

## The Primestar Acquisition of the News Corp./MCI Direct Broadcast Satellite Assets

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### I. Introduction

On May 12, 1998 the Department of Justice filed suit to block Primestar Inc. (“Primestar”) from acquiring the direct broadcast satellite assets of The News Corporation Limited (“News Corp.”) and MCI Communications Corporation (“MCI”). Direct broadcast satellite (“DBS”) uses orbiting satellites to transmit video programming directly to subscribers’ homes. The Antitrust Division took the action because it believed that the consortium of owners controlling Primestar, which included five of the largest cable companies in the United States, would have “little incentive to use the satellite service assets to compete aggressively against cable television”. The possibility of higher (than otherwise) cable rates, less innovation, and lower quality in the highly concentrated cable industry was an immediate source of concern to the Division. The parties strongly disagreed, claiming that the acquisition would be procompetitive – it would introduce as quickly as possible a third vigorous competitor into the DBS business, a competitor that would have a strong incentive to compete against cable operators as well as DBS competitors. The parties eventually abandoned the proposed deal before the commencement of trial, leaving in question whether the Antitrust Division’s suit would have been successful, and how News Corp./MCI would have chosen to use its satellite assets.<sup>2</sup>

<sup>1</sup> The author is Robert L. Bridges Professor of Law and Professor of Economics at the University of California, Berkeley. He served as Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice from June 1997 through December 1998. This paper relies heavily on the talented efforts by the those involved in the Primestar investigation. Jim Wade (working under the supervision of Don Russell) led the legal team, while Will Gillespie (working under the supervision of George Rozanski) was responsible for a significant portion of the economic analysis. The analysis described here relies heavily on the work of Will Gillespie. Patrick Greenlee and Scott Thompson also made substantial contributions. The author appreciates the helpful comments of Cindy Alexander, Will Gillespie, Lewis Kornhauser, and Steven Salop. The views and any errors contained in the paper are mine.

<sup>2</sup> On November 30, 1998 EchoStar Communications Corporation announced a deal to acquire the direct broadcast satellite (DBS) assets from News Corp. and MCI WorldCom (including two satellites

While significant in its own right, the Primestar acquisition provides an interesting window into the Antitrust Division perspective on a case involving complex horizontal and vertical questions. It also raises two intriguing, important conceptual and empirical issues that the antitrust agencies are likely to face again in the future. The first conceptual issue involves unilateral effects and potential competition. In a "typical" unilateral effects case one's concern is whether the merging parties will price the acquired products as competitively as the original owners would have priced those products had the merger not taken place. In the acquisition in question the satellite asset has yet to be put into service. Consequently, the issue is whether Primestar would utilize its acquired assets as competitively as would the firm that would otherwise have acquired those assets. In sum, potential competition and unilateral effects issues are intertwined, so that a traditional unilateral effects case has been replaced by a "potential competition – unilateral effects" case.

The second issue involves corporate governance. Had the proposed acquisition been consummated as initially planned, the five cable owners of Primestar would have had substantial board representation and, if voting in concert, a controlling interest in the new entity. Two questions follow almost immediately. What is the likelihood that the cable entities would have "formed a coalition" that would vote to compete less aggressively against cable television than an entity without cable interests? How would that likelihood change if the deal were restructured so that the combined cable ownership interests were less than 50%? Note that the conceptual issue is substantially more complex than the question of how a unilateral effects analysis changes if one firm holds a non-controlling equity position in another firm. The question is how and under what circumstances a subgroup of a consortium of firms will use their board membership and/or voting control to alter their competitive strategies to benefit their shareholders rather than the shareholders of the consortium.

My goal in the discussion that follows is to raise and comment on conceptual issues, and not to debate the Primestar case per se. I have, therefore, not attempted to fully characterize all aspects of the transaction, to adequately explain the strong arguments made in support of the acquisition by the parties, or to fully characterize the opposition of the Antitrust Division. I do believe, however, that the conceptual discussion will be more focused and comprehensible if it is undertaken as part of a case study, which by its nature will provide some perspective on the thinking of the Division about a very complex acquisition. In that spirit, I begin in Section II with an overview of the Primestar acquisition, followed by a description of the multi-channel video programming distribution ("MVPD") market, the relevant market from the perspective of the Antitrust Division. Section III presents an analysis of the unilateral effects issues relating to the acquisition. This analysis builds directly on one of the studies presented to the FCC by the defendants' experts, Charles

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to be launched within this year). More recently, on January 22, 1999 Primestar, Inc. received a bid to purchase its medium-powered direct broadcast satellite business and assets by Hughes Electronics, the parent company of DirecTV, a DBS competitor of Echostar, and another bid by Echostar itself.

*Table I.* The cable partners

Company	Total subscribers (as of end of 1996)
Tele-Communications, Inc. (TCI)	13,900,000
Time Warner Cable (TW)	12,300,000
Media One of Delaware, Inc. (US West)	4,354,287
Comcast Corp.	4,280,000
Cox communications, Inc.	3,259,384
Total:	38,093,671

Source: 1997 FCC Report: Tables 7B and E-3.

