Table 3

CABLE SYSTEM OPERATORS WITH IMPORTANT
VERTICAL CONNECTIONS TO CABLE PROGRAMMING NETWORKS

| MSO | MSO Basic Subscribers (000) | Percentage of Industry Subscribers |
|---|---|---|
| TCI[1] | 11,326.7 | 23.3% |
| ATC[2] | 5,477.5 | 11.3 |
| Viacom | 1,134.7 | 2.3 |
| Cablevision Systems | 1,114.0 | 2.3 |
| Total (four MSOs) | 19,052.9 | 39.2 |
| Total U.S. | 48,636.5 | 100.0% |

Source: TCI information from 10-K filings; all other data from 1989 Cable TV Investor, Estimates of Paul Kagan Associates, Inc., Carmel, California. Table: "Top 100 Cable System Operators: November 30, 1988."

[1]Includes Heritage, United Artists, WestMarc, CSI, Bresnan, Cooke, Storer, Taft, TKR Cable, Daniels, Kansas City Cable, Cencom, Sioux Falls-Mitchell, Upper Valley (Idaho Falls), U.S. Cable, F D Cable Partners (Ohio), Puerto Rico, United Cable, Lenfest, Columbia Associates, Santa Cruz (Group W), Mile Hi, Waltham, and some other additional small systems.

[2]Includes Warner cable systems to reflect recent pending merger with Time, Inc.

owns six small systems which in total account for only 57,300 subscribers, or about one-tenth of one percent of all cable subscribers, it is obvious that Hearst could not foreclose entry of new cable programming networks by denying the entrant access to their systems.

It is also clear, moreover, that each of the larger cable operators included in Table 3, TCI, Viacom, Cablevision Systems and ATC (after the newly formed Time-Warner merger is complete), control too small amount of the crucial input (access to cable systems) necessary for a potential entrant into cable programming. Even the largest MSO, TCI, "controls" systems with only about 23 percent of the nation's basic subscribers.[31] Access to more than 75 percent of the nation's cable subscribers (the more than 37 million subscribers in non-TCI systems) is more than sufficient for an entrant to make a go of it. For example, CNBC, the new consumer and business news channel recently launched by NBC, claimed they only required a minimum of 9 million subscribers to launch the service.[32] These figures indicate that no vertically integrated MSO could, by itself, prevent entry of a new programming network in which it did not have an ownership interest. As we shall see, it would not be profitable for vertically

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[31]This is the broadest definition of TCI share, including any cable system in which TCI has any ownership interest whatsoever, including those MSOs and systems in which they own as little as 20 percent, such as Cencom, and where they have no operating control. It also includes all of Storer, which they have recently purchased jointly with Comcast.

[32]Cable TV Programming, December 19, 1988, p. 1. CNBC obtained 13 million subscribers by launch date, of which Cablevision Systems, their equity partner, provided only about 1 million (New York Times, April 10, 1988, Business Section, p. 1). It is clear that Cablevision Systems, the ninth largest MSO in the country (Paul Kagan Associates, Cable TV Investor, April 27, 1989, pp. 8-9) is an equity partner in the enterprise primarily because of their cable programming and distribution expertise and not because of their subscriber base.

integrated MSOs attempting to obtain the best cable programming in order to maximize subscribership to systematically refuse carriage to new networks in which they do not have ownership interests and, as the empirical analysis described below demonstrates, they do not do so. However, if a vertically integrated MSO did deny access to new networks, it would not foreclose entry. Even the largest MSO, TCI, is not a crucial factor for success.[33]

2. Absence of Denial of Carriage

The analysis above implies that no individual vertically integrated MSO has the power to foreclose entry of competing cable programming networks. Only by arbitrarily assuming that vertically integrated MSOs conspire as a group to foreclose new program supply can the foreclosure argument make any potential sense. However, to assume the existence of such anticompetitive collusion is unwarranted without some evidence to support it. As the following analysis demonstrates, neither TCI nor any other vertically integrated MSO systematically refuses to carry programming in which they do not possess an ownership interest. Therefore, condition (3) stated above for the existence of anticompetitive

[33]It is sometimes argued that cable companies inherently possess market power in purchasing programming because they have a "natural monopoly" in their franchise area and, therefore, are the sole program buyers for their subscribers. However, cable systems are certainly not natural monopolists in the same sense as the local electric power utility since they face significant competition from free over-the-air broadcast competition. In fact, even among households that subscribe to cable, more than two-thirds of viewership time is spent viewing noncable programming (A. C. Nielsen, published in Cabletelevision Advertising Bureau, Cable TV Facts). As discussed above, it is absolutely crucial that cable programming be of the highest quality if the cable system is to attract and retain consumers in the face of a zero price competing product (over-the-air broadcast television), in addition to other entertainment providers (e.g., VCRs and theaters). In terms of the negotiated price for programming, cable network suppliers would, of course, prefer a more fragmented cable industry, but cable systems certainly cannot be considered "gatekeepers."

foreclosure, that a firm denies a crucial input (access to cable systems) to potential new competitors (entrants into cable programming), is not present in this industry. Vertical integration has not created a "barrier to entry" into the cable programming industry.

