AN ECONOMIC ANALYSIS OF SUBSCRIBER LIMITS

Paul L. Joskow
Elizabeth and James Killian Professor of Economics and Management
Massachusetts Institute of Technology

and

Linda McLaughlin
Senior Vice President
National Economic Research Associates, Inc.

January 3, 2002

I. OVERVIEW

The paper focuses primarily on the Commission's horizontal ownership rules. First, we will examine entry by new program services and carriage patterns by MSOs to determine whether there is a problem in need of fixing through Commission ownership restrictions. Second, we examine the Commission's primary basis for its previously adopted horizontal ownership rules ignoring any additional potential program selection effects that may result from vertical integration between MSOs and program suppliers. Third, we will discuss how vertical integration might affect these results, given the growth in channel capacity, competition from DBS and the existing Commission antidiscrimination rules. Finally, we consider other potential problems identified by the Commission to see if they warrant horizontal ownership rules.

The primary Commission concern underlying the horizontal ownership rules appears to be that if an MSO gets too large it will exert its bargaining or monopsony power to reduce the quantity and diversity of programming by making it unprofitable for attractive program services to enter the market and/or to reduce the quality of those services that do enter the market. In addition, the Commission appears to be concerned that a vertically integrated MSO will inefficiently reduce the quantity and quality of new program services that directly compete with program services in which it has an ownership interest (vertical integration) in order to raise the profitability of its own services. We focus first on the horizontal buyer market power issue and then address vertical integration.

In supporting the 30 percent ownership limit rule it previously adopted, the Commission made three assumptions: (1) a new program service needs to be available to 15 million subscribers, or roughly 20 percent of the MVPD subscribers at that time, to be successful; (2) a new program service has only a 50 percent chance of obtaining available subscribers; and (3) the two largest MSOs may somehow coordinate their program decisions (collude formally or tacitly) and jointly decide not to carry a particular program service, thus, completely removing the two largest MSOs from the pool of available subscribers. The horizontal ownership rule that the Commission previously adopted then flows from the following arithmetic reflecting

these assumptions: If the two largest MSOs have 30 percent of subscribers and choose not to carry a program service at all, the remaining "open field" for a new service equals 40 percent of all subscribers, only 50 percent of which will have access to the new service [(100% – 30% – 30%) x 50% = 20%].

We demonstrate that the Commission's concerns are inconsistent with the behavior of MSOs and their effects on program availability and diversity. Horizontal buyer market power issues give neither a theoretical nor an empirical basis for the assumptions underlying a 30 percent subscriber limit. We show that vertical integration does not provide any justification for this limit. Moreover, the limit could actually have the effect of harming consumers by increasing the cost of programming and reducing the number of program services.

Throughout, we concentrate on basic program services that receive revenues from license fees and advertising. We draw on existing economic studies of carriage behavior by large and vertically integrated MSOs and of MSO bargaining power. We also compile and discuss relevant descriptive statistics drawn from industry publications to address other Commission assumptions.

II. ENTRY OF PROGRAM SERVICES AND MSO SIZE: EMPIRICAL EVIDENCE

The Commission's concerns about too little entry of new program services are surprising in light of the widespread entry of program services. The empirical evidence on entry and carriage of new program services by large MSOs since 1992 shows that there is no entry problem in need of fixing. Further, recent expansion in channel capacity and the increasing importance of program service competition between traditional cable MSOs and DBS suggests entry will be even easier in the future. There is no evidence suggesting the size of cable MSOs negatively affects the ease of entry for program services.

A. Entry of new program services since 1992

There has been rampant entry of new program services since 1992. The Commission's 2000 *Report on the Status of Competition* shows that 152 of the 225 existing networks entered in 1992 or later. Approximately two-thirds of these entrants were not vertically integrated in

2000. In all its Reports, the Commission has included 176 networks that have entered since 1992, of which 24 have exited and 152 survive.[1]

Kagan's *Cable Program Investor* reports subscribers for a smaller group of more popular basic networks.[2] It recorded 45 entrants during 1992 to 2001, four of which have since exited and one of which it no longer tracks. (See Table 1.) The remaining 40 new entrants are an important part of the menu of basic program services available to subscribers today. They account for over half of the 77 basic networks listed by Kagan. (See Table 2.) Many of these new networks already are available to large numbers of subscribers.[3]

Independent program services predominate over vertically integrated services. Twenty-six of the 40 entrants currently listed by Kagan, including eight of the 11 with the highest carriage, are independent. Conversely, two of the four networks that exited were vertically integrated. (See Tables 1-2.)