River Associates.<sup>3</sup> Because I do not wish to debate all of the issues raised by the parties and the Antitrust Division, and because the Division's internal analyses and discussions are confidential, I have opted to simplify some of issues raised and to disregard others. A more complete analysis of the acquisition would deal with the efficiencies that could have been lost or delayed if the acquisition was blocked, with the nature of the vertical programming effects, and with the possibility that antitrust concerns might have been remedied through a myriad of corporate governance solutions. In Section IV I outline the corporate governance issues. Section V offers some brief concluding comments.

## II. The Primestar Acquisition

Primestar was a partnership formed in 1990 as a joint venture involving five of the largest cable multiple system operators: Time Warner, Inc. ("Time Warner"), Tele-Communications, Inc. ("TCI"), Comcast Corporation ("Comcast"), Cox Communications, Inc. ("Cox"), US West/Media One ("US West"), and Primestar's satellite provider, GE American Communications Inc. ("GE"). The cable partners of Primestar collectively served approximately 60% of the nation's cabled households at the time of the proposed acquisition. Their size, as measured by the numbers of cable subscribers, is given in Table I. In addition, at the time of the proposed acquisition Primestar operated the second-largest satellite television service, serving 2 million subscribers from a "medium-power" satellite. (The medium power service is limited in the number of channels that can be offered, and by the requirement that a larger receiving dish be utilized by subscribing households.)

Under the proposed acquisition News Corp./MCI agreed to transfer to Primestar the authorization to operate 28 satellite transponders at the 110° orbital slot

<sup>3</sup> I am aware of four submissions made by Charles River Associates on behalf of the parties: Salop et al. (1998a, b, c, d). These submissions respond primarily to questions raised about Primestar's competitive incentives (relative to those of a standalone market entrant) raised by the FCC and by the opposition raised by DirecTV's economic expert Carl Shapiro.

*Table II.* Market shares in DBS segment of MVPD market

Firm	Number of subscribers (as of January, 1998)	Percentage share
DirecTV/USSB	3.82M	55.6%
Primestar	1.962M	28.5%
Echostar	1.09M	15.9%
Total:	6.872M	100.0%

Source: SkyTrend Report, February 1998.

along with two high-power DBS satellites under construction. In exchange, News Corp./MCI would receive a 20% non-voting equity share in Primestar and a convertible note, and Primestar's agreement to negotiate carriage of News Corp. programming on its high-power DBS service. News Corp./MCI also agreed not to compete in the domestic DBS market for a period of 10 years following the deal's consummation.

In order to understand the competitive issues that arise out of the transaction, some background on the nature of DBS television and the MVPD market is essential. The 110° orbital slot is one of only three slots (there is one at 101° and one at 119°) that can be used to provide high-power DBS service to the entire continental U.S. It is also the last position available for independent DBS firms to use or expand into. At the time of the proposed transaction three firms competed in the DBS business: DirecTV/United States Satellite Broadcasting Inc. (which operated the 101° slot) and Echostar Communications (which operated the 119° slot) offered high-powered service, while Primestar offered medium-powered service. Their relative shares of the DBS segment of the market are given in Table II.

Approximately 76%, or over 75 million, of all television households in the U.S. pay for some form of MVPD service. The dominant MVPD providers are, of course, the local cable companies, which collectively account for 87% of all MVPD services. Obviously, concentration varies substantially from local district to local district. In its complaint, the Antitrust Division focused on the MVPD market and its dominant cable television companies, relying in part on the FCC's 1997 Competition Report conclusion that "local markets for the delivery of video programming generally remain highly concentrated and are still characterized by some barriers to both entry and expansion by competing distributors". The analysis of the acquisition would clearly have been significantly different if the Division or the FCC had viewed the relevant market as being restricted to DBS alone; from that perspective the acquisition would have turned a relatively weak third player in the DBS market into a significant third competitor.

DBS currently stands as the most successful alternative to cable within the MVPD market. Importantly, many DBS subscribers are former cable subscribers.

And, because of its ability to reach the entire U.S. from a single point, high-power DBS is a more significant threat to cable television than is the current medium-power service. The Antitrust Division chose to distinguish MVPD from the traditional "over the air" broadcast television services because of its (1) multiple channels, usually between 35 and 172; (2) programming that mixes basic services (e.g., ESPN, CNN, USA) and premium services (HBO, Showtime) not available over the air; and (3) a monthly programming subscription fee. While cable and DBS are delivered via different technologies, they were seen to be in the same market in part because consumers view the services as similar and to a large degree substitutable. Moreover, cable and DBS compete by offering similar packages of basic and premium services (as contrasted with over the air broadcast, which has a limited set of programming services).

Consumers selecting an MVPD provider typically have the choice of one cable operator (which has been granted a local franchise)<sup>4</sup> and three DBS providers. The set of providers will usually be the same within a particular local cable franchise area, but will differ across such areas. The DBS segment of the MVPD market has grown rapidly since the mid-1990s, with over 7 million current subscribers nationwide.