To test these propositions an examination of cable programming carriage by cable system operators was performed on a random sample of 400 cable systems in the United States. The systems were randomly chosen by size classification. Table 4 presents the distribution of all cable systems by size classification in the United States and the number of cable systems within each size classification chosen for the 400 system random sample.[34] The 400 cable systems in our random sample are geographically dispersed[35] and directly serve

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[34]For example, because cable systems of 50,000 or more subscribers account for 32.3 percent of U.S. cable subscribers, 130 observations of our random sample of 400 system observations (or 32.5 percent) are chosen from systems of 50,000 or more subscribers. It is necessary to take such a stratified weighted average random sample because a simple random sample of cable systems would have a disproportionate representation of small systems. Although the population of subscribers in such a simple random sample would be concentrated (as in the underlying population) in the few large systems chosen, since there are a very large number of very small cable systems the sample would misleadingly consist primarily of small systems. For example, systems of less than 1,000 subscribers would account for more than half of our system observations. Therefore, such a random sample of systems would not provide an accurate picture of what the cable system serving the typical consumer looked like. To obtain a representative picture of the conditions facing a typical cable subscriber in the United States it is necessary that the random sample of systems be weighted by the number of subscribers in each system, as we have done. For example, if only the very largest systems of greater than 50,000 subscribers (accounting for 2 percent of all systems but serving 32 percent of all subscribers) carried a particular service, these systems should account for 32 percent, not 2 percent, of our system sample. In this way, when we calculate the percentage of systems in our sample carrying the service we would also measure the percentage of consumers in the U.S. receiving the service.

[35]The cable systems are located in 49 states and the District of Columbia; there is no cable system in the sample from Vermont.

Table 4

SIZE DISTRIBUTION OF CABLE SYSTEMS AND RANDOM SAMPLE

| Number of Subscribers in System | Number of Systems in the U.S. | Percent of U.S. Cable Subscribers | Number of System Observations in Random Sample |
|---|---|---|---|
| 50,000 or more | 149 | 32.3 | 130 |
| 20,000 - 49,999 | 358 | 26.4 | 105 |
| 10,000 - 19,999 | 486 | 16.0 | 64 |
| 5,000 - 9,999 | 610 | 10.2 | 41 |
| 3,500 - 4,999 | 400 | 4.0 | 16 |
| 1,000 - 3,499 | 1,617 | 7.5 | 31 |
| 500 - 999 | 1,169 | 2.0 | 8 |
| 250 - 499 | 1,183 | 1.0 | 3 |
| 249 or fewer | 1,759 | 0.6 | 2 |
| Size not available | 682 | | |
| Total | 8,413 | 100.0 | 400 |

Source: Underlying size distribution from Warren Publishing, Inc., 1988 Television and Cable Factbook, Cable & Service Volume, p. C-359. Data as of April 1, 1988; random sample from A. C. Nielsen, Cable On-Line Data Exchange (CODE), Headend Information and Cable Carriage Reports, March 17 - April 14, 1989.

16.1 million subscribers, or about 33 percent of the total cable subscribers in the United States.[36]

This 400 cable systems random sample was used to examine the carriage of the most popular 28 networks listed in Table 2 on the cable systems owned by the vertically integrated MSOs compared to the carriage on the cable systems that are unaffiliated with cable programming networks.[37] The analysis of network carriage indicates that vertically integrated MSOs are somewhat more likely to carry networks in which they have an ownership interest. However, this effect is generally small and, therefore, there is no evidence that vertically integrated MSOs are less likely to carry networks in which they do not have an ownership interest.

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[36]In addition, the cable systems in the sample had an average channel capacity of 44.1 channels and on average carried 16.0 of the top 20 basic networks and 4.8 of the top 8 premium networks that we later analyze. The sample was taken from data supplied by A. C. Nielsen, Cable On-Line Data Exchange (CODE), the most current and consistent source of information on the industry.

[37]Observations for Nickelodeon and Nick at Nite are only available for 171 of the 400 system observations in our sample because of a change in Nielsen's reporting methodology over the time period during which the data were collected. In particular, these 171 observations are taken from Nielsen Media Research dated March 17, 1989. The remaining 229 systems in our sample are from the same source dated after March 31, 1989. Between March 17 and March 31, Viacom advised Nielsen to report the Nickelodeon and Nick at Nite carriage figures together. Cable systems that carried either Nickelodeon or Nick at Nite or carried both networks were all reported in the same manner. Because there was no way to distinguish between separate carriage of the networks, these 229 observations were not included in the analysis of Nickelodeon and Nick at Nite.

a) Vertically integrated MSOs are more likely to carry networks in which they have an ownership interest.

Table 5 shows carriage rates for the 20 basic and 8 premium networks with the largest number of subscribers.[38] For each network the table compares the carriage rates by cable systems owned by MSOs that have an ownership in the particular network with carriage rates by cable systems with no ownership interest in the network.[39] For example, the second row of Table 5[40] shows that Black Entertainment Television is carried by 53.6 percent of the TCI and ATC cable systems in our sample. By comparison, it is carried by only 41.8 percent of the systems with no ownership interests in Black Entertainment Television. The difference between these carriage rates of 11.8 percentage points provides a measure of the degree to which TCI and ATC favor programming from the Black Entertainment Television network.