Several of the basic network entrants since 1992 have been very successful. Seven of the new basic network entrants—Cartoon, Sci-Fi, FX, TV Land, Animal Planet, Fox News and MSNBC—had sufficient viewers in the systems in which they were carried to qualify for Nielsen ratings in the year after they were introduced.[4] Four others had sufficient viewers for ratings within their first three years.[5] Currently, these 11 entrants are included among the 36 Nielsen-rated cable networks. (See Table 3.) Each of these 11 now reaches at least 70 percent

---

[1] These figures count services listed under a single name in the 2000 Report as one service. There are currently 281 services if each unique service within a multiplexed service is counted separately. FCC, *Annual Reports on the Status of Competition*, 1994-2000, programming services appendices. For new program services, like new television series, ultimate consumer valuation, viewership and advertising revenue are highly uncertain. Inevitably, some new program services will succeed and others will fail. What is surprising is the relatively small proportion of new program services that fail.

[2] Kagan also shows entry of premium services. Three of the nine premium services listed in Kagan's premium network census—Starz!, Flix, and Sundance—have entered since 1992, while a tenth, Disney Channel, has largely become a basic service. (*Pay TV Newsletter*, August, 31, 1994, p. 2 and November 27, 2001, pp. 2-3.)

[3] Some of the new entrants listed by Kagan are sister services of basic networks existing in 1991 (e.g., Discovery and the entrant Animal Planet, USA and the entrant Sci-Fi). Nevertheless, there were major owner-entrants, including News Corp. (FX, Fox News and others) and Scripps (Food and HGTV) and several entrants with a single network (Oxygen, techtv, Outdoor Channel). (*Cable Program Investor*, September 11, 2001, p. 4.)

[4] Nielsen requires a rating of at least 0.1 percent among subscribers who have access to the service and an average audience of at least 1000 TV households in order to report ratings.

[5] *Cable TV Programming* and *Multichannel News*, various issues.

of subscribers.[6] The other 29 entrants listed by Kagan, and the additional entrants in the Commission's 2000 Report, have had varying degrees of more moderate to yet-to-be-determined success.

Entrants are attracted by the expected cash flows from subscriber and advertising revenues as well as the expected sale price that may be achieved if and when a network is sold to a new owner. Rising market values for successful services have likely played an important role in attracting new entrants during the last decade.[7] New entrants with few subscribers and negative cash flow have sold for substantial sums shortly after their entry in the late 1990s. For example, with approximately ten million subscribers each, Eye on People sold for $100 million, Classic Sports for $175 million and techtv for $260 million.[8] For new entrants that have achieved, or are close to achieving, positive cash flows five or six years after entry, values are far higher: about $750 million for Speedvision and $1.2 billion for Golf in 2001. (See Table 4.) In evaluating the economic success of new entrants, it is important to take into account current and expected future cash flow patterns, including the value the market places on new networks when they are sold. Studies that focus only on current cash flow drawn from estimates of accounting data provide a misleading picture of the economics of new services and the attractiveness of entry.

B. Increase in channel capacity

The large increase in channel capacity during the past decade has made room for more program services and has, therefore, facilitated entry. In 1992, 33 percent of subscribers were

---

[6] Percentage calculation based subscribers shown on Table 1 and 88.8 million MVPD subscribers as of July 2001. (*Annual Assessment of the Status of Competition*, CS Docket No. 01-129, Comments of National Cable & Telecommunications Association, August 2, 2001, p. 7.) Between July and October 2001, the subscribers to each of these networks have increased by five percent or more. (Compare Tables 1 and 2.)

[7] For example, Family Channel is a moderately successful basic network. It entered in the late 1970s and has had high MVPD penetration, moderate ratings, positive cash flow and potential for further improvement since the late 1980s. It sold three times: for $250 million in 1990, for $1.4 billion in 1997 and for $2.8 billion in 2001. The price per subscriber rose from about $5 to $21 to $34, and the cash flow multiple from about eight to ten to 24. (*Cable Program Investor*, May 17, 2000, p. 5, July 17, 2000, p. 2 and November 29, 2001, p. 2.)