At the time of the proposed acquisition the high-powered DBS assets of News Corp./MCI had not yet been deployed to offer service. When those assets do come on line, they can be expected to bring substantial competitive benefits to the market. The Antitrust Division presumed it desirable to have the 110° slot utilized to provide high-powered DBS service.<sup>5</sup> The analysis that follows asks only whether the proposed acquisition is the most effective way to accomplish this.

### III. Unilateral Effects – The Possibility of Cannibalization

A full and complete analysis of unilateral effects cannot be accomplished without explicitly looking at the corporate governance issues that are raised in Section IV. However, for analytical purposes it will be useful to abstract from these questions by focusing on the incentives faced individually by a number of the Primestar partners, on the assumption that the partners maximize the combined profits of the joint venture and the profits of the individual owners from other sources (i.e., cable).<sup>6</sup>

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<sup>4</sup> Occasionally a second cable firm has been given permission to compete by constructing ("overbuilding") its own wireline cable system. Further, in a small number of local markets firms have constructed multichannel multipoint distribution service ("MMDS") systems that use microwave transmissions to deliver programming (as opposed to a satellite dish or an antenna).

<sup>5</sup> Thus, the data transmission alternative is ruled out as less economic.

<sup>6</sup> This is the assumption made by Carl Shapiro in his submission to the FCC on behalf of DirecTV ("In re Application of MCI Telecommunications Corporation and Primestar LHC, Inc. For Consent to Assignment of Direct Broadcast Satellite Authorization", October 20, 1997). The parties strongly objected to this assumption on both legal and economic grounds.

The unilateral effects analysis in this case compares the likely competitive behavior of a cable-controlled Primestar with the likely behavior of a hypothetical DBS operator not affiliated with cable companies. In a more typical unilateral effects case the status quo is usually reasonably well understood; as a result the focus of the analysis lies in the prediction of the pricing and other strategic decisions to be made by the merged firm. Because *Primestar* is in economic terms a potential competition case, neither of the two regimes to be compared involves the status quo. This increases the complexity of the analysis because one needs to evaluate the competitive behavior of the most likely hypothetical new DBS operators as well as the likely behavior of Primestar. For purposes of the discussion in this section I assume, as did the Antitrust Division, that the hypothetical operator will have no cable interests, and will otherwise be a viable competitor in the DBS segment of the MVPD market.<sup>7</sup>

The Division claimed that an anticompetitive harm would occur because (post-acquisition) Primestar's incentives would deviate from the incentives of the hypothetical "standalone operator". Specifically, some of the subscribers who are likely to be attracted to DBS by a price cut will have previously subscribed to a Primestar cable system. As a result, it was argued that Primestar, taking all of its owners' interests into account, would incorporate into its decisionmaking the fact that some of the revenues that it would enjoy would represent, as Carl Shapiro has described, a "cannibalization" of its existing cable customer base.<sup>8</sup> By comparison, the hypothetical standalone operator would have no cable system revenues to worry about, and would therefore have every incentive to compete aggressively to obtain business from all potential subscribers, including current Primestar cable subscribers. The losses to DBS were seen as likely to be particularly significant to cable operators because those switching customers tend to subscribe to more premium and pay-per-view services from their cable providers than the average cable customer.

The anticompetitive harms in the MVPD market that could result from this cannibalization effect could theoretically take a number of different forms, many of which would result in higher effective cable prices. These include reduced discounting, a reduced likelihood of there being an aggressive low-price leader, not offering targeted promotions or special offers in local Primestar partner areas, not cutting equipment prices as much as would a standalone operator, and not offering

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<sup>7</sup> The hypothetical DBS firm is likely to be either of the two current DBS firms DirecTV or EchoStar, which would have an incentive to use the additional capacity to attract new subscribers. In principle, it could also be the originally planned joint venture between MCI and News Corp. – "ASkyB" – either alone or perhaps with other partners. The possibility of an entirely new entrant not a party to joint venture seems less likely because of the large financial cost and the substantial significant expertise that is required.

<sup>8</sup> Shapiro Statement, ¶\*23. I have assumed no cannibalization effects between DirecTV or EchoStar and the newly acquired DBS assets. (These assets represent a relatively small portion of the MVPD market.)

local signals if and when it became feasible to do so.<sup>9</sup> Any harms that would arise could in principle be large and durable because no new DBS entry or expansion by existing DBS firms appears likely without the use of the 110° slot.<sup>10,11</sup>

In its submission to the FCC, Primestar's economic experts Steve Salop, Stan Besen, John Woodbury, and Jane Murdoch ("CRA"), suggested an important corollary of the cannibalization effect.<sup>12</sup> According to CRA, Primestar cable owners have substantial interests in video programming services and movie studios. These programming interests gain when Primestar finds new MVPD subscribers. However, they may also gain when a subscriber switches from cable to DBS. The extent to which there is such a gain depends on the extent (if any) to which DBS subscribers purchase more programming (including pay-per-view) than do cable subscribers.<sup>13</sup> I have included these programming "benefits" in the analysis that follows.<sup>14</sup>