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[38]The following network abbreviations are used in Tables 5 and 7: basic networks -- AEN, Arts & Entertainment; BET, Black Entertainment; CNN, Cable News Network; CSPN, C-SPAN; CVN, Cable Value Network; DSCV, Discovery; FAM, CBN Family Network; FNN, Financial News Network; HLN, CNN/Headline; LIF, Lifetime; MTV, Music Television; NAN, Nick at Nite; NICK, Nickelodeon; TNN, Nashville Network; TWC, Weather Channel; VH-1, Video Hits-1; USAN, USA Network; premium networks -- AMC, American Movie Classics; BRVO, Bravo; CMAX, Cinemax; DSNY, Disney Channel; GALA, Galavision; HBO, Home Box Office; SHOW; Showtime; TMC, The Movie Channel.

[39]For TCI, only cable systems in which TCI has an ownership interest greater than 50 percent and are carried on their books on a consolidated basis (including Heritage, United Artists, Westmarc, CSI, Bresnan, United Cable and Cooke) are defined as being owned by TCI. The cable systems in which TCI has ownership interests of less than 50 percent are not included as cable systems in which TCI has an ownership interest and also not included in the benchmark group of cable systems with no ownership interests in any network.

[40]The first row has no entries because there are no Hearst systems in our random sample. (Hearst owns only six cable systems in the United States.)

Table 5

## CABLE SYSTEM CARRIAGE OF OWNED NETWORKS

| Network | MSO with Ownership Interest in Network | Carriage Percentage by Systems with Network Ownership Interest | Carriage Percentage by Systems without Network Ownership Interest | Difference in Carriage Percentage |
|---|---|---|---|---|
| AEN | Hearst | -- | -- | -- |
| BET | TCI, ATC | 53.6% | 41.8% | 11.8% |
| CNN | (1) | 99.5 | 99.4 | 0.1 |
| CVN | (2) | 78.4 | 25.0 | 53.4 |
| DSCV | (3) | 88.1 | 85.1 | 3.0 |
| HLN | (1) | 80.9 | 73.3 | 7.6 |
| LIF | Viacom, Hearst | 90.0 | 90.0 | 0.0 |
| MTV | Viacom | 90.0 | 96.4 | - 6.4 |
| NAN | Viacom | 100.0 | 91.5 | 8.5 |
| NICK | Viacom | 100.0 | 100.0 | 0.0 |
| VH1 | Viacom | 80.0 | 70.5 | 9.5 |
| WTBS | (1) | 93.6 | 92.2 | 1.4 |
| Average of Basic Networks | | 86.7% | 78.7% | 8.1% |
| AMC* | Cablevision Systems, TCI, United Cable | 62.7 | 29.2 | 33.6 |
| BRVO* | Cablevision Systems | 100.0 | 17.2 | 82.8 |
| CMAX | ATC | 96.2 | 79.7 | 16.5 |
| HBO | ATC | 100.0 | 99.7 | 0.3 |
| SHOW | Viacom | 90.0 | 83.8 | 6.2 |
| TMC | Viacom | 90.0 | 58.7 | 31.3 |
| Average of Premium Networks | | 89.8% | 61.4% | 28.4% |
| Average of All Networks | | 87.8% | 72.6% | 15.3% |

(1) TCI, ATC, United Artists, United Cable, Heritage, TCI-Taft, Warner Cable, Cablevision Systems, Continental, Jones Intercable, Lenfest, Sammons, Storer, Times Mirror, TKR Cable, Viacom, Telecable, Centel, Scripps Howard (Telescripps).
(2) TCI, ATC, Warner Cable, Cablevision Systems, Colony, Continental, Newhouse, Rogers Communications, Sammons, Times Mirror, Viacom, Daniels & Associates, Cooke Cablevision, American Cablevision, Adam Corporation, United Artists, Heritage.
(3) TCI, Cox, Newhouse, United Cable.

*Hybrid services (offered both as basic and premium).

Table 5 indicates that almost for every network the carriage percentages of vertically integrated networks are higher in systems with ownership interests than in systems without ownership interests, with the average differential carriage percentage equal to 15.3 percent.[41] This is not a particularly surprising result.[42] An MSO owner of a network, particularly of a premium movie service, may find carriage of the network on its system less expensive than would a nonowner because the MSO owner faces a lower marginal cost of carrying the network. However, it is important to recognize that, since the vertically integrated MSOs have ownership interests in relatively few networks compared to the channel capacity and programming requirements of the average system, this effect is very small in terms of its impact on total system carriage.

b) Vertically integrated MSOs do not systematically discriminate in carriage against networks in which they do not have an ownership interest.

Table 6 presents the degree of vertical integration of each MSO in our sample in terms of the number of basic and premium networks among the top 28 networks in which the MSO has an ownership interest. This list of MSOs in our sample ranked by their extent of vertical integration indicates that the four largest, most vertically integrated MSOs are TCI, ATC, Viacom, and Cablevision.

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[41]This average difference has a t-statistic of 2.80 and, therefore, is statistically different from zero at the 98 percent confidence interval.

