**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, DC 20554**

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| In the Matter of: | ) | |
| | ) | |
| General Motors Corporation, Hughes | ) | |
| Electronics Corporation, and the | ) | |
| News Corporation Limited | ) | MB Docket No. 03-124 |
| Application To Transfer Control Of FCC | ) | |
| Authorizations And Licenses Held By | ) | |
| Hughes Electronics Corporation | ) | |
| To The News Corporation Limited | ) | |

# A FURTHER ECONOMIC ANALYSIS OF THE NEWS CORP. TAKEOVER OF DIRECTV

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Dated: August 4, 2003

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## A FURTHER ECONOMIC ANALYSIS OF THE NEWS CORP. TAKEOVER OF DIRECTV

My name is William P. Rogerson. I am a professor of economics at Northwestern University. I prepared an analysis of the transaction in this proceeding for the Joint Cable Commenters.[1] Along with their Reply Comments,[2] the parties to the transaction have submitted economic studies by Lexecon and by Charles River Associates.[3] I have reviewed those studies carefully. In my view they do not refute the concerns I expressed regarding the transaction.

Everything in this Analysis is derivable from the Public Version of the CRA Report. To

[1] William P. Rogerson, *An Economic Analysis of the Competitive Effects of the Takeover of DirecTV by News. Corp.*, MB Docket No. 03-124, June 16, 2003 ("*Rogerson Affidavit").*

[2] *Opposition to Petitions to Deny and Reply Comments*, MB Docket No 03-124, July 1, 2003 ("*News Corp. Reply Comments*").

[3] Dennis W. Carlton, Janice H. Halpern and Gustavo E. Bamburger, Lexecon Inc., *Economic Analysis of the News Corporation/DirecTV Transaction*, July 1, 2003, "*Lexecon Report,*" and Steven C. Salop, Carl Shapiro, David Majerus, Serge Moresi, and E. Jane Murdoch, Charles River Associates, *News Corporation's Partial Acquisition of DirecTV: Economic Analysis of Vertical Foreclosure Claims*, July 1, 2003, "*CRA Report*."

reaffirm that conclusion, I provided the public version of the CRA Report, my first Affidavit, and a complete draft of this Analysis to a reputable, independent economist. He was able to replicate, from the public versions, the calculations in this Analysis that refer to the CRA report.

## INTRODUCTION

In my initial Affidavit, I concluded that the acquisition of a controlling stake in DirecTV by News Corp. could provide News Corp both the ability and the incentive to raise prices to rival MVPDs for its "must have" programming – its regional sports networks and its owned-and-operated television broadcast stations.[4] The acquisition of DirecTV will increase News Corp.'s bargaining power and negotiating leverage and will lead to higher prices for consumers, particularly in less dense regions of the country served by small to medium sized cable systems.

In large part, the studies of News Corp.'s economists are focused upon demonstrating that it is not economically rational for News Corp to withhold programming permanently from rival MVPDs to increase DirecTV's attractiveness and market share. Lexecon and CRA ignore and do not account for the more likely scenario – that News Corp., armed with increased bargaining power, has increased ability to raise prices to all distributors, and therefore to consumers, through the actual or threatened withholding of programming. Furthermore, Lexecon and CRA ignore the fact that engaging in or threatening to engage in temporary withdrawals of programming during pricing disputes may provide an even more powerful lever for News Corp. than the threat of permanently withdrawing programming.

However, the quantitative exercise that CRA undertook does provide the components that permit me to demonstrate that this transaction will increase News Corp.'s ability to bargain with

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[4] *See Rogerson Affidavit* at 17 ("News Corp will be able to charge higher prices because the merger will increase its bargaining power with MVPDs.").

rival MVPDs for higher programming prices. Even for the case of permanent withdrawals considered by CRA, the profits that DirecTV would earn if News Corp. withdrew programming from its rivals would offset a significant share of News Corp's losses. This is sufficient to significantly increase the credibility of News Corp.'s threat to withdraw programming. Furthermore, the CRA math can also be used to calculate the profitability of temporary withdrawals of programming during price disputes. I calculate that if News Corp. temporarily withholds an RSN or a broadcast station from a targeted MPVD, it economically breaks even if less than one percent of the MVPD's subscribers migrate to DirecTV. Once one additionally realizes that the purpose of the temporary withholding of programming would be also, if not primarily, to increase prices across a national base of over ninety million MPVD homes, it becomes clear that, contrary to the parties' economic reports, News Corp. has every incentive to engage in such conduct.