A complete unilateral effects analysis of these likely anticompetitive effects would have been a difficult undertaking since it would include, among other things, an evaluation of the "capacity constraints" faced by current DBS operators and information concerning the relevant demand elasticities for DBS and cable services.<sup>15</sup> The Antitrust Division took a somewhat different perspective. The Division realized that an understanding of the forces that underlie this complete analysis can be obtained by evaluating the differential incentives faced by Primestar, which is "vertically integrated" in cable and DBS, and a standalone DBS operator. Specifically, the Division asked the hypothetical question: If Primestar uses the DBS satellite assets to offer DBS service, how will this affect its "cable

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<sup>9</sup> In theory the anticompetitive effects could include adverse effects on quality, including fewer upgrades.

<sup>10</sup> New entry through a "partial-CONUS" slot is unlikely because the high capital costs of DBS would have to be at least doubled to reach everyone in the country with the same signal, relative to what an entrant with a full-CONUS slot can achieve. New entry at medium-power is unlikely because medium power relies on large receiving dishes that are less acceptable to many consumers. Moreover, a recent entrant with a medium-power service quickly went bankrupt.

<sup>11</sup> The 110° slot has the further advantage that all current DBS subscribers can receive its signals without having to buy a second dish or antenna because of its central location among the three U.S. allocated slots.

<sup>12</sup> Steven C. Salop, Stanley M. Besen, John R. Woodbury, and E. Jane Murdoch, "An Economic Analysis of Primestar" Competitive Behavior and Incentives", submitted to the FCC (File No. 91-SAT-TC-97, File No. 106-SAT-AL-97), January 7, 1998.

<sup>13</sup> These programming effects are estimated by CRA by determining a programming services profile for the average customer on cable and the average customer on DBS and by breaking down average programming revenue according to whether the subscriber is new or comes from cable.

<sup>14</sup> Concerns were raised about the appropriateness of including these vertical benefits, since the programming interests of the parties can, and do, vary over time.

<sup>15</sup> The 110° slot covers all states except Hawaii and Alaska. However, the offerings of each of the three relevant slots, 101°, 110°, and 119° were constrained at the time of the proposed acquisition by the number of available transponders, which in turn limits the number of stations that can be offered to subscribers.

division"? Because the comparison is a standalone operator, any retail margins earned in the DBS business will net out. The difference arises because Primestar's cable division loses revenues (given by its cable retail margins) when its cable business is cannibalized, and could gain revenues to the extent that Primestar's programming business could be enhanced.<sup>16</sup>

One version of the cannibalization losses and the associated programming gains (which excludes the claimed efficiencies) is shown in Table III.<sup>17</sup> All of the numbers included in the table have been calculated on a per-subscriber, per-month basis. For example, the \$1.76 cannibalization loss associated with TCI's Primestar ownership reflects the fact that for every new Primestar DBS customer, TCI's cable division will expect to lose \$1.76 per month of net revenues. The calculation assumes that the new DBS subscriber is equally likely to come from cable, to come from another DBS company, or to be an entirely new MVPD customer entirely.

Table III shows that, from the point of view of the parties, the programming effect outweighs the cannibalization effect. Given that the benefits associated with the offering of the new high-powered DBS service would be delayed by antitrust intervention, the CRA study argues against such intervention. A number of potential problems with this (and other more refined) versions of the unilateral effects analysis were raised by the Antitrust Division. With respect to programming, the analysis arguably may not adequately account for the fact that DBS firms disproportionately attract cable customers that value programming highly. In econometric terms, there could be a form of selection bias because the marginal DBS customer differs from the average.

The CRA analysis of cannibalization involves a number of additional assumptions that were of concern to the Antitrust Division. One particularly crucial assumption is that future high-powered DBS subscribers would come equally from cable, other DBS firms, and customers new to MVPD – a set of weights associated with each channel of 1/3, 1/3, 1/3.<sup>18</sup> These numbers were hotly debated, and are subject to criticism. The 1/3 assumed DBS portion is likely to be overstated, since there is little evidence of cannibalization from DBS. Moreover, while initially many DBS subscribers came from those households not having MVPD service, over time an increasing proportion has come from those with cable service. Because the cannibalization effect is driven by DBS subscribers that come from

<sup>16</sup> The programming effect will be felt through its wholesale profit margins. If a subscriber switches from cable to DBS and increases his or her use of special programming, Primestar's programming profits will increase.

<sup>17</sup> This table is consistent with the Antitrust Division's view of the acquisition. However, the view of the parties was significantly different on several important dimensions, including the appropriate voting shares for Comcast, Cox, and U S West, and especially TCI (Salop et al. (1998a), Table B9). In addition, Primestar distinguishes NewsCorp./MCI's ownership shares after the roll-up of the DBS assets after the assumed participation by NewsCorp, rather than before. (Salop et al. (1998a), Table B6.)