[42]The result is consistent with the results found in other studies. See National Telecommunications and Information Administration, Video Program Distribution and Cable Television: Current Policy Issues and Recommendations, U.S. Department of Commerce, June 1988, and Michael Salinger, "A Test of Successive Monopoly and Foreclosure Effects: Vertical Integration between Cable Systems and Pay Services," Graduate School of Business, Columbia University, September 1988.

Table 6

## THE DEGREE OF VERTICAL INTEGRATION OF CABLE MSOs

| MSO | Number of Top 28 Programming Networks in which MSO has an Ownership Interest | | |
|---|---|---|---|
| | Basic | Premium | All |
| Viacom | 9 | 2 | 11 |
| TCI | 6 | 1 | 7 |
| ATC | 5 | 2 | 7 |
| Cablevision Systems | 4 | 2 | 6 |
| Continental | 4 | 0 | 4 |
| Sammons | 4 | 0 | 4 |
| Times Mirror | 4 | 0 | 4 |
| Warner Cable | 4 | 0 | 4 |
| Centel Cable | 3 | 0 | 3 |
| Jones Intercable | 3 | 0 | 3 |
| Lenfest | 3 | 0 | 3 |
| Scripps Howard (Telescripps) | 3 | 0 | 3 |
| Storer Communications | 3 | 0 | 3 |
| Telecable Corporation | 3 | 0 | 3 |
| TKR Cable | 3 | 0 | 3 |
| Hearst | 2 | 0 | 2 |
| Newhouse | 2 | 0 | 2 |
| Adam Corporation | 1 | 0 | 1 |
| Colony | 1 | 0 | 1 |
| Cox Cable | 1 | 0 | 1 |
| Daniels & Associates | 1 | 0 | 1 |
| Rogers Communications | 1 | 0 | 1 |

As Table 6 indicates these four vertically integrated MSOs have ownership interests on average in 7.8 networks among the top 28. Therefore, if these vertically integrated MSOs are 15 percent more likely to carry on their cable systems the networks in which they have ownership interests (Table 5), it implies on average only 1.2 extra networks carried (.15 x 7.8 networks = 1.2 networks). Given the relatively large channel capacity and programming requirements of the average cable system, this additional 1.2 network carriage by vertically integrated MSOs of the networks in which they have ownership interests is extremely small. In particular, the additional carriage of 1.2 networks amounts to the utilization of less than 3 percent of a vertically integrated MSO's average 43 channel system capacity.

It would, therefore, not be surprising to find that although vertically integrated MSOs are carrying to a somewhat greater extent the programming in which they have ownership interests, they were not systematically discriminating against other programming in which they do not have ownership interests. Although many cable systems are capacity constrained and are planning or actively engaged in the construction of additional channel capacity, the potential "crowding out" effect from any favoring of the networks in which an MSO has an ownership interest is only about one channel. This extremely small effect implies that even if cable systems on average were utilizing 95 percent of their capacity, there would still be more than enough potential open channel capacity available for there not to be any effect whatsoever in terms of vertically integrated MSOs reducing the carriage of networks in which they do not have ownership interests.

Continuing to concentrate our analysis on the four largest, most vertically integrated MSOs, TCI, ATC, Viacom and Cablevision systems, Table 7 tests whether vertically integrated MSOs discriminate against networks in which they do not have ownership interests.[43] Table 7 presents the carriage percentage by the particular vertically integrated MSOs among this group of four that have no ownership interests in each of the largest 20 basic and 8 premium networks. For example, the first row of Table 7 shows that the carriage percentage of the Arts & Entertainment network by TCI, ATC, Viacom and Cablevision Systems (none of the four largest, most vertically integrated MSOs have an ownership interest in the network -- Hearst is the MSO with an interest) is 87.9 percent in our sample. This carriage percentage is then compared in the next column to the carriage percentage of the 153 cable systems in our sample that have no ownership interests in any network. This "benchmark" group of systems can be thought of as measuring what a completely nonvertically integrated system would likely carry on average. Only 81.7 percent of the systems in the nonvertically integrated benchmark group carry the Arts & Entertainment network. The final column measures the difference in carriage for the largest vertically integrated MSOs with no ownership interests in a particular network and the carriage percentage

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[43]This anticompetitive hypothesis is somewhat different from the standard anticompetitive foreclosure scenario, which generally refers not to some discrimination against input suppliers in which the firm does not have ownership interests, but to complete elimination of outside purchases of the input. A manufacturer is assumed to foreclose a supplier of a particular input by shifting all purchases to an internal (vertically integrated) supplier. However, because of the very large number of channels that must be filled by a cable operator and the importance of superior programming in competing with free broadcast television, the standard form of anticompetitive foreclosure makes absolutely no economic sense. It would be extremely costly for a cable operator to adopt a policy of not buying programming from networks in which it did not have ownership interests.