My affidavit is organized as follows:

First, I briefly restate the economic theory outlined in my initial affidavit explaining why the transaction will provide News Corp. with the *ability* to bargain for higher programming prices and carefully re-explain why this is a different theory than the standard raising rivals' costs theory that is the sole focus of News Corp.'s economic experts. In Appendix A, I present a standard analysis of the bargaining problem between a seller and buyer and explain how it can be interpreted to apply to the bargaining problem between News Corp. and a rival MVPD.

Next, I consider the arguments made by News Corp.'s economic experts and explain the flaws and problems with each of them. In particular, I explain why the merger will increase News Corp.'s ability to bargain for higher prices even if it does not turn out to be profitable for

News Corp. to completely and permanently withhold programming. I use CRA's own non-confidential data and calculations to quantitatively assess the impact of the merger and show that the impact will be significant. I address several remaining points before making a brief conclusion.

## I. THIS TRANSACTION INCREASES NEWS CORP.'S *ABILITY* TO BARGAIN FOR HIGHER PROGRAMMING PRICES

In my initial Affidavit analyzing the competitive effects of the takeover of DirecTV by News Corp., I identified two different economic theories of harm that should be considered. First, I explained how the transaction would increase News Corp.'s ability to bargain for higher programming prices in its negotiations with MVPDs and therefore increase its *ability* to raise prices for programming. Second, following a more standard "raising rivals' costs" model,[5] I explained how this transaction would increase News Corp.'s *incentive* to raise prices because News Corp. would internalize some of the benefit that DirecTV would receive were News Corp. to raise programming prices to its rivals. News Corp. and its economists address the second theory and ignore the first.

Standard "raising rivals' costs" models are based on the assumption that the upstream input supplier has *all of the pricing power* in the input market. In other words, the upstream input supplier is able to make a take-it-or-leave-it price offer to downstream users. As a result, the upstream input supplier is able to charge any price it wishes – subject only to the constraint

[5] *See, e.g.,* Michael H. Riordan and Steven Salop, *Evaluating Vertical Mergers: A Post-Chicago Approach*, 63 Antitrust L.J. 513(1995); Thomas G. Krattenmaker and Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 Yale L.J. 209 (1986); and Janusz A. Ordover, Garth Saloner, and Steven C. Salop, *Equilibrium Vertical Foreclosure,* 80 American Economic Review (1990).

that the downstream firm would be better off accepting the price than doing without the product entirely. The "raising rivals' costs" literature calculates the optimal price for the upstream input supplier to announce in this situation and then investigates how vertical integration will affect this optimal price. CRA present an algebraic example employing this type of analysis in Appendix B of its report.

Although the foregoing assumptions may be relatively correct in other markets, when I began to study this particular transaction it became clear to me that such a model could not capture the essential concern being expressed by many market participants here. In particular, market observers believe this transaction will increase News Corp.'s bargaining power and thus give it the *ability* to charge higher prices.[6]

In my initial Affidavit I showed that the validity of these concerns could be supported by standard economic reasoning. In particular, when one assumes that the input price is determined by bilateral bargaining between the upstream and downstream firm, and uses standard economic models of bargaining to explain how the price that the upstream firm is able to charge the downstream firm is determined, there is a fairly simple, intuitive and robust economic reason to expect that one effect of a vertical merger will be to allow the upstream firm to increase the price it charges to rival downstream firms.[7] The basic idea is simply that when News Corp. is vertically integrated with DirecTV, its threat to withhold programming from rival MVPDs will be more credible because the loss in programming revenue that News Corp. would experience

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[6] *See Rogerson Affidavit* at 23-24.