<sup>18</sup> These were the weights used by Carl Shapiro in his submission for DirecTV.



Table III. Gains and losses - CRA assumptions

Partner	Cannibalization loss	Programming gain	Net
TCI	(\$1.76)	\$0.77	(\$0.99)
Comcast	(\$0.46)	\$0.01	(\$0.45)
Cox	(\$0.35)	\$0.05	(\$0.30)
US West	(\$0.80)	\$0.76	(\$0.04)
TW	(\$0.75)	\$2.87	\$2.12
GE	\$0.00	\$0.17	\$0.17
News Corp.	\$0.00	\$0.42	\$0.42
Primestar	\$4.12	\$4.63	\$0.51

Note: Calculations are based on the Salop et al. submission. Primestar (Table B7), TCI (Table B8) and Primestar without News Corp. (Table B9).

News Corp.'s and programming interests are not included here because News Corp. would not have had a voting interest in the joint venture.

cable, a reweighting along the lines just described would substantially increase the cannibalization effect.

Table IV provides a hypothetical calculation of the programming and cannibalization effects under the alternative hotly debated assumption (more consistent with recent surveys of DBS customer) that the appropriate weights used to measure the cannibalization effect should be 75% of DBS customers from cable and 25% new to MVPD, and that there is no switching among DBS firms.<sup>19</sup> With this change, the aggregate cannibalization effect is substantially larger than the programming effect, a result that is consistent with the Division's view that the acquisition would create significant anticompetitive harm.<sup>20</sup> Moreover, if the programming effect declines sharply over the next few years due to the rollout of digital cable, then the cannibalization effect would be even more pronounced.

<sup>19</sup> The fact that 75% of DBS subscribers come from cable generally does not necessarily mean that the relevant diversion ratio is 75%, since the diversion ratio would reflect the fraction of uses at the margin that would have gone to cable had the price of satellite been raised. CRA submissions anticipated and responded to the 1/3, 1/3, 1/3 Shapiro assumption re: weights and to the assumption that 75% of the DBS subscribers come from cable generally. See, for example, Salop et al. (1998b).

<sup>20</sup> The change in the programming effect nets out two separate effects: (1) when the number coming to DBS from cable increases from 1/3 to 3/4, there is a net programming gain for the average subscriber, whereas, (2) when the number of new subscribers decreases from 1/3 to 1/4, there is a programming loss. In support of the parties, CRA argued not only that the programming effect was of the same order of magnitude as the cannibalization effect, but also that the estimated cannibalization effect was diminished when volume discounts were taken into account. Given the substantial efficiencies claimed by the parties, the CRA analysis suggests that the "net" price effect of the acquisition was insignificant, and in any case, less than 5%.

Table IV. Gains and losses – alternative assumption

Partner	Cannibalization loss	Programming gain	Net
TCI	(\$3.96)	\$0.89	(\$3.07)
Comcast	(\$1.03)	\$0.01	(\$1.02)
Cox	(\$0.78)	\$0.05	(\$0.73)
US West	(\$1.80)	\$1.00	(\$0.80)
TW	(\$1.69)	\$3.49	\$1.80
GE	\$0.00	\$0.16	\$0.16
News Corp.	\$0.00	\$0.55	\$0.55
Primestar	(\$9.26)	\$5.60	(\$3.66)

Note: Changing the weighting to allow 75% of the customers to be coming from cable and 25% being brand new to MVPD changes both the magnitude of the programming effect and the cannibalization effect relative to Salop's original assumptions.

As I mentioned briefly earlier in the paper, *Primestar* is in an important sense a potential competition case, since the 110<sup>c</sup> high-powered DBS service will not be available until some time in the future. We are faced, therefore, with a unilateral effects analysis that attempts to evaluate the difference between two predicted values rather than the difference between a predicted value and a state of world approximated by the status quo as in traditional unilateral effects analyses.<sup>21</sup> While this undoubtedly complicates the analysis, I believe that it would be wrong to conclude that the analysis has become twice as complex or for that matter less reliable as a result. To the contrary, I believe that we can use historical data to predict with reasonable confidence the nature of competition between DBS and cable that would arise if the *Primestar* venture had proceeded. Further, we can use similar information to characterize competition in the but-for world of a hypothetical standalone DBS competitor. Finally, the focus of analysis is on the difference between the two predictions, a difference that can be assessed with greater accuracy than one would expect if one were to compare two alternative states of the world (*Primestar* versus a standalone operator) as independent.