[8] It appears that CBS recouped its intial investment of $50 to $70 million and made a profit on its sale of Eye on People to Discovery. (Linda Moss, "CBS Eyes Steady Cable Course," *Multichannel News*, August 3, 1998 and Linda Moss, "Discovery Takes Full Ownership of Eye on People," *Multichannel News*, January 4, 1999 [Online].) The possibility of even partial recoupment of the initial investment lowers the cost of entry.

located in systems with capacity for 54 or more channels. In 2000, 62 percent of subscribers were in such systems.[9] In addition, digital capacity is expanding. In 2000, 15 percent of basic cable subscribers also had digital set-top boxes, with more than 70 percent projected by 2005.[10] MSOs do not spend money to add channel capacity unless they hope to use it by adding attractive programming.[11] More channel capacity also reduces the opportunity cost of carrying one program service instead of another when channel capacity constraints are binding and makes it easier to carry services that the operator might previously have chosen not to carry due to channel constraints.

C. Carriage behavior of large MSOs

There is substantial evidence that large MSOs carry more basic programming than do small MSOs—both affiliated and unaffiliated program services.[12] As a result, the presence of large MSOs helps rather than hinders entry.

Large MSOs tend to have larger capacity systems. Survey data supplied by the American Cable Association, which represents 900 smaller cable operators serving 6.5 million subscribers, show that 46 percent of its responding members will have less than 550 MHz capacity (about 80 channels) at the end of 2001 compared with only 13 percent of the top five MSOs' subscribers. In addition, only 26 percent of ACA respondents will have 750 MHz and

---

[9] *Television Factbook*, Services Vol., 1992 edition, p. G-65 and 2001 edition, p. I-97.

[10] *Kagan Broadband Cable Financial Databook*, 2001, p. 10. AOL Time Warner's typical digital package consists of about 40 basic networks. (*Carriage of Digital Television Broadcast Signals*, CS Docket No. 98-120, TWC's Responses to Questions on Cable System Capacity and Retransmission-Consent Agreements, received June 19, 2001, p. 2.)

[11] For example, the average number of broadcast and satellite channels offered by cable systems in basic and cable programming service tiers increased from 38.5 in 1993 to 54.8 (40.5 of which were satellite channels) in 2000. These data are reported for systems that do not meet the Commission's "effective competition" criteria and exclude a la carte and digital tiers. (FCC, *Report on Cable Industry Prices*, January 2, 1997, Table 2 and February 14, 2001, Table 6.)

[12] James N. Dertouzos and Steven S. Wildman, "Programming Access and Effective Competition in Cable Television," pp. 19-23 and Appendix A, attached to Comments of Ameritech New Media, Inc., *Implementation of Section 11(c) of the Cable Television Consumer Protection and Competition Act of 1992*, MM Docket No. 92-264, August 14, 1998. See also Tasneem Chipty, "Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry," *American Economic Review*, June 2001, p. 428. Chipty finds that larger systems carry more basic services. Larger systems tend to be owned by larger MSOs. For example, all but two of the more than 100 systems with over 100,000 subscribers are owned by one of the ten largest MSOs. (*Kagan Broadband Cable Financial Databook*, 2001, pp. 19 and 36.)

greater capacity compared with 79 percent of the top five MSOs' subscribers.[13] Further, large MSOs tend to have large systems, and Commission data show that large systems carry more channels on basic and cable programming service tiers than do small systems. For example, in 2000, large systems carried over 60 channels in these tiers, about 20 more than small systems.[14] Thus, large MSOs carry more services, or alternatively exclude fewer services, than do small cable operators.

D. Program service competition between cable and DBS

Entry of program services has also become easier due to the success and growth of DBS. The focus of DBS on programming competition—offering more program services than competing cable operators—has substantially changed the competitive landscape at the program purchasing level compared to the situation when the Commission's horizontal ownership rules were adopted. Cable operators have always had an incentive to carry more attractive program services to gain additional subscribers since a significant number of homes with access to cable choose not to subscribe; DBS competition has increased the incentive cable operators have to carry more services to avoid losing additional subscribers to DBS.

In 1992, DBS was only a potential competitor to cable. DirecTV did not begin providing service until June 1994 and EchoStar until March 1996.[15] Thereafter, DBS grew rapidly, to five million subscribers in mid-1997, ten million in mid-1999 and 15 million by the beginning of 2001. Currently, DBS has 17.2 million subscribers.[16]

---

[13] *Carriage of Digital Television Broadcast Signals*, CS Docket No. 98-120, Responses of AT&T Broadband (dated May 31, 2001), TWC (received June 19, 2001), Comcast (dated May 29, 2001), Charter (dated June 1, 2001) and Cox (dated May 30, 2001), Reply Comments of American Cable Association, August 16, 2001, p. 4, *Cable TV Investor*, August 29, 2001, p. 12, and www.americancable.org.