[7] As in the standard raising rival's cost literature, a vertical merger also generally has a reduced double marginalization effect which tends to reduce prices to consumers and examples can be created where either effect dominates. I argue *infra* Section III.B that neither CRA nor Lexecon have demonstrated that the reduced double marginalization effect is likely to outweigh

from withholding the programming will be offset to some extent by the increase in profits that DirecTV would earn when its rivals no longer offer the programming.[8]

To explain the bargaining problem between News Corp. and a rival MVPD, I present a standard analysis of the bargaining problem between a seller and buyer in Appendix A of this paper. Appendix A considers a fairly general bargaining framework that allows for outcomes intermediate between the two polar extremes where either the seller is allowed to make a take-it-or-leave-it offer to the buyer or the buyer is allowed to make a take-it-or-leave-it offer to the seller. In every case -- except for the polar extreme case where it is assumed that the seller is able to make a take-it-or-leave-it offer to the buyer (which is of course the case considered by the raising rivals' costs literature) -- the seller is able to negotiate a higher price when his "threat point profit" increases.

The expert reports that News Corp. has commissioned are seriously incomplete because they consider *only* the second standard "raising rivals' costs" theory of harm and are *completely silent* on the first theory of harm that I advanced. News Corp.'s experts focus exclusively on News Corp.'s *incentive* to raise prices. As best I can tell, they do not even acknowledge that they are aware that I advance a completely separate theory explaining why this transaction has the potential to raise prices. They have simply failed to dispute that controlling DirecTV will increase News Corp.'s bargaining power and its concomitant *ability* to bargain for higher prices.

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the competitive harms in the case of this particular merger.

[8] Standard economic models of bilateral bargaining (*see* for example, John C. Harsanyi, *Bargaining* in The New Palgrave Game Theory, W.W. Norton (1989); Alvin Roth, *Axiomatic Models of Bargaining*, Springer-Verlag (1979) predict that an agent will do better in bargaining when its "threat point profit" (*i.e.*, the profit that the agent would earn if an agreement is not reached) is higher. *See also* Appendix A of this Affidavit.

As I will explain below, this is important because the central fact that CRA attempt to establish in their quantitative assessment of the potential for this merger to harm consumers – that News Corp. will not find it profitable to permanently withhold programming from rival MPVDs after the merger – is completely consistent with the possibility that the transaction significantly increases News Corp.'s ability to bargain for higher prices. The transaction increases News Corp.'s bargaining power to the extent that News Corp.'s losses from withdrawing programming from rival MVPDs are partially offset by DirecTV's increased profits. Therefore, the merger will have a significant effect on News Corp.'s bargaining power to the extent that DirecTV's profits significantly offset News Corp.'s losses and it is NOT necessary for DirecTV's profits to be greater than News Corp.'s losses. I explain below why CRA's own data and calculations suggest that DirecTV's profits will offset a significant share of News Corp.'s losses even if they do not completely offset them. Furthermore, the threat of temporary withdrawals of programming during disputes over price is an independent source of bargaining power and I will explain why CRA's own data and calculations suggest that the merger will have an even more dramatic effect on the profitability of temporary withdrawals of programming.

## II. THE TRANSACTION WILL INCREASE NEWS CORP.'S INCENTIVE TO RAISE PRICES AND ITS ABILITY TO BARGAIN FOR HIGHER PRICES EVEN IF COMPLETE AND PERMANMENT FORECLOSURE IS NOT PROFITABLE

CRA considers a hypothetical case in which News Corp. permanently withholds programming from a rival MVPD.[9] This causes some subscribers to shift from the rival MVPD

[9] *See generally CRA Report* at Section III.

to DirecTV. CRA then calculates the size of demand shift that would be necessary in order for withholding to be profitable for News Corp. and argues that this is larger than would be plausible. Below, I review these non-confidential calculations and explain why there is a serious conceptual error with them. When this error is corrected, the size of the required demand shift is much smaller. More importantly, I will explain why the most significant harms associated with this transaction *in no way depend* upon it being profitable for News Corp. to completely and permanently withhold programming from rival MVPDs.

### A. An Overview Of CRA's Calculations

CRA presents calculations of the profitability of withholding programming both for the case of regional sports programming and the case of broadcast signals of local Fox owned and operated stations ("O&Os"). Since the calculations are similar and the same qualitative points apply to both,[10] I will only explicitly consider the regional sports calculations in the main body of this affidavit. I present the calculations for the case of local broadcast signals of Fox O&O stations in Appendix B below.