Table 7

## CARRIAGE BY VERTICALLY INTEGRATED MSOs OF NETWORKS IN WHICH THEY HAVE NO OWNERSHIP INTERESTS

| Network | Vertically Integrated MSOs with No Ownership Interests in the Particular Network | Carriage Percentage by Vertically Integrated MSOs with No Ownership Interests in the Particular Network | Carriage Percentage by Systems with No Ownership Interests in Any Networks (153 Systems) | Difference in Carriage Percentage |
|---|---|---|---|---|
| AEN | TCI, ATC, Viacom, CVS | 87.9% | 81.7% | 6.2% |
| BET | Viacom, CVS | 50.0 | 31.4 | 18.6 |
| CSPN* | TCI, ATC, Viacom, CVS | 94.8 | 71.2 | 23.6 |
| DSCV | ATC, Viacom, CVS | 85.0 | 85.0 | 0.0 |
| ESPN | TCI, ATC, Viacom, CVS | 100.0 | 100.0 | 0.0 |
| FAM | TCI, ATC, Viacom, CVS | 91.4 | 89.5 | 1.8 |
| FNN | TCI, ATC, Viacom, CVS | 74.1 | 63.4 | 10.7 |
| LIF | TCI, ATC, CVS | 96.2 | 79.1 | 17.1 |
| MTV | TCI, ATC, CVS | 98.1 | 93.5 | 4.6 |
| NAN | TCI, ATC, CVS | 87.0 | 94.4 | - 7.4 |
| NICK | TCI, ATC, CVS | 100.0 | 100.0 | 0.0 |
| TNN | TCI, ATC, Viacom, CVS | 89.7 | 93.5 | - 3.8 |
| TWC | TCI, ATC, Viacom, CVS | 82.8 | 72.5 | 10.2 |
| USAN | TCI, ATC, Viacom, CVS | 99.1 | 96.7 | 2.4 |
| VH1 | TCI, ATC, CVS | 62.3 | 69.3 | - 7.0 |
| WGN | TCI, ATC, Viacom, CVS | 54.3 | 54.2 | 0.1 |
| Average of Basic Networks | | 84.5% | 79.7% | 4.8% |
| AMC** | ATC, Viacom | 47.2 | 21.6 | 25.7 |
| BRVO** | TCI, ATC, Viacom | 17.9 | 13.1 | 4.8 |
| CMAX | TCI, Viacom, CVS | 77.8 | 76.5 | 1.3 |
| DSNY** | TCI, ATC, Viacom, CVS | 97.4 | 92.8 | 4.6 |
| GALA** | TCI, ATC, Viacom, CVS | 9.5 | 3.3 | 6.2 |
| HBO | TCI, Viacom, CVS | 100.0 | 99.3 | 0.7 |
| SHOW | TCI, ATC, CVS | 84.0 | 75.8 | 8.1 |
| TMC | TCI, ATC, CVS | 50.0 | 56.2 | - 6.2 |
| Average of Premium Networks | | 60.5% | 54.8% | 5.6% |
| Average of All Networks | | 76.5% | 71.4% | 5.1% |

*Cable affiliates provide 95 percent of the funding for C-SPAN, but have no ownership or program control interests.

**Hybrid services (offered both as basic and premium).

for systems with no ownership interests in any network. For the Arts & Entertainment network, the 6.2 percent differential reflects that Arts & Entertainment has a higher carriage rate on systems of vertically integrated MSOs that have no ownership interest in Arts & Entertainment than on nonvertically integrated systems.

Table 7 indicates that the differences between the carriage percentage by systems of the vertically integrated MSOs that have no ownership interests in the particular network and the carriage percentage by the unintegrated benchmark systems vary considerably across networks. However, most of the differences, for both basic and premium networks, are positive, with an average differential carriage percentage of 5.1 percent.[44] That is, a vertically integrated MSO is more likely to carry networks in which it has no ownership interests than an unintegrated cable operator.[45]

The fact that the vertically integrated cable systems do not systematically discriminate against programming that they do not have an ownership interest in is not surprising. MSOs could be expected to carry cable programming networks that they do not have ownership interests in as long as the gain in subscribership from carrying the network covered the cost of obtaining the

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[44]This average difference has a t-statistic of 2.86 and, therefore, is statistically different from zero at the 99 percent confidence interval.

[45]These results are consistent with the National Telecommunications and Information Administration study. By comparison, the recent unpublished study by Salinger, op. cit., examines this question by looking only at the four movie networks of ATC and Viacom, and, therefore, provides an answer to a much narrower question than our question of whether vertically integrated MSOs as a group discriminate in their carriage of all the major basic and premium networks when they have no ownership interests in the network.

network's service. If the network adds enough viewers to justify the subscription fee, it will be economic to carry it; if the network does not attract sufficient viewers to justify its cost, it will not be economic to carry it. For many of the most popular cable networks, the programming is sufficiently attractive to justify carriage on virtually every system. For example, ESPN, the sports network, is carried on almost every cable system, although it has no vertical ties with any MSO. Clearly, ESPN has the drawing power to make it attractive to cable operators regardless of whether the operators have ties to other cable networks or not.[46]