[14] FCC, *Report on Cable Industry Prices*, February 14, 2001, Attachment B-3. The Commission data categorize systems with 50,000 or more subscribers as large and those with fewer than 10,000 subscribers as small.

[15] FCC, *Fourth Annual Report on the Status of Competition*, January 13, 1998, Appendix C, Table C-3.

[16] FCC, *Seventh Annual Report on the Status of Competition*, January 8, 2001, Appendix C, Table C-1; *Sky Report*, November 2001 (Online).

DBS competition is widespread. More than ten percent of TV households subscribe to direct-to-home satellite service in all but four states and the District of Columbia;[17] urban areas average DBS penetration of 11 percent.[18] Further, about half of DirecTV subscribers were cable subscribers at the time they first subscribed to the satellite service and about 70 percent live in cabled areas.[19]

DBS operators offer over 200 channels of digital video and audio programming. The GAO found, based on 1998 data, that cable systems compete by offering expanded channel selection.[20] The Commission found that DBS decreased the demand for cable in terms of subscriber growth based on data as of July 2000. A year earlier, the Commission found only a modest (not significant) DBS effect.[21]

III. MSO SIZE IS NOT A BARRIER TO PROGRAM SERVICE ENTRY

An increase in MSO size is unlikely to create a barrier to program service entry, given the attributes of program services and their distribution.

A. Value of program services to cable MSOs

An MSO gains and retains subscribers by offering them attractive programming. Moreover, the more attractive the programming it offers, the higher are the prices it can charge for subscriptions and the higher are the advertising revenues the MSO can earn. This is true

---

[17] Direct-to-home includes about one million C-Band dishes in addition to DBS. In the U.S. as a whole, direct-to-home accounted for about 17 percent of TV households in mid-2001. The low penetration areas—Connecticut, DC, Hawaii, Massachusetts and Rhode Island—accounted for less than five percent of U.S. TV households. (*Annual Assessment of the Status of Competition*, CS Docket No. 01-129, Comments of the Satellite Broadcasting and Communications Association, August 3, 2001, Appendix A and Warren Communications News, *Television & Cable Factbook 2001*, p. C-55.)

[18] Commission computation based on cable-operator-provided DBS penetration of TV households in the area served by its system and Commission-determined urban population (more than 75 percent urban population in the county served by the cable system). FCC, *Report on Cable Industry Prices*, February 14, 2001, pp. 18-19.

[19] *Annual Assessment of the Status of Competition*, CS Docket No. 01-129, Comments of DirecTV, Inc., August 3, 2001, pp. 11 and 13.

[20] GAO, *The Effect of Competition From Satellite Providers on Cable Rates*, July 2000, p. 4 and p. 30. DirecTV and EchoStar each offer about 80 basic networks in popular packages with monthly fees similar to those of cable systems (i.e., DirecTV's $31.99 Total Choice and EchoStar's $30.99 America's Top 100 package).

[21] FCC, *Report on Cable Industry Prices*, February 14, 2001, p. 19 and Attachment D-2.

whether or not MSOs have market power as sellers of video services to consumers. Cable MSOs must convince consumers to subscribe in competition with broadcast television, VCR/DVDs, DBS, and other alternative MVPDs where they exist. If the incremental revenue from additional programming exceeds the incremental cost of acquiring and carrying it, then MSOs will want to carry the programming. In 1992, the average price of basic service was about $19 and about 60 percent of homes passed by cable subscribed. As cable operators have increased the number of program services offered, they have increased both prices and penetration. In 2000, the average price of basic service was about $30 and penetration rose to about 66 percent of homes passed.[22] Once subscribers are attracted, cable operators must convince them to remain. Basic cable churn amounts to about 32 percent per year, or about twice the rate at which individuals move from one residence to another.[23] By improving the quality and diversity of programming with the addition of attractive program services, MSOs are likely to be better able to retain subscribers and reduce churn. Cable operators generally, and large MSOs in particular, have demonstrated their commitment to carry more program services by their recent expenditures on capacity expansion and plans for further expansion in the near term.[24]

B. MSOs do not have textbook monopsony power

If a large cable MSO was a textbook monopsonist, it would purposely buy fewer program services to hold down the prices it pays for program services generally and, thus its cost of programming. However, the economic characteristics of the program service buying decision, and more generally of the market for programming, do not fit standard monopsony theory. A textbook example of monopsony is a single employer of workers with specialized skills in a geographically isolated town producing a homogeneous good (e.g., a large coal mine in a small company town). All workers are paid the same wage, even though some may be more skilled than others. There are costs workers face in order to move to other towns or

---

[22] *Kagan Broadband Cable Financial Databook*, 2001, pp. 7-8 (revised).

