| Year | Backyard dishes | SMATV | MMDS (wireless) |
|------|-----------------|-------|-----------------|
| | (in millions) | | |
| 1983 | | | 0.5 |
| 1984 | | 0.4 | 0.4 |
| 1985 | | 0.5 | 0.3 |
| 1986 | 0.1 | 0.6 | 0.3 |
| 1987 | 0.3 | 0.7 | 0.2 |
| 1988 | 0.4 | 0.7 | 0.2 |
| 1989 | 0.6 | 0.8 | 0.1 |
| 1990 | 0.7 | 0.8 | 0.2 |
| 1991 | 0.8 | 0.9 | 0.2 |
| 1992 | 0.9 | 0.9 | 0.3 |
| 1993 | 1.4 | 1.0 | 0.4 |
| 1994 | 2.1 | 1.1 | 0.6 |

DBS makes use of powerful satellites that transmit Ku-band video programming directly to households. It differs from earlier home satellite systems because the signal can be received on dish antennas that measure about 18 inches in diameter. These antennas are not only much smaller than older C-band dishes, they are much less expensive. Price ranges from \$649 to \$899, depending on the number of ports and features supported,¹⁵⁵ compared to \$2,000-2,500 for traditional C-band dishes.¹⁵⁶ RCA, which developed the technology, is manufacturing the antennas

¹⁵⁴ Paul Kagan Associates, KAGAN MEDIA INDEX, Jan. 11, 1995, at 7, 14.

¹⁵⁵ Paula Bernier, *DBS Providers Lure Subscribers with Menus, Presentation*, TELEPHONY, June 27, 1994, at 6.

¹⁵⁶ Danielle Bochove, *Satellite is Newest Weapon in TV Broadcast Wars*, ST. LOUIS BUSINESS JOURNAL, June 13, 1994, at 4B. Note that Primestar, another supplier of video programming to home dishes, leases rather than sells its dishes. C. Thomas Veilleux, *EchoStar DBS Alternative to Bow*, HFD-THE WEEKLY HOME FURNISHINGS NEWSPAPER, Nov. 14, 1994, at 84.

through its Thomson Consumer Electronics subsidiary. RCA has already licensed Sony to begin manufacturing after Thomson has sold 1 million units, which is expected by mid-summer 1995.¹⁵⁷

DirecTV, a unit of GM Hughes Electronics, and USSB, a division of Hubbard Broadcasting, both commenced DBS service in June 1994. DirecTV offers 40 cable networks, 40 to 50 pay-per-view movie channels, and 20 channels of à la carte programming, chiefly sports. Subscriptions range from \$5.95 to \$21.95 per month. USSB offers up to 30 channels, including basic cable channels plus multiple versions of HBO, Showtime, The Movie Channel and Cinemax, charging from \$7.95 to \$34.95 per month.¹⁵⁸

Sales of DBS dishes have exceeded expectations. Over 350,000 subscribers signed up by the end of 1994.¹⁵⁹ USSB forecasts sales of 2.5 million units by the end of 1996. DirecTV expects 3 million by the end of 1996 and 10 million by 2000.¹⁶⁰

Two other firms plan to offer DBS service in the near future. EchoStar expects to launch its first DBS satellite in Fall 1995, begin service as early as November 1995, and launch a second satellite in Summer 1996.¹⁶¹ PrimeStar, owned by a consortium of cable companies, now provides C-band services on 3-foot dishes, and hopes to reach 1 million subscribers in 1995.¹⁶² It plans to offer Ku-band DBS service by 1996.¹⁶³

DBS is a significant addition to video distribution not only because it is available everywhere, but because it will likely increase video program-

157 Jeffrey A. Trachtenberg, *Marketing & Media: Sony to Challenge Thomson's Unit's 18" Satellite Dish*, TELEVISION DIGEST, Nov. 7, 1994, at 4.

158 Bernier, *supra* note 155.

159 Kent Gibbons, *DBS: We're Walking the Walk*, MULTICHANNEL NEWS, Jan 16, 1995, at 3.

160 Michael Burgi, *RCA Dishes Up DBS Rollout*, MEDIAWEEK, Oct. 3, 1994, at 10.

161 Veilleux, *supra* note 156.

162 Gibbons, *supra* note 159.

163 *PrimeStar Signs DBS Deal*, TELEVISION DIGEST, Nov. 7, 1994, at 4.

ming options beyond those available from broadcast and cable television.¹⁶⁴ New video programming is also planned for video dial tone (VDT) services. Pacific Telesis Group, Bell Atlantic and NYNEX Corp. have formed a venture to develop their own branded programming, hiring away the president of CBS.¹⁶⁵ VDT services are now in the pilot stages with six of the seven RBOCs as well as GTE and a number of other independent telephone companies.