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[46]To illustrate the economic forces at work, consider the following hypothetical. Suppose a TCI system having 10,000 subscribers was trying to decide which programming services to add to each of several open slots in its cable line-up. Among its choices might be ESPN and Black Entertainment Television (BET). The highest ratecard rate for ESPN was $.28 per subscriber per month in 1988, for BET the corresponding rate was $.03 (Cable TV Programming, May 19, 1988, p. 7). If, however, the cable operator chose BET, some of the amount paid by the local cable system would flow back to its parent TCI. Particularly since TCI owns 16 percent of BET, its "share" is $.0048 per subscriber (16 percent of $.03). Thus, choosing BET would bring back $48 to TCI (10,000 times $.0048). Comparing programming costs, ESPN costs the cable system $2,800 (10,000 times $.28), BET costs $300 (10,000 times $.03) less the $48 returned to TCI, or $252. If each new subscriber brings the cable system an average of $12 over variable costs, ESPN considered alone would be chosen if it could bring in more than 234 subscribers ($2,800 divided by $12). If BET were considered alone, it would have to bring in 21 subscribers ($252 divided by 12). If, instead, the cable system was unaffiliated with TCI, BET would have to attract 25 subscribers to justify carriage ($300 divided by $12). If the cable system had to choose between the two services (as it would if it had only one remaining unoccupied channel), ESPN would be chosen if it could bring in 213 more subscribers than BET (234 less 21) if the cable system were owned by TCI. If the cable system were not owned by TCI, ESPN would have to attract 209 more subscribers (234 - 25). The difference in the number of subscribers sufficient to sway the decision in the two cases of ownership v. non-ownership interests in BET is very small (4 / 213), or only about 2 percent and is likely to be dwarfed by other differences in the attractiveness of the two sources of programming, such as the underlying demographics of the cable system's area.

Further, even for programming networks which are not as popular as ESPN, and where all cable systems do not believe they must carry the network, the evidence presented in Table 7 indicates that there is no evidence of any systematic bias in carriage rates by vertically integrated MSOs. For example, while the Viacom cable systems are somewhat more likely to carry the Video Hits-1 network in which it has an ownership interest (Table 5), this carriage is not at the expense of, for example, Black Entertainment Television, in which it does not have an ownership interest. Table 7 indicates that the Viacom (and Cablevision) systems in our sample actually have a higher carriage percentage of Black Entertainment Television than the cable systems in our sample that have no ownership interests in any programming network. The results in Table 7 indicate that there is no systematic discrimination by vertically integrated MSOs as a group against networks among the top 28 in which they do not have an ownership interest.

While these results may be due to the fact that some small additional channel capacity is available and, therefore, there is no necessity to reduce the carriage of other networks when a system is somewhat more likely to carry networks in which it has ownership interests, alternatively, it may be the case that discrimination does exist but that the reduction in carriage shows up for less popular networks below the top 28. However, although our results only refer to carriage of the 28 most popular basic and premium networks on which it was relatively easy to obtain carriage rates, the results are unlikely to differ if, at additional expense, the analysis was extended to less popular networks. Given the less than three percent decrease in potential carriage of nonowned networks by vertically integrated MSOs, it is extremely unlikely for this effect to show

up for any individual less popular network among the top 100 networks. In fact, since the four vertically integrated MSOs together account for less than 40 percent of industry subscribers, the decrease in total market demand facing all other networks as a group from this effect is only about one percent.[47]

c) Vertical integration results in increased program choice for consumers among the more popular networks.

The primary result from Table 7, that the largest, most vertically integrated MSOs are more likely to carry the top 28 networks in which they do not have ownership interests, is further verified by more formally taking account of channel capacity of the systems in our sample. We would expect systems with greater channel capacity to have increased carriage of all networks. The systems in our benchmark group average channel capacity of 43.6 channels, which is slightly higher than the 42.6 channel capacity among the four vertically integrated MSOs. This suggests that, if anything, the results in Table 7 likely understate the amount of additional carriage of the top 28 networks by vertically integrated MSOs.

A more complete statistical examination of channel capacity and how the degree of vertical integration affects the total number of services carried can be accomplished with regression analysis. If vertical integration leads to an increase in the total number of the most popular services carried, there should

[47] 3 percent x .40 equals 1.2 percent. Therefore, even if MSOs are somewhat more likely to carry the networks in which they have an ownership interest, this effect certainly is not anticompetitive foreclosure and does not create a barrier to entry. The effect cannot be the reason for the lack of popularity of any network.

be a positive relationship between the measured degree of vertical integration of the owner of a cable system listed in Table 6 and the number of basic and premium networks among the top 28 that are carried by the system. The results of the statistical analysis, reported in Table 8, generally confirm the previous evidence: vertical integration results in an increase in viewer choice among the top 28 networks. In particular, an increase in the number of networks in which an MSO has an ownership interest, that is, the extent of the MSO's vertical integration, is associated with a statistically significant increase in the number of the top 28 networks offered by the system.[48] If the effect of vertical integration were to decrease viewer choice, the number of networks in which the parent company of the cable system had an ownership interest would have a negative coefficient in the regression. In contrast, the positive coefficient of .358 in the regression implies that an ownership interest in an additional network increases the number of the top 28 networks offered to subscribers.