[23] *Kagan Media Money*, December 4, 2001, p. 5.

[24] *Carriage of Digital Television Broadcast Signals*, Responses of AT&T Broadband and other MSOs (dated May and June, 2001). In general, the primary use of the added capacity is analog or digital programming.

retrain for other jobs in the same town. Because the employer has no competitors and workers cannot easily seek alternative employment through relocation or retraining, the employer faces an upward-sloping supply of labor. That is, if the employer wants more workers, it must pay higher wages to induce them to work. However, since all workers are paid the same wage, it will have to pay higher wages to its current employees as well. Accordingly, the employer readily recognizes that its decisions about how many workers to hire will affect the wage rate it pays to all workers and that it can exercise monopsony power by hiring fewer workers in order to drive down the wages that it pays to all workers. More generally, the critical element necessary to give firms monopsony power in input markets is that the buying firms individually face upward-sloping input (e.g., labor) supply curves and recognize that by buying fewer inputs they can reduce the *market price* that they pay for these inputs. If individual firms pay the same input prices whether they buy more or fewer inputs, they face flat supply curves for inputs and, thus, cannot have monopsony power. Further, the textbook model of monopsony power relies on the assumption of a single price for the labor input and for the homogeneous output.

The textbook model of monopsony does not provide an accurate or useful representation of either the supply of video program services or the acquisition of program services by MSOs. First, individual MSOs do not face upward-sloping supply curves for program services and so they do not have textbook monopsony power. The supply of program services to individual MSOs is flat (not upward-sloping) since the primary inputs used to produce these services, unlike coal miners in a company town, can easily be shifted to alternative uses. Program services rely on exactly the same kinds of creative talent and other inputs as do theatrical motion pictures, broadcast network programming and other media. Moreover, individual program services must compete with one another for these program inputs. An individual buyer of these inputs cannot drive input prices below their competitive market values. As a result, from the perspective of a program service supplier and from the perspective of individual program service buyers, the supply of program service inputs, and the associated supply of program services, is flat.

Second, neither program services nor the packages offered by MSOs to subscribers are homogeneous products offered at a single price. Program services are differentiated products, each with its own unique characteristics. Although all program services rely on the same pool of inputs to be created, once a program service is created, its service attributes are at least slightly different from those of other program services carried by MSOs. When an MSO incorporates a particular set of networks into the packages it offers to subscribers, the MSO is also differentiating the product it sells. Both the number of networks offered and the characteristics of the individual networks incorporated by the MSO affect the subscriber demand for cable service. MSOs and program suppliers often enter into non-linear pricing arrangements rather than simple fixed per-subscriber fees (linear prices). The diverse licensing agreements between program suppliers and MSOs are not evidence of monopsony power; rather, they are contractual arrangements designed to align promotional incentives of suppliers and distributors and share risks between them. Because the textbook monopsony model fails to incorporate these and other important attributes of program services and their distribution, it is of no use for understanding the effects of larger MSO size on entry of new program services.

It is impossible to understand program acquisition decisions and associated contractual arrangements properly without taking account of product differentiation and other economic attributes of program services and their distribution. Program service suppliers seek to occupy positions in differentiated product space where they can attract consumers who value their specific networks highly. MSOs find carriage of program services that consumers value highly especially attractive. However, the ultimate attractiveness of a program service is highly uncertain when the service is first conceived and launched. The combination of differentiated program services and uncertain future success inevitably leads to bilateral bargaining between the program service supplier and the MSO regarding their respective future shares of the "surplus" associated with a successful service and this in turn leads to a variety of sometimes complex contractual arrangements between program suppliers and MSOs. The variety and complexity of these contractual arrangements are competitive responses to the market environment in which program services are bought and sold and associated potential contractual hazards and transactions costs. They are not indicative of buyer market power.