3. Video cassettes

Unlike VDT, which will likely have a significant impact in the future, home viewing of video cassettes is already an important means for distributing video programming material that competes for viewers with broadcast and cable television. Approximately 89 percent of television households have a VCR. This high penetration rate is particularly remarkable because VCRs had only a 2 percent penetration as recently as 1980.¹⁶⁶ VCR penetration is projected to exceed 91 percent of television households by early 1996.¹⁶⁷

While VCRs can be used to record broadcast or cable television programming for later viewing, they are also extensively used to view commercially prepared video cassettes. In a 1993 survey of households with both cable and a VCR, 90 percent used their VCR to watch rented video cassettes and 68 percent watched purchased video cassettes.¹⁶⁸ A 1992 survey of VCR households found that the median household had rented 11-20 video cassettes in the previous 12 months, and that only 12 percent of the households had not rented any in that period.¹⁶⁹ In another poll, 31

164 DBS service providers expect to obtain programming from producers not now selling to cable or television networks. *See DBS Systems Expected to Seek New Programming Sources*, SATELLITE WEEK, Sept. 26, 1994.

165 Jon Lafayette, *Stringer Heads to Media Co.*, ELECTRONIC MEDIA, Feb. 25, 1995, at 1.

166 Paul Kagan Associates, KAGAN MEDIA INDEX, Oct. 31, 1994, at 2.

167 Paul Kagan Associates, KAGAN MEDIA INDEX, Feb. 24, 1995, at 8.

168 Survey by Roper Organization, for TVSM, Inc., Mar. 6-29, 1993.

169 Survey by L.H. Research, for Phillip Morris Companies, Feb. 7-26, 1992.

percent of adults reported they had rented a pre-recorded videocassette in the past week.¹⁷⁰ U.S. households spent over \$5 million to purchase video cassettes in 1994. Another \$9.4 million was spent on video cassette rentals. See Appendix Table A-6. Expenditures on purchases and rentals together averaged \$170 per VCR household in 1994.

Appendix Table A-6 U.S. video cassette expenditures¹⁷¹
(consumer rentals and sales in millions of dollars)

| Year | Households with VCRs (millions) | Household video cassette expenditures | Household video cassette rental revenue | Total household video cassette revenue | Video cassette revenue per household |
|------|---------------------------------|---------------------------------------|---|--|--------------------------------------|
| 1983 | 9.4 | 218 | 1,065 | 1,283 | 136 |
| 1984 | 16.9 | 381 | 1,827 | 2,208 | 131 |
| 1985 | 27.5 | 656 | 2,910 | 3,566 | 130 |
| 1986 | 38.1 | 853 | 4,173 | 5,026 | 132 |
| 1987 | 47.6 | 1,108 | 5,245 | 6,353 | 133 |
| 1988 | 55.3 | 1,591 | 6,377 | 7,968 | 144 |
| 1989 | 61.3 | 2,258 | 7,052 | 9,310 | 152 |
| 1990 | 66.0 | 2,829 | 7,616 | 10,445 | 158 |
| 1991 | 71.2 | 3,229 | 7,770 | 10,999 | 154 |
| 1992 | 76.1 | 3,739 | 8,230 | 11,969 | 157 |
| 1993 | 80.5 | 4,386 | 8,840 | 13,226 | 164 |
| 1994 | 84.5 | 5,008 | 9,389 | 14,397 | 170 |

The distribution of movies provides an excellent example of the substitution possibilities among broadcast television, cable television and video cassettes.¹⁷² It has long been the practice to make motion pictures available to broadcast television after one or more “runs” in theaters. Starting

¹⁷⁰ Survey by Barna Research Group, Jan. 1993.

¹⁷¹ Paul Kagan Associates, KAGAN MEDIA INDEX, Dec. 29, 1994 at 14; Jan. 11, 1995, at 7.

¹⁷² For a discussion of movie release windows, see OWEN & WILDMAN, *supra* note 58, at 29ff. Recent changes in movie release windows are described in Jim Benson, *Glut of hours busts rates for blockbusters*, VARIETY, Apr. 17-23, 1995 at 25-6.

in the 1970s, some movies were released to cable television networks such as HBO before being released to broadcast television. In the 1980s, as VCRs became common, distributors began to release movies in video cassette form, often before release to cable networks. Movies are also available through syndication to individual broadcast stations. Some movies have their first release as cable movies or broadcast movies, and still others are released directly as video cassettes. The order in which a movie is released to various distribution media, and the timing and lengths of the release windows, are affected by competition among the distribution media. All these distribution outlets are available to movie distributors because audiences use them all to obtain video programming.