The results from Tables 5, 7 and 8 clearly imply that consumers benefit in terms of availability of an increased number of the most popular basic and

[48]The "t-statistic" noted for each variable in Table 8 is a measure of statistical significance of the variable. If the t-statistic exceeds 2.0, the variable is usually thought to be statistically significant. That is, we have a high degree of confidence that the variable actually does have a significant effect on program carriage and the measured coefficient is not due solely to measurement error or random chance. The t-statistic on the number of networks with an ownership interest variable is 8.1, indicating that this is a highly significant factor in determining carriage. The regression also corrects for channel capacity differences between systems. The results indicate that an extra channel of capacity for a system with 36 or fewer channels is associated with .5 extra networks; for systems with 37-54 channels, .2 extra networks; and for systems with 55-126 channels, .1 extra networks. Summary statistics and separate regressions for basic and premium networks are presented in Appendix Table II.

Table 8

**REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN THE NUMBER OF THE MAJOR NETWORKS CARRIED BY A SYSTEM AND THE DEGREE OF VERTICAL INTEGRATION OF THE SYSTEM**

Dependent Variable = Number of Major Basic and Premium Networks Carried by a Cable System

| Independent Variable | Regression Coefficient | t-statistic |
|---|---|---|
| Number of Cable Networks with an Ownership Interest | .358 | 8.1 |
| Channel Capacity (0-36) | .482 | 10.7 |
| Channel Capacity (37-54) | .167 | 8.4 |
| Channel Capacity (55-126) | .069 | 4.0 |

premium networks when their cable operator has network ownership connections. A cable operator with a network ownership interest is more likely to carry the network in which it has an ownership interest and also more likely to carry other of the top 28 networks in which it has no ownership interests.

## B. Foreclosing the Entry of Alternative Distribution Technologies

It is easy to confuse vertical integration in the cable industry with vertical integration in other industries. Consider what might likely be thought to be a close analogy, the vertical integration of motion picture distributors and motion picture theaters. In that case, there is at least a possibility that a vertically integrated distributor would favor its own owned theaters over competing theaters owned by others by withholding product (a popular film) from competing theaters. In the cable industry, however, the economic motivation behind this possibility does not exist. Since the cable systems typically do not compete for viewers amongst themselves, they would have no incentive to withhold programming from any cable system wishing to license it. In fact, they have an incentive to have as many systems as possible carry it to expand subscribership and revenue. As a consequence, viewers everywhere can gain from the programming provided through the participation of a few vertically integrated MSOs; the benefits are not limited to subscribers of those MSOs alone.

Although MSOs do not have any incentive to deny the programming from their vertically integrated cable networks to other cable operators, it has been alleged that they have an incentive to deny such programming to alternative distribution technologies within their areas of cable service. Therefore, what

we should look for to determine anticompetitive intent and effect is a pattern by MSOs of systematically foreclosing potential competitors. Technologies competitive with traditional cable include multichannel multipoint distribution service (MMDS), home satellite dishes (HSD), satellite master antenna systems (SMATV), and, perhaps in the near future, direct broadcast satellite (DBS). If the MSOs acquired any real market power through their vertical integration into cable networks, they could presumably use this power to deny competitors access to programming material. This would be particularly true if the alternative delivery system was located in an area in which the vertically integrated MSO held the local cable franchise.[49]

With regard to the existence of market power, two points should be made. First, the failure of a particular cable network to sell to a particular competing delivery system should not necessarily be interpreted as evidence of anticompetitive exclusion. It is well recognized that exclusivity is often motivated by procompetitive considerations.[50] Secondly, the absence of a systematic policy against sales to competing delivery systems is conclusive

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[49]We are assuming for this analysis that condition (4) cited above on page 27 for the presence of anticompetitive foreclosure, that the new technologies cannot supply or purchase their own programming, holds for this case. However, it can be expected that as these alternative technologies grow, unique programming networks will develop for them so that they are able to differentiate their product.

[50]Howard Marvel, "Exclusive Dealing," Journal of Law & Economics 25 (April 1982), pp. 1-26; Phillip Areeda, Antitrust Analysis, 3rd ed. (Boston: Little, Brown & Co.), 1981, pp. 811-812; Herbert Hovenkamp, Economics and Federal Antitrust Law (St. Paul: West Publishing), 1985, p. 246; John S. Chard, "Economic Effect of Exclusive Purchasing Arrangements in the Distribution of Goods," Marketing Channels, Relationship and Performance, Luca Pellegrini and Srinivas K. Reddy (ed.) (Lexington, Massachusetts: D. C. Heath & Co.), 1986; Benjamin Klein and Kevin M. Murphy, "Vertical Restraints as Contract Enforcement Mechanisms," Journal of Law & Economics 31 (October 1988), pp. 287-288.

evidence that the vertically integrated MSOs do not see programming as the key to the exclusion of competition.

After an analysis of exclusivity, the evidence of cable programming availability is examined with respect to the two alternative delivery systems that have the most vocal critics of cable operators, home satellite dishes and MMDS systems.

1. Exclusivity is Not Necessarily Anticompetitive

It is important to recognize at the outset that even if a cable operator demanded exclusivity from a program supplier in its area of transmission, this would not necessarily represent an anticompetitive attempt to foreclose competition. Exclusivity is common in many parts of the entertainment business and is a well accepted contractual element in maximizing the value of copyrighted artistic works. The demand for cable programming exclusivity is similar to the demand by a local NBC affiliate station that it be the sole broadcaster of the Cosby Show episodes within its market area. Exclusivity increases the value of the programming to the station and is generally acceptable to the broadcast network because it maximizes network revenue.