Unlike many potential competition cases, in *Primestar* we have the advantage of having substantial information about past DBS-cable competition. This historical information can be used to predict the nature of future competition. Such an exercise is difficult, of course, because in the past *Primestar* was a medium-powered competitor, and not a high-powered competitor, and because the preferences of the marginal subscribers to DBS have been changing over time. Furthermore, *Primes-*

<sup>21</sup> It would be more accurate to say that in traditional cases the Antitrust Division compares the post-merger world to the state of the world that would arise in the future if the merger was blocked, which is presumed to be reasonably approximated by the status quo. Obviously, this simple characterization would be inappropriate to the extent that current conditions will change even if the merger is blocked (e.g., if there is a failing firm).

tar's cable partners tend to own cable systems in urbanized areas, whereas the large dish associated with Primestar's medium-powered service does not generally sell well in urban areas.<sup>22</sup>

With these qualifications in mind, we can study the success of Primestar in the past, comparing how well it has done in areas where its cable partners compete to areas where they do not. An examination of the relevant data shows that in non-partner areas, Primestar's average penetration rate (the percentage of households in an area that are subscribers) is 2.46%, where the comparable penetration rate is 0.93% in partner areas.<sup>23</sup>

Not all of these subscription differences can reasonably be attributed to differences in demand conditions rather than to cannibalization. To account for this, CRA used cross-section data to estimate a series of logistic regressions.<sup>24</sup> Their analysis raised a number of conceptual issues that were also hotly debated, but not fundamental to the issues that I wish to raise here. I do note, however, that while the regression suggests that the simple difference between penetration rates clearly exaggerates the cannibalization effect, the Division concluded that the effect remained both significant and substantial. Moreover, the cross-section approach can only measure competitive results that are affected by differential geographic efforts by Primestar. To the extent that the new Primestar entity would compete less aggressively against cable on an across-the-board national basis, any cross-section analysis would understate the anticompetitive harm from the acquisition.

Let me return now to the potential competition issue that I raised earlier. I believe that (in this particular case) the potential competition aspect of the analysis does not significantly affect the reliability of the empirical analysis of unilateral effects. In other words, one should not discount the prediction of anticompetitive harm simply because the but-for world involves a more complex hypothetical than a merger hypothetical that compared the post-merger outcome to the outcome that would arise if the merger was not consummated. To see this point in its starkest form, assume that all aspects of the competitive behavior of interest can be summarized in a single variable  $p$ . Specifically, let  $p(PS)$  represent a price index for cable services after the Primestar acquisition as proposed is on line, and let  $p(H)$  represent the comparable index when the high-powered DBS service is operated by a hypothetical standalone operator. Then, the statistical risk,  $R$ , associated with a prediction of the unilateral effects of the acquisition can be measured by:

$$R = \text{var}[p(PS) - p(H)].$$

This can be rewritten, alternatively as:

$$R = \text{var}[p(PS)] + \text{var}[p(H)] - 2\text{cov}[p(PS), p(H)].$$

<sup>22</sup> Similarly, many Primestar partners' cable systems have higher than average numbers of channels, making them more able to resist DBS competition.

<sup>23</sup> These numbers are derived from CRA, Table A1.

<sup>24</sup> CRA used 1990 household data combined with Nielsen data relating to cable ownership.

There is clearly uncertainty in predicting both  $p(PS)$  and  $p(H)$ . But the covariance between the two predictions is likely to be positive and quite high, since many of the sources of randomness are common to both predictions. Even though  $p(H)$  may be higher than in cases that do not involve potential competition, the overall risk is limited by the covariance term. As a result, the variance of the estimate of the difference between these two regimes is likely to be substantially smaller than twice the variance of the individual components.<sup>25</sup>

The simple conclusion is that a prediction of the difference between two states of the world need not be less reliable than the prediction of one, especially to the extent that historical econometric data provide a natural test of the difference between those predictions.

#### IV. Unilateral Effects – Corporate Governance Issues

In this analysis to this point, I have assumed that the anticompetitive harm resulting from the proposed merger is given by the aggregation of the cannibalization losses less the programming gains. This analysis is appropriate under the assumption that the post-acquisition goal of the Primestar managers is to maximize the combined profits of the joint venture and the profits of its owners from other sources. Is this an appropriate assumption? How does the analysis change when this assumption is relaxed? The answer to these questions lies requires an explicit consideration of a complex set of corporate governance issues.

Prior to the acquisition, each of the cable partners controlled the pricing and sale of the Primestar service in the areas served by their own cable systems. In that world it seems appropriate to view Primestar as consisting of a set of divisions, each offering differentiated products (cable and medium-powered DBS) in separate geographical markets. The analysis of competition could, as a result, properly be undertaken on a division by division basis. However, under the proposed acquisition, each cable partner would have received shares in the new Primestar entity. These shares would be allocated proportionally to the number of pre-acquisition customers of each cable partner, and the geographical divisions would no longer be exclusive to individual partners. In effect, each cable partner under the new arrangement would have a claim on the entities' profits proportional to its shares in the new entity. The voting shares determined on this basis are given in Table V, along with the net loss (cannibalization loss less programming gain under the CRA assumption and my alternative assumptions).

I use Table V as the basis for my characterization of the governance issues that were raised by the Antitrust Division. It is important to note that this representation abstracts from a number of complications that could have significantly affected the

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<sup>25</sup> Suppose for example that the variances of the two prices are equal and that the correlation between the two series is 1, with the slope measuring the relationship between the two equal to 1. Then, the variance of the difference will be identically equal to 0, since any prediction error generated by one series will be exactly canceled out by the other.