C. The Commission's implied static model does not fit program services

The Commission's argument that a program service must achieve some specific minimum number of subscribers to be economically viable implicitly assumes the presence of significant minimum fixed costs that any program services must incur to enter and become successful. The Commission also apparently assumes that the average cost per subscriber will fall significantly as a program service reaches more subscribers, while license fees and advertising revenues increase at least proportionately with the number of subscribers. Put another way, subscription and advertising revenues cover the program service's variable costs and provide a margin to cover its fixed costs. In this static model, the more subscribers there are, the greater is the aggregate margin available to cover fixed costs.

The Commission's apparent conceptualization of program costs and revenues is too static. In reality, program service costs have fixed and variable components and dynamic attributes that are quite different from the supply-cost assumptions reflected in this static model. Subscriber penetration rates and revenues from license fees and advertising also have a dynamic pattern. These cost and revenue attributes are important for understanding entry decisions, penetration rates, profitability, bargaining between program suppliers and MSOs, and the effects of MSO bargaining on the supply and quality of programming.

Initial "fixed cost" expenditures to develop, create and distribute a new program service are properly viewed as an initial investment which the program supplier hopes to recoup over the life of the program service via a time stream of cash flows derived from future subscription and advertising revenues and/or ultimate sale of the service to a third party. Program suppliers know that it is likely to take several years for them to recoup this initial investment as the program service is rolled out and its popularity verified by consumer responses to it. For example, Outdoor Life and Speedvision were introduced in mid-1995 and early 1996, respectively, by the same owner. In 1996, the owner expected to break even in five years after

a combined investment of $180 million at which point each service was expected to attain 20 to 25 million subscribers.[25]

Moreover, this initial investment is a choice variable for the program supplier. It depends on the nature of the program service that it seeks to sell—where it is located in product space—and how much it decides to invest initially in program quality. Other things equal, higher levels of spending on programming and marketing are required to achieve higher initial subscriber and viewer levels.[26] For example, Outdoor Life and Speedvision decided to invest in original programming despite the expense, and to increase the amount of original programming on Outdoor Life, in order to develop more attractive services.[27] As the rollout of a program service proceeds successfully, it is likely to make additional investments to improve program quality or to reposition a program in product space based on the reception it receives in the market. In fact, Outdoor Life and Speedvision are estimated to have spent more on programming than originally expected. Although the two services received more subscribers (26 to 33 million) than initially targeted by their respective fifth years, they did not achieve the targeted year-five profitability due to higher spending.[28]

Many successful program services started off with modest initial investments and then added to them over time as the programs proved their attractiveness by gaining subscribers and advertising revenues. For example, Cartoon started with library material and added original

---

[25] *Commercial Leased Access*, CS Docket No. 96-60, Comments of Outdoor Life Network et al., May 15, 1996, Affidavit of Roger Williams, pp. 6-8.

[26] Nevertheless, clever programming ideas can yield popular programming at lower costs at least initially for cable networks (TV Land, with reruns from the early days of television) and for television programs (e.g., the recent success of CBS's Carol Burnett highlight special). Costs can also be decreased through integration, including with sister basic services (e.g., Discovery and Animal Planet), broadcast networks (e.g., NBC and MSNBC), foreign services (e.g., BBC and BBC America) or program suppliers (e.g., Vivendi and USA) which can supply infrastructure, marketing and/or programming. Revenues can also be increased from other sources, including licensing foreign services (e.g., Bravo Canada) and broadcast stations (e.g., CNN's broadcast affiliate news service).

[27] Affidavit of Roger Williams.

[28] Table 5 shows estimated programming expenses of $360 million for the two services over five years; the initial forecast expected less than half that amount (*Cable TV Programming*, April 30, 1995, p. 3). (See *Cable Program Investor*, August 10, 2000, p. 10 and Table 1 for subscribers after five years and *Cable Program Investor*, May 24, 2001, p. 6, for operating cash flow after five years.) This does not mean the increased spending was a mistake: As shown on Table 4, in 2001 Outdoor Life sold for over $600 million and Speedvision for over $700 million.

content at higher cost. Contrary to the Commission's apparent assumption that constant programming costs can be spread over a greater number of subscribers as the service grows, several high-growth new entrants had ever-increasing "fixed" programming cost that yielded approximately *constant* or *increasing* program cost per subscriber over time. As shown on Table 5, ESPN2, Fox Health, BET on Jazz and Animal Planet, as well as Cartoon fit this dynamic constant- or increasing-cost-per-subscriber pattern.

D. MSO Program Service Purchasing Decisions

In this section we discuss how MSOs make decisions about carriage of new program services. We first define what we refer to as an "attractive" program service. We then discuss how MSOs choose among attractive program services and how MSOs of different sizes interact and contract with program suppliers.