CRA attempts to determine whether or not News Corp. would find it profitable to withhold regional sports programming by comparing the losses News Corp. would suffer from reduced programming sales to the gains News Corp. would experience as the claimant on 34 percent of DirecTV's profits. CRA embeds the profit margin of News Corp on regional sports programming and the profit margin of DirecTV on satellite subscription service in its

[10] Notably, CRA makes the same error in both calculations and the size of the demand shift required for a permanent withdrawal of programming to be profitable is significantly smaller when this error is corrected. Furthermore, in both cases the estimated demand shift required to profitably foreclose on a temporary basis is nowhere near the levels CRA posits for permanent withdrawals.

calculations. Although CRA does not report these profit margins in its public submission, the actual margins are not important for our purposes here. The variable “x” can easily be used to denote the profit margin per subscriber for News Corp. on regional sports programming and the variable “y” to denote the profit margin per subscriber on satellite subscription service. Relying on these publicly disclosed calculations, a simple algebraic relationship between CRA’s reported answer and the ratio of profit margins (y/x) can be derived. The ratio of y/x used by CRA can be calculated from publicly available data, and it will be useful in my subsequent analysis.

CRA assumes that DirecTV has a market share of .13 and that its rivals have a market share of .87.[11] It lets the variable “s*” denote the share of total customers in the market that would decide to switch from rival MVPDs to DirecTV if News Corp. withheld it regional sports programming from them. If we let N denote the total number of MVPD subscribers in the market, then CRA defines News Corp.’s losses in programming revenue from rival MVPDs to be

(1) $$L = x \{.87\ N\}.$$ [12]

This is because, when News Corp withholds programming from rival MVPDs, its loss is x dollars per subscriber and there are .87N subscribers. Therefore News Corp.’s loss is the product of these two terms. CRA defines News Corp.’s gain in profit to be

(2) $$G = (x + .34y)\ \{ s^*\ N\}.$$ [13]

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11 *CRA Report* at ¶ 50.

12 *Id.*

13 *Id.*

This is because it gains x dollars of programming profit and 34 percent of the y dollars on satellite subscription profit for every subscriber that switches and there are s*N subscribers that switch. CRA then asserts that News Corp. will decide to withhold programming if and only if the gains G are greater than the losses, L. That is, it asserts that News Corp. will withhold programming if and only if

$$(3) \qquad (x + .34y)\,\{s^*\, N\} \geq x\,\{.87\, N\}.$$[14]

Simple algebra shows that condition (3) can be rewritten as

$$(4) \qquad s^* \geq \; .87 \;/\; \{\, 1 + .34(y/x)\}.$$

CRA reports that the RHS of (4) is equal to .17.[15] This means that, in order for News Corp. to withhold programming, it must be the case that at least 17 percent of subscribers would switch from a rival MVPD to DirecTV. Since DirecTV currently serves 13 percent of all subscribers this means that DirecTV's market share would have to increase from 13 percent to 30 percent.

For future reference, note that equation (4) shows that the minimum required value of s* is an invertible function of the ratio of profit margins, y/x. Therefore, we can invert equation (4) to determine the ratio of y/x relied upon by CRA in its non-confidential calculations. This

[14] *Id.* As I will explain below, this assertion is incorrect. However, for the moment I am merely reporting the calculations that CRA performed without critiquing them.

[15] *Id.*

calculation shows that the ratio of y/x relied upon by CRA is 12.11. That is, according to the public calculations performed by CRA, DirecTV's profit margin per subscriber on satellite subscription service is 12.11 times as large as News Corp.'s profit margin per subscriber on regional sports programming. For example, if it was the case that News Corp. earned $1 per customer on its regional sports programming this would mean that DirecTV earned $12.11 per customer on its satellite subscription service.

This is an extraordinarily large ratio. Given that the profit margin that DirecTV earns per subscriber is apparently so much dramatically larger than the profit margin that News Corp. earns per subscriber according to the CRA analysis, it seems intuitive that News Corp. would have a large incentive to withhold programming since the profit margin it gains on subscribers that switch to DirecTV is so much larger than the profit margin it loses on subscribers that do not switch. However, a careful review of the CRA algebra shows that the factor that keeps the incentive to withhold relatively low is the CRA assumption that News Corp. will only consider 34 percent of the profit margin on new satellite subscribers in determining whether or not to withhold programming. I will now turn to this assumption and explain why it is fundamentally incorrect.