*Table V.* Voting shares

Partner	Net loss (CRA)	Net loss (alternative)	Voting share
TCI	(\$0.99)	(\$3.07)	37.63%
Comcast	(\$0.45)	(\$1.02)	10.37%
Cox	(\$0.30)	(\$0.73)	9.56%
US West	(\$0.04)	(\$0.80)	9.92%
TW	\$2.12	\$1.80	30.27%
GE	\$0.17	\$0.16	2.25%
News Corp.	\$0.47	\$0.53	0.00%
Primestar	\$0.51	(\$3.66)	100.00%

corporate governance debate had the case gone to trial. Among these complications are (1) the role of News Corp., assumed to be a non-voting partner; (2) the nature of the proposed board representation of the partners generally, and the role of the independent directors specifically; and (3) the limitations on the power of the partners that are inherent in the corporate governance rules, including supramajority provisions.

Under the assumptions of the analysis in Table V, all cable partners other than Time Warner are actually worse off on the cable side of their business after the acquisition if Primestar competes as if it had no cable interest, because it would lose more from the cannibalization effect than it would gain in added programming revenues. Unlike the illustrative numbers presented by CRA, however, the net positive gain to the "programmers" (TW, GE, News Corp.) is no longer enough to offset the losses suffered by the "cable" companies (TCI, Comcast, Cox, and US West). As a result the cable companies (which control over 67% of the vote) would have a strong incentive to make Primestar compete less aggressively against their cable interests, and the programmers would not have "enough" surplus left over to offset the cable companies' extra losses.

Whatever the distribution of cannibalization losses and programming gains among the Primestar entities, it seems reasonable to ask whether the assumption of joint profit maximization should be replaced by the assumption that each partner will vote according to its own individual financial interests. Since interests vary, the effect of the acquisition depends on how votes are weighted. This, in turn, depends on what governance structure is proposed, and how that governance structure will limit the power of the partners involved in the transaction. For example, the analysis of the profitability of alternative competitive strategies that I am putting forward takes the proposed ownership structure of Primestar into account in predicting the decisions of the Primestar board of directors, assuming that each director votes in

his or her individual partner's best interest.<sup>26</sup> To illustrate, under either the CRA assumptions or my alternative assumptions, when facing a decision that affected the cable business – e.g., to advertise on cable channels – TCI, Comcast, Cox, and US West could be expected to vote against such a proposal. Because these entities have over 67% of the voting shares of Primestar, they could be expected to successfully vote it down.

Assuming that these entities are acting in their self-interest, even after accounting for Time Warner's divergent interests, Primestar would arguably behave as though it is fully controlled by the cable companies under my assumptions.<sup>27</sup> Exceptions could arise in cases where the board must consider strategic issues that affect individual cable partners differently, or where supramajority approval is required. For example, provisions requiring supramajority approval to dissolve the company, authorize a merger, or amend the charter or by-laws could give particular partners the power to block certain strategic decisions. In this case, the cable companies could form a coalition that would enter into a logrolling agreement – perhaps by trading a promise to support cable advertising now, with an understanding that Time Warner will support a pro-cable vote later. In this case the competitive strategy that maximized the total gain to the Primestar entity could be successful. While clearly not out of the question, the ability to logroll in this manner is likely to be limited, not only because of the fiduciary obligations of the board members, but also by the difficulty of entering into agreements that would bind a board member's future behavior.<sup>28</sup>

The issues raised by the possibility of partners entering into a coalition and making decisions that create binding obligations on the board in the future is made even more complex by the presence of News Corp. Under the proposed acquisition News Corp. would have no voting shares and no board representation. However, News Corp. (with its 20% non-voting stake) would have a strong financial interest in the decisions of the board, and would therefore have an interest in affecting voting outcomes even without board representation.

<sup>26</sup> The approach taken here presumes that the "median voter" will determine board outcomes. It is appropriate to ask, as the parties did, why the partners would have agreed to a governance rule that gave real power to the median voter. One answer is that the corporate governance rules limit that power.

<sup>27</sup> Once again this assumption skirts issues surrounding the fiduciary obligations of the outside members of the Board. Given that the vast majority of Primestar's shareholders have substantial investments in cable operations, it is unclear to what extent a Primestar director can take these interests into account consistent with their fiduciary obligations. Moreover, existing case law pertaining to fiduciary duties suggests that corporate law provides a limited check on potentially anticompetitive strategies enacted by Primestar's board. Absent blatant self-dealing or fraud, decisions of the board are not likely to be overturned for any alleged breach of a corporate fiduciary duty.

<sup>28</sup> I have de-emphasized the possibility of immediate arrangements for side payments among the parties, not only because of legal restrictions, but because such payments would be difficult to negotiate (the benefits and costs of a marketing or other strategic decision would flow in a complex way to each of the individual Primestar partners.)