1. Attractive services

An attractive program service is one in which there is positive surplus for the MVPDs and the program service supplier to share. This surplus is defined as the additional revenue (subscriber plus advertising) that the MVPDs can earn by carrying a particular program service plus the additional advertising revenue that the program supplier can earn, less the additional cost (marketing and opportunity costs) incurred by the MVPDs to make the service available, and less the total cost incurred by the supplier in creating and marketing the program service. This surplus provides a metric for the social value of a new program service and increasing the size of this surplus should be the focus of Commission policies.

It is only attractive services that should be expected to succeed in a well-functioning marketplace. Because some program services are more attractive to MSOs and their subscribers than others, it is inevitable that some new program services will succeed while others will fail no matter what the ownership structure is at the MSO buying level. Moreover, the experience with television programs and motion pictures should lead us to expect that a significant number of program service concepts will be financially unsuccessful, either unable

to attract enough interest to be created or unable to succeed financially and remain in the market once created.

2. Attractive services that are profitable to both MSOs and the program suppliers

MSOs have an interest in carrying all attractive program services, subject to channel capacity limitations, and in negotiating a license fee that will make it profitable both for the MSO to carry the attractive program service and for the supplier to offer the service. Because attractive program services have a positive surplus or "rent" associated with them, there is necessarily a range of license fees that will make the service profitable for both the MSO and the supplier. Bargaining over the license fee does not mean that the program service will not be available. The license fees determined by bargaining between the MSO and the program supplier will determine how the total surplus is divided but the MSO has an interest in ensuring that the license fee is high enough to make an attractive service successful since it will be profitable for both the buyer and the seller for it to be available. A service will be successful if the license fees it gets from MVPDs plus its advertising revenues exceed its costs (including a reasonable return on its investment).

3. MSO size, social surplus and bargaining power

Larger MSOs can create additional social surplus or efficiency in a number of interrelated ways: First, larger MSOs can operate their systems more efficiently than small MSOs. That is, they can have lower cost (ignoring the program service license fee) of offering additional services to subscribers. Second, larger MSOs can offer contractual arrangements to program suppliers that reduce the suppliers' costs of providing service. Contracts with larger MSOs may reduce program supplier costs by facilitating financing of the new program service and reducing the programmers' cost of capital. For example, a five-year agreement with a subscriber commitment from a large MSO provides much more security to a program service than a similar or shorter deal with a small MSO. A substantial commitment from a large MSO gives the program supplier both revenue and visibility that can make it possible for it to secure lower-cost financing and attract other MVPDs who might otherwise be concerned about the

program service's financial viability. Accordingly, the potential to increase efficiencies in these and other ways provide incentives for MSOs to grow larger.

Moreover, recent research suggests that it is increased efficiencies that provide the incentives for MSOs to grow larger, rather than increased bargaining power that may flow from larger size. Specifically, Chipty and Snyder show that larger MSO size does not increase an MSO's bargaining power; indeed larger size reduces an MSO's bargaining power in their model.[29] It then follows that, under these conditions if larger MSOs pay lower prices for programming, it reflects the fact that they are sharing in efficiencies that they have helped to create rather than exerting greater buyer market power.

A related effect emerges as a buyer gets large enough to recognize that its purchasing decisions are likely to affect the financial viability of a program service with which it is bargaining.[30] The large buyer is more likely to internalize externalities associated with a new program supplier's need to cover its fixed costs, enhancing the profitability of program services, especially services that are financially marginal, and thereby making program suppliers, MVPDs and consumers better off. These conclusions flow from the following considerations: As an MSO's share of subscribers increases, it is more likely to recognize that its program purchasing decisions can affect the ability of a new program service to be successful. It recognizes both that it has something to gain by carrying the service and something to lose if the program service cannot gain enough subscribers overall in the market to generate adequate subscription and advertising revenue to be financially viable. That is, a large MSO is more likely than a small MSO to internalize the impact of its purchasing

---

[29] Tasneem Chipty and Christopher M. Snyder, "The Role of Firm Size in Bilateral Bargaining: A Study of the Cable Television Industry," *Review of Economics and Statistics*, May 1999, p. 326. Chipty and Snyder consider the realistic case where program services are sold using non-linear prices and examine how a program buyer's bargaining situation with a program supplier changes as it gets larger through horizontal merger. Their theoretical and empirical analysis leads to the conclusion that "cable operators integrate horizontally to realize efficiency gains rather than to enhance their bargaining position vis-a-vis program suppliers."