### B. News Corp. And The Outside Shareholders of DirecTV Can Be Expected To Coordinate Their Actions and Maximize Their Joint Profits

CRA implicitly assumes that News Corp. and DirecTV will not be able to coordinate their actions to maximize joint profits. Because of this assumption, CRA significantly underestimates the extent to which foreclosure will occur after News Corp. acquires control of DirecTV.

The best way to explain my point is through an example:

Suppose that News Corp. vertically integrates with DirecTV by purchasing 34 percent of DirecTV. Now consider the following scenario. Suppose that News Corp. would lose $4 million on programming if it withheld programming from rival MVPDs. Suppose that DirecTV would gain $10 million dollars due to an increase in its subscription revenue. Therefore, the joint profits of News Corp. and DirecTV would increase by $6 million if News Corp. withheld programming from DirecTV's rivals.

The CRA formulation I describe above predicts that News Corp. will NOT withhold programming from DirecTV in this scenario. The reasoning is fairly simple: News Corp. will compare its 34 percent share of the $10 million gain -- which amounts to $3.4 million -- with its 100 percent share of the $4 million dollar loss and conclude that withholding programming is unprofitable and simply decide not to withhold programming without any further discussions, consultations or attempts to coordinate actions with DirecTV. In particular, the CRA formulation assumes that *even though* News Corp. will be a controlling shareholder of DirecTV, and *even though* News Corp will presumably work closely with DirecTV in myriads of ways to achieve all of the claimed efficiencies that News Corp. touts so highly, News Corp. and the representatives of the outside shareholders of DirecTV will be completely unable to coordinate their activities to achieve a joint profit gain of $6 million.

I think this assumption is completely untenable. It seems much more likely to me that two companies that will work as closely and harmoniously together as News Corp. predicts that it and DirecTV will do after it acquires control of DirecTV, will manifestly be able to coordinate their activities to achieve outcomes that maximize their joint profits. [16]

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[16] I would like to stress the fact that I am NOT suggesting in any way that News Corp. would take advantage of the outside shareholders of DirecTV -- or in fact do anything to the outside

Following the above logic, the correct way to predict when News Corp. will withhold programming from rival MVPDs is that News Corp. will withhold programming from rival MVPDs when this will increase the joint profits of itself and DirecTV. Therefore the appropriate measure of the gains from withholding in equation (2) above is now replaced by

$$(5) \qquad G = (x + y) \{ s^* N\}.$$

The losses are still the same. Therefore the condition describing when gains are greater than losses in equation (3) is now replaced by

$$(6) \qquad (x + y) \{ s^* N\} \geq x \{.87 N\}.$$

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shareholders that might be viewed as unreasonable or unethical – or that a Hughes board of directors that adequately represented the interests of the outside shareholders would somehow be opposed to this behavior. In fact, quite the opposite is true. A board of directors that adequately represented the interests of the outside shareholders would be delighted to participate in the behavior that I predict would happen. Consider the hypothetical case I describe above where News Corp. would lose $4 million in programming profit but DirecTV would gain $10 million in subscription profit if News Corp. withheld programming. CRA is suggesting that News Corp. would simply not withhold programming because News Corp.'s own share of the subscription profits of $3.4 million would be less than the forgone programming profits of $4 million. Therefore, the outside shareholders of DirecTV would be forced to forego $6 million dollars.

I am suggesting , however, that News Corp. and DirecTV would simply strike a bargain that maximized their joint profits and then distribute the gains so that everyone would be better off. For example, suppose that DirecTV agreed to pay News Corp. an extra fee of $4 million dollars to reflect the extra value of the exclusive that is created when News Corp withdraws programming from its rivals'. Then, News Corp.'s net profit from withholding would be $2 million and the outside shareholders net profit from withholding would be $4 million. (After the $4 million payment from DirecTV to News Corp., News Corp.'s net profit from withholding would be zero. DirecTV's net profit would be $6 million. News Corp.'s share of this $6 million

which can be rewritten as

(7) $$s^* \geq .87 / \{1 + (y/x)\}.$$

As shown above, the value of y/x in the CRA data is 12.11. Substitution of this value into equation (7) yields

(8) $$s^* \geq .066.$$

That is, the corrected calculation shows that, in the hypothetical situation considered by CRA, News Corp. will withhold programming from rival MVPDs if by so doing it could increase DirecTV's market share by about 6.6 percentage points. Therefore, according to the corrected CRA calculations, News Corp. will withhold programming if by so doing it could increase it market share from 13 percent to about 20.6 percent.