ANDREWS OFFICE PRODUCTS CAPITOL HEIGHTS, MD (K)

APPENDIX B

**GEOGRAPHIC MARKET DEFINITION IN THE
COMMISSION'S DELIVERED VIDEO SERVICES MARKET**

Appendix B Geographic market definition in the Commission's delivered video services market

Television stations, cable systems, MMDS, DBS and other satellite services, and video rental and sales outlets provide video programming to consumers across the country. For an individual consumer, however, the set of relevant suppliers are those providing service in the consumer's local area. The purpose of defining a geographic market is to identify those firms to which a consumer can reasonably turn.

In analyzing questions involving the ownership of television stations, the relevant groups of consumers are those that are served by each of the stations being analyzed. For purposes of this discussion, the area in which these viewers reside will be referred to as a station's service area.

As with the product market for viewers, the geographic market can be defined conceptually to include those firms to which viewers in the service area would turn if the station(s) were to decrease significantly the quality of programming for a significant period of time. For most stations, the service area is covered more or less completely by the service area of other television stations. Each of these stations provides an alternative to which viewers would likely turn, and each is therefore included in the geographic market.

A station's service area may be covered by several cable operators. If each cable service area is small relative to the station's service area, it is possible that a hypothetical decrease in programming quality would not cause the station to lose a significant number of viewers to any individual cable operator. However, if the cable operators taken together provide service in a large part of the station's service area, then cable television provides an alternative to which most viewers could turn in response to the hypothetical decrease in quality. (Actual and potential subscribers help to protect the interests of those television households not passed by cable.) These

operators should collectively be included in the relevant geographic market.

MMDS service available to a significant portion of the service area should also be included in the geographic market. DBS and other satellite services, though not provided by local firms, are included in the geographic market because they are reasonably available to viewers in the station's service area. VDT service, when it becomes available to a significant portion of viewers in the service area, will also be included in the geographic market. Suppliers of video cassettes for home use available to viewers in the service area, whether for rental or purchase, also belong in the market.

The next step in defining the geographic market is to determine whether firms located outside the service area should also be included. For instance, the market may also include video cassette suppliers far from the service area if the viewers in the service area would significantly increase purchases by mail. Of particular interest are television stations which have a service area that overlaps part of the service area of the station being analyzed. Analytically, stations located outside the service area should be included in the market if a hypothetical decrease in quality by all the firms located in the service area would cause so many viewers to turn to stations outside the service area that the decrease in quality would be unprofitable.¹⁷³

The percentage of viewers that would turn to stations outside the service area depends critically on the percentage of viewers that can receive signals from these stations with adequate quality whether over the air or via cable. This will vary from market to market, and for any given station it can differ depending on which station outside the service area is consid-

¹⁷³ Note that DBS providers and mail-order sellers of video cassettes cannot practically decrease the quality of their programming in the service area relative to other areas. This feature of the market makes it less likely that collective action by the programming providers actually located in the service area would be successful. If they chose to abandon uniform national pricing, it is conceivable that they could increase the price of their programming offerings in the local area and so participate in the hypothetical anticompetitive behavior.

ered. For this reason, the proper geographic market cannot be defined except on a case-by-case basis. It is clear, however, that the assumption that any two stations with overlapping Grade B contours are necessarily in the same market, implicit in the Commission's current rule, is unlikely to be correct.

The Commission has traditionally used a station's Grade B contour to approximate the area in which most consumers can receive the station's signal with an acceptable quality level. For instance, the Commission proposed to deem a station's broadcast signal to be "available" to a community if the entire community were located within the station's Grade B contour.¹⁷⁴ In the absence of better information, this discussion will assume for the sake of argument that a television station's viewers are contained within the station's Grade B contour. Under this assumption, the percentage of viewers that could turn to outside stations becomes a question of the percentage of viewers in the service area that are located within the Grade B contours of stations outside the viewing area.

Some guidance on the percentage of viewers in a station's service area that can receive another station located outside the service area can be obtained by examining actual overlaps in each of five market areas. The method used to choose these five areas was intended to identify a small number of DMAs that would be "illustrative." All DMAs were ranked according to number of television households. The list was then divided into quintiles, each of which included DMAs covering 20 percent of television households. For each quintile, a DMA was selected that was close to the median for the quintile based on number of television households, number of full-power television stations, cable penetration and VCR penetration. The selection of the five DMAs among those close to the median values in each quintile was also influenced by an attempt to achieve broad geographic diversity. The DMAs chosen were New York, Cleveland, Portland, Richmond and Amarillo.