[30] Alex Raskovich, "Pivotal Buyers and Bargaining Power," Economic Analysis Group Discussion Paper EAG 00-9, December 7, 2000. Raskovich employs a modified version of the Chipty and Snyder model to focus on situations where a large buyer is pivotal to the financial viability of a program service. He concludes that "On net, becoming pivotal tends to worsen the merging buyers' bargaining position." Both the Chipty and Snyder and the Raskovich papers rely on a number of important theoretical assumptions, including the absence of vertical integration. We consider effects of vertical integration further below. At the very least, these papers reinforce our view that reasoning from a simple textbook monopsony model can be very misleading.

decisions on the financial viability of a new program service. Because it is in the interest of an MSO to have attractive program services available to offer to its subscribers, a large MSO is more likely to build into its contractual arrangements enough revenue to ensure that an attractive program service will receive adequate revenues to be launched successfully. A small MSO is likely to ignore the effects of its purchasing decisions on the financial viability of a new program service and effectively free ride on the contractual arrangements made by large MSOs which do take these effects into account. By helping to ensure that an attractive program service is financially viable, a large MSO creates additional surplus for its own subscribers by increasing the likelihood that an attractive service will be available to them. It also increases surplus for program suppliers and for subscribers of other smaller MVPDs who will now have greater assurance that the program service will be available to them in the market.

Taken together, the efficiency-enhancing effects of larger MSO size are likely to lead larger MSOs to offer more program services to their subscribers, to charge lower prices, and to play an important role in facilitating entry of new program suppliers, benefiting other MSOs and their subscribers as well. This is consistent with the available empirical evidence.[31]

These factors also help to explain why a large MSO might pay lower license fees than a small MSO for reasons other than its having greater bargaining power. To the extent that an MSO's contractual arrangements reduce programmer costs or otherwise increase programmer surplus, we should expect an MSO to share in some of these savings, perhaps in the form of lower license fees, even if the large MSOs had bargaining power equal to that of smaller MSOs. In fact, as Chipty and Snyder show, a larger MSO may have lower license fees due to increased programmer surplus despite the larger MSO's lesser bargaining power.

IV. THE COMMISSION'S THREE OPEN-FIELD ASSUMPTIONS

The Commission's three open-field assumptions are not supported by the data. In addition, the growing importance of DBS, both as a competitor to cable MSOs and as a

[31] Dertouzos and Wildman.

program service distribution outlet, further undercuts the basis for the 30 percent ownership cap.

A. Successful entry does not require immediate carriage by 15 million subscribers

In 1999, the Commission adopted the conclusion that a new programmer needs 15 million subscribers to insure viability; at that time, 15 million amounted to about 20 percent of MVPD subscribers.[32] The total number of MVPD subscribers continues to increase. There is no indication that new cable services require an increasing number of subscribers, or a constant percent of the increasing total number of MVPD subscribers.

Moreover, entry is a dynamic process, with choice of market niche, variation over time in program expenditures, product positioning, carriage and subscribers, and uncertainty. This is inconsistent with the Commission's implied static model. Actual successful entrants follow varied and dynamic expenditure and carriage patterns. In almost every case, the subscriber trend over time is increasing—sometimes quickly, other times slowly. Not surprisingly, attractive program services typically do eventually achieve more than 15 million subscribers but the rate at which they achieve their long-run equilibrium varies widely and the subscriber profile that a service will achieve is uncertain at the time it is being developed for launch.

Graph 6 shows subscriber patterns over time for entrants that began offering program services in 1994. It includes high-, medium- and low-subscriber networks. The graph shows that higher initial subscribers do not necessarily result in higher eventual subscribers. Among the 1994 entrants, FX had twice as many subscribers as HGTV in the first two years, but HGTV had about ten million more subscribers than FX in 1998 through 2000. Conversely, entrants with similar initial subscribers do not necessarily have similar subscribers a few years later. NewsTalk, Fox Movies, Independent Film, MuchMusic and Game Show each had four to six million subscribers in 1996. NewsTalk exited the next year, Game Show had 30 million subscribers in 2000 and the other three had slower growth with 13 to 18 million subscribers in 2000. Neither can the subscriber pattern be predicted by the breadth of the network's appeal.

[32] *Horizontal Ownership Limits*, Docket No. 92-264, Third Report and Order, October 20, 1999, ¶¶42 and 45.