While this is still not a trivially small shift, it is one third the size of the 17 percent shift that CRA has announced would be necessary for complete and permanent foreclosure to be profitable for News Corp. Moreover, I believe that, by focusing on whether or not permanent withdrawals of programming will profitable after the takeover, CRA is missing the critical point I made in my initial Affidavit.[17]

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would be $2 million, and the outside shareholders' share would be $4 million.) Therefore, both News Corp and the outside shareholders of DirecTV would be made better off.

[17] I agree with CRA that the very limited information available from public reports suggests that the demand shifts in response to temporary withdrawals of programming associated with price disputes may have been smaller than this. The parties themselves publicly disclose that

## C. The Transaction Will Harm Consumers Without Complete And Permanent Withdrawals Of Programming

Fundamentally, the entire issue of whether or not it would be profitable for News Corp. to engage in a complete and permanent withdrawal of programming is a red herring. While I agree this is a *sufficient* condition for the transaction to be harmful to consumers, it is obviously not a *necessary* condition.

There are three important reasons why the proposed transaction is likely to harm consumers even in regions where it turns out not to be profitable for News Corp. to completely and permanently withhold programming. First, the deal is likely to significantly increase News Corp.'s bargaining power even if complete and permanent foreclosure turns out not to be profitable *ex post* and the resulting price increases will harm consumers. Second, even if permanent program withdrawals are not profitable, it is much more likely that temporary withdrawals will be profitable. An increased level of temporary withdrawals would also harm consumers, and the threat of temporary withdrawals would further increase News Corp.'s ability to negotiate higher prices. Third, it is likely that smaller price rises short of the levels that would

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DirecTV gained no more than "a few percentage points" when the YES network was unavailable on Cablevision. *News Corp. Reply* at p.29. However, it is important to note that all of these previous "natural experiments" involved withdrawals of programming that consumers expected to be temporary. We would expect the size of shifts in response to withdrawals that consumers expected to be permanent to be larger than this. Furthermore, in less dense areas served by smaller cable systems where the business case for multiple MVPDs is much weaker, there is a potential that News Corp. might either induce incumbent cable systems to exit or at least induce them not to invest in further upgrades. In this case it seems likely that News Corp. would have no trouble attracting at least an additional 6.6% of the market. While it is true that the existing infrastructure of cable systems is largely a sunk cost, it is also the case that many smaller cable systems have not yet fully invested in digital upgrades and it is certainly possible that a significant deterioration in their business prospects brought on by the withdrawal of important programming might induce them to forgo these investments. *See generally* Monica Hogan, *Pagon: Pity Cable's Rural Ranks,* Multichannel News, June 4, 2001, at 36.

cause rival MVPDs to cease purchasing the programming altogether are likely to be more profitable than complete foreclosure and CRA's calculations do not directly address whether such less extreme strategies would be profitable. I will now consider each of these three points in turn.

The economic explanation of why the transaction will increase News Corp.'s ability to bargain for higher programming prices is that the profits DirecTV will earn when News Corp. withdraws programming from its rivals will offset a fraction of the losses that News Corp. would suffer from withdrawing programming. To the extent that these losses are reduced, News Corp.'s threat to withdraw programming will become more credible and this will allow it to negotiate a higher price. Therefore, taking over DirecTV is likely to have a significant effect on the price that News Corp. is able to negotiate with other MVPDs so long as DirecTV's profits -- when News Corp. forecloses its rivals -- significantly offset News Corp.'s losses in programming revenues. While the corrected calculations for the CRA model I presented above may not demonstrate that DirecTV's profits from foreclosure are likely to be *greater* than News Corp.'s programming losses, I think it is fair to say that they do demonstrate that DirecTV's profits are at least likely to *significantly offset* News Corp.'s programming losses.