¹⁷⁴ FCC, Further Notice of Proposed Rule Making, MM Docket No. 90-4, released Dec. 31, 1990, ¶24.

A specific Grade B overlap was investigated for each of these DMAs. For each DMA, the station with the largest Grade B contour located in the DMA's main city was paired with the station located outside the city having the largest Grade B overlap with the in-city station without any overlap between the two stations' Grade A contours. Such station pairs are of particular interest because their joint ownership would be prohibited under the current Commission rules, but would be permitted under the Grade A overlap standard which the Commission has proposed. Using 1990 Census information at the county level, the number of households in the entire service area of the first station was measured and compared with the number of households in the overlap area.¹⁷⁵ The results are shown in Appendix Table B-1.

¹⁷⁵ The choice of stations to include in the analysis and the household estimates were based on a visual inspection of Grade B contour maps published in TELEVISION & CABLE FACTBOOK, TV STATIONS, 1995 and Grade B contour maps on file with the Commission. To estimate the number of households within the Grade B contour for each city, each county in the area received a weight equal to 0 if it was entirely outside the Grade B contour and equal to 1 if it was entirely inside the contour. If the contour boundary passed through the county, a weight between 0 and 1 was assigned to correspond to the percentage of the county area within the contour. The county household totals were multiplied by their respective county weights and summed to obtain the estimated total households in the contour area. A similar procedure was used to estimate the number of households in the overlap area.

Appendix Table B-1**Households in Grade B area and maximum overlap area in five illustrative cities**

| City | Station | Households in Grade B contour | Overlap station | Households in overlap area | Overlap as percent of Grade B |
|-----------|---------|-------------------------------|-----------------|----------------------------|-------------------------------|
| New York | WNYW | 6,891,000 | WTNH | 1,532,000 | 22 |
| Cleveland | WEWS | 1,613,000 | WTOL | 70,000 | 4 |
| Portland | KOIN | 803,000 | KEZI | 100,000 | 12 |
| Richmond | WTVR | 501,000 | WTKR | 153,000 | 31 |
| Amarillo | KAMR | 125,000 | KAMC | 11,000 | 9 |

These illustrative cases suggest that relatively little of the audience that can view one station can also view another station outside the service area with the type of overlap described. The smallest overlap was found in Cleveland, where an estimated 4 percent of households lie in the Grade B overlap area. Even in Richmond, where the largest overlap was found, less than one third of the households in the Grade B contour of the Richmond station also lie within the Grade B contour of the non-Richmond station. It is important to note that the station pairs analyzed in Appendix Table B-1 were chosen to find the maximum overlap of the type described. In many or most cases, the actual Grade B overlap between stations in separate cities will be less than is shown here.

Even data such as those developed in Appendix Table B-1 do not completely answer the question of whether stations located outside a city should be included in the same relevant geographic market for viewing as those located inside. Ideally, one would want to know what portion of the audience located in the overlap area would turn to stations outside the city if all providers of video programming in the city were to reduce programming quality by a small but significant amount. As is often the case in defining relevant markets, this information is not likely to be available. Several general points can be made, however. First, the percentages stated above do not represent the portion of the audience that could be lost. Presumably, the audience in the overlap area watches both of the

available stations to some degree. That part of the audience that is already watching the outside station cannot be “lost” in response to a decrease in quality. For this reason, the percentages in Appendix Table B-1 overstate the maximum audience loss that a station could experience. Second, while some of the audience in the overlap area would presumably turn to the outside station, it is unlikely that all the audience would be lost. In other words, the potential loss is likely to be considerably larger than the actual loss that would be expected. These points reinforce the suggestion that stations with the type of overlap described are likely to be in separate viewing markets.

APPENDIX C

ESTIMATING LOCAL VIEWING SHARES

Appendix C Estimating viewer shares in five illustrative DMAs

All-day ratings during November 1994 were obtained from Nielsen for five illustrative DMAs: New York, Cleveland, Portland, Richmond and Amarillo. The analysis included all full-power stations in each DMA achieving a rating of 0.1 (after rounding). City of origin and affiliation were identified in *Nielsen Station Index Directory 1994-1995*. All cable viewing in each DMA was aggregated together and treated as a single entity in each DMA. Cable viewing is understated in Richmond and Amarillo, since cable networks with a rating of below 0.1 were not reported and no summary rating for cable was provided.

A separate tabulation compiled for each DMA included only those commercial stations included in the first list that are located within 35 miles of the principal city in each DMA, plus cable. These stations were assigned the rating that they achieved in the entire DMA. Cable was assigned a rating equal to the rating of the lowest-rated station within the 35-mile radius.