It should be clear that a complete analysis of the potential anticompetitive harm resulting from the hypothetical Primestar acquisition must take into account the corporate governance structure of the acquiring entity. To be complete such an analysis should involve a hard look at the incentives of individual board members, given not only their legal obligations, but also their likely behavior. These issues are difficult ones, but they are no more difficult in character than the complex issues involved in any merger analysis. Building on literature on the behavior of boards under varying corporate governance structures, perhaps with an assist from the literature on coalition formation in the theory of cooperative games, I believe that we can make sound predictions.

We know, for example, that there is a relationship between the equity stake held by management and the performance of that management. On the one hand, a greater stake increases management's incentive to work to increase the shareholder value of equity. On the other hand, the control that accompanies that ownership makes it easier for opportunistic managers to avoid being replaced. It is an empirical issue as to whether the former *incentive* effect outweighs the latter *entrenchment* effect: current evidence suggests that the incentive effect dominates when initial ownership is quite low or relatively high, and that the entrenchment may otherwise be dominant, depending on the size of the firm.<sup>29</sup> Relating this to the Primestar acquisition, the entrenchment effect of letting cable companies have an increased ownership stake in the acquired entity arises when cable companies exercise that control against and the interests of other Primestar shareholders, and more importantly for this analysis, to the detriment of consumers.

Another strand of the corporate governance literature raises questions as to the effectiveness of outside board members in checking the agency problems that do arise when managers act in their own self-interest, rather than the interests of shareholders.<sup>30</sup> If inside board members have effective control (despite the presence of disinterested outside board members), the unilateral effects just described will be if anything magnified. Further, any attempt to remedy the unilateral effects problem by adding outside board members is unlikely to be successful.

Under the alternative assumptions that I have made, predictions of post-acquisition competitive behavior are not significantly altered by introducing corporate governance issues. However, the issues could become substantially more complex if a new Primestar entity were to be formed with a different distribution of voting interests. Suppose, hypothetically, that the restructured entity consisted

<sup>29</sup> Alexander and Cohen (forthcoming) describe incentive and entrenchment effects in the context of corporate crime. Morok, Shleifer and Vishny (1988) find that management's contribution to firm value as measured by Tobin's Q first increases, then declines, and then increases again as stock owner of the board of directors increases (the turning points are 5 percent and 25 percent). Holderness, Kroszner and Sheehan (1996) find a similar pattern. See also McConnell and Servaes (1990) and Kole (1995).

<sup>30</sup> See, for example, Baysinger and Butler (1985), who report finding a weak relationship between outsider involvement and firm value. See also the studies by Brickley and James (1987) and Weisbach (1988) and the literature surveys for Baghat and Black (1998) and Lin (1996).

of 49% voting cable interests rather than 67%. Could that entity argue that there would be no anticompetitive harm because a coalition of cable interests would not be controlling? Such a claim would be unpersuasive in my view because it reflects a simplistic understanding of the incentive and entrenchment effects of stock ownership and rules out the possibility of logrolling and coalition formation.

Logrolling has long been the subject of analysis among political scientists, but it is only relatively recently that social scientists have begun to focus on the use of power in voting games. An analysis of power in cooperative voting games could provide some useful predictions as to the likelihood that logrolling will occur and that logrolling coalitions will be sustained over time.<sup>31</sup>

My analysis has assumed that the cable interests for which the cannibalization losses outweigh the gains control more than 50% of the votes, and that cable interests as a whole are approximately 67%. How does the analysis change when there is a 33% cable interest? or 20%? More generally, at what level of equity does the possibility of anticompetitive harm become *de minimis* (or sufficiently small so as to be outweighed by the efficiency gains associated with the acquisition)? Unfortunately, these are only some of the difficult questions that remain unanswered and await further analysis.

## V. Concluding Comments

I have chosen to focus my analysis on the acquisition by Primestar of the direct broadcast satellite assets of News Corp./MCI. While the analysis of the proposed acquisition is significant in its own right, it is particularly relevant because of the particular unilateral effects analysis that played a significant role in the Division's analysis of possible anticompetitive harm.

The unilateral effects analysis is complicated by two factors. First, the case involves potential competition, which translates into a unilateral effects analysis that compares two future states of the world. I have suggested that the uncertainties associated with a prediction of the difference between two future states need not be significantly greater than the uncertainties associated with a more traditional unilateral effects analysis. Second, the fact that the Primestar partnership involves a number of entities with divergent financial interests puts corporate governance issues into the center of any analysis of unilateral effects. I hope that my preliminary thoughts on this issue will encourage others to pursue them more deeply. I have no doubt that similar or related governance issues will arise again and again in the future. I also have no doubt that the staff of the Economic Analysis Group will be more than able to evaluate them when they do appear.

<sup>31</sup> For an analysis of power in voting games, see, for example, Banzhaf (1965, 1966). Power in cooperative games is treated in Straffin (1994). For a general review of the use of game theory in evaluating these and other game-theoretical issues in the law, see Kornhauser and Benoit (forthcoming).



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