Exclusivity in the case of Cosby Show episodes has nothing to do with market foreclosure. It is merely an example of how exclusivity can benefit both parties to a competitive transaction. The seller, by taking the position that there will be only one licensee in each market, puts the potential buyers in competition for its goods, forcing them to bid one against the others. And the

buyer benefits by having a way to differentiate what it offers consumers from the services offered by competitors. Exclusivity, therefore, can arise in competitive markets without the need for an anticompetitive motivation.[51] The seller will accept the exclusive arrangement as long as the buyer offering that arrangement is willing to pay an amount at least as large as what could be gained by selling the programming to every interested buyer in the market. And the buyer will offer this amount if the programming is sufficiently attractive to bring in enough new viewers.

It is important to recognize that the decision regarding exclusivity is completely separate from the issue of vertical integration. Even a satellite delivered cable programming network system without any cable operator ownership interest may find it profitable, by the above reasoning, to refrain from selling to noncable video delivery systems. The incentive to refrain from such sales is completely independent of the form of ownership. A vertically integrated seller will sell to a competing delivery system if the amount offered is sufficient to offset the lost revenue from lost viewers on its own system. But this is exactly the same amount which would be offered by an unrelated firm

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[51]Exclusive rights to syndicated TV programs have not been found to violate the antitrust laws. "Although restraint may be the 'essence' of every contract, under the rule of reason standard only those agreements that unreasonably restrain trade violate the Sherman Act." Ralph C. Wilson Industries Inc. v. Chronicle Broadcasting, 794 F.2d 1359, 1363 (9th Cir. 1986) (citation omitted). Further, it is worth noting that the U.S. Department of Commerce has recently supported exclusivity arrangements in cable television programming. See U.S. Department of Commerce, "Video Program Distribution and Cable Television: Current Policy Issues and Recommendations," June 1988, pp. 104-106.

seeking an exclusive license. The calculations are exactly the same, and so would be the decision with regard to exclusivity.[52]

2. The Availability of Cable Programming to Alternative Delivery Systems

Much of the discussion of vertical foreclosure of program supply to noncable delivery systems is flawed by a failure to distinguish between lawful individual firm behavior and unlawful anticompetitive collusion. Some commentators, after observing that the cable MSOs could gain by collectively withholding cable network programming from, say, MMDS or DBS operators, draw the immediate conclusion that the vertically integrated MSOs can and do engage in anticompetitive collusion. To assume the existence of such anticompetitive collusion, however, is unwarranted without some clear evidence to support it. The assumption that collusion exists only tends to make rational discussion more difficult. In fact, the underlying market arrangements and evidence suggests that there is a tendency for both integrated and unintegrated cable networks to make their product available to home satellite dish owners, MMDS systems and other noncable delivery systems.

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[52]For example, suppose a vertically integrated MSO in a small city felt that providing its owned programming to a competing MMDS would result in the loss of 500 customers, each providing a monthly net cash flow of $5 per month. The total "cost" of offering the programming to the MMDS would be this loss, or $2,500 per month. If the MMDS offered more, say $3,000 per month, accepting this offer would net the MSO $500 per month and the offer would be accepted with both the cable system and the MMDS would offer the same cable network. The same calculations would be made by an unintegrated program network owner. The cable system would offer $2,500 "extra" monthly to retain exclusivity, but that offer would be topped by the MMDS's offer of $3,000 to "break" the exclusivity. A profit maximizing cable network would accept the MMDS offer and sell the programming on a nonexclusive basis.

As discussed above, cable operator involvement in network programming began with the first of the satellite delivered cable networks, HBO. Since then, both integrated and unintegrated cable networks have developed. The consequence is a mixed system, with MSO participation in programming networks varying from zero to 100 percent. In most cases, however, no single MSO has a majority ownership position in a network. Instead, the more common pattern is one involving several owners, some of which are MSOs and others are firms or individuals whose primary activities are in other fields. This diversity of ownership has at least two competitive implications. The first is the consequence of non-MSO ownership. Non-MSOs who own a portion of a cable network are not interested in restricting the sales and profits of that network by allowing the MSOs to determine selling policy based upon criteria other than those involving maximizing the value of the network. Since the participation of non-MSO shareholders is common in the provision of cable network services, this force would be expected to be of considerable importance.

Secondly, even if every stockholder in a cable network was an MSO, only infrequently does a single MSO have a majority position. Thus, even if hypothetically the involved MSOs could agree to refrain from providing programming to competing video delivery systems, such an agreement would be unlawful. Merely sitting on a common board of directors does not entitle firms to conspire to exclude competition; the existence of these shareholding interests does not allow the participating MSOs to engage in any conspiracy which would be unlawful if conducted in any other smoke-filled room. Realistically, joint ownership of cable networks can have no anticompetitive effects unless this ownership is used as a "cover" for an unlawful conspiracy. We are not entitled