Moreover, as I stressed in my initial Affidavit, after it acquires control of DirecTV, News Corp. might find it profitable to temporarily withdraw programming during negotiations with MVPDs *even if* it would not be profitable for it to permanently withdraw programming.[18] Such temporary withdrawals would have a minuscule effect on News Corp.'s long-run revenues because the loss of subscription and advertising revenues is only temporary, but they would have

[18] *See Rogerson Affidavit*, section III.B.

a lasting effect on subscribership at the MVPD level, because customers that switch during a temporary withdrawal of programming are unlikely to switch back after the programming is restored.[19] The CRA model of course only calculates the effect of permanent withdrawals of programming.

It is straightforward to adapt the CRA model to assess the profitability of temporary withdrawals in programming. I will consider exactly the same situation as before except that I will assume that the withdrawal in programming lasts for only three months while it produces a permanent shift in subscribers. Just as before, I will assume that DirecTV has a 13 percent market share and its rivals have an 87 percent market share. Continue to let x denote the profit margin that News Corp. earns per subscriber on programming and let y denote the profit margin that DirecTV earns on satellite subscriptions. Just as before, I will use the CRA value of 12.11 for the ratio of y to x. Finally, I will assume that News Corp. withdraws programming from the rival MVPDs for a period of three months and that this causes a permanent shift of the fraction s* of the total number of subscribers from the rival MVPDs to DirecTV. Recall than N denotes the total number of subscribers in the market so that s*N is the total number of customers that are induced to shift.

Since the impacts on cash flows will now vary over time, it will be necessary to evaluate the profitability of this action by explicitly describing cash flows on a period-by-period basis and then calculating their discounted present value. For the purposes of this calculation I will use

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[19] Switching providers generally requires a visit by a service representative to the home and/or purchase and installation of new equipment. This can be costly and inconvenient. The common industry practice of subsidizing equipment and installation costs suggests that industry participants also recognize that there is some subscriber inertia and that, once a customer is induced to switch, the customer is likely to stay.

periods of 3 months (so that the withdrawal of programming occurs in the first period). I use a per period cost of capital of 3.75 percent to discount future cash flows.[20]

Now I will calculate the losses and gains just as before. News Corp.'s loss of programming revenue that it earns from the rival MVPDs is equal to .87xN in the first period (since it loses .87N subscribers and earns x dollars on each of them) and s*xN is all subsequent periods (since this is the permanent loss of subscribers.) Therefore the discounted expected value of losses is given by

$$(9) \qquad L = .87xN + s^*xN \{ (1/1.0375) + (1/1.0375)^2 + (1/1.0375)^3 + \ldots \}.$$

The term in curly brackets is the present discounted value of receiving one dollar per period beginning a period from the present and is equal to 26.67 Substitution of 26.67 for the bracketed term in (9) yields

$$(10) \qquad L = .87xN + 26.67s^*xN.$$

News Corp.'s gain in programming revenue from DirecTV is of course s*N every period. In addition, DirecTV receives a permanent gain of ys*N in subscription revenue. Therefore the joint gain in profit is[21]

[20] This corresponds to an annual cost of capital of 15%. It is easy to verify that my basic qualitative conclusions will hold for any reasonable assumption about the cost of capital.

[21] For the reasons I discussed *supra*, I believe that is appropriate to include all of DirecTV's increased profits from subscriptions when determining whether or not News Corp. will have an incentive to withhold programming.

(11) $G = ys^*N + xs^*N \{ 1 + (1/1.0375) + (1/1.0375)^2 + (1/1.0375)^3 + \ldots \}$

The term in curly brackets is equal to the present discounted value of receiving one dollar per year beginning immediately and is equal to 27.67. Substitution of 27.67 for the bracketed term in equation (11) yields

(12) $G = 27.67 (x+y)s^*N.$

Foreclosure will be profitable if and only if the gains from foreclosure exceed the losses. Therefore foreclosure will be profitable if and only if

(13) $27.67 (x+y)s^*N \geq .87xN + 26.67s^*xN$

which can be rewritten as

(14) $s^* \geq .87 / \{1 + 27.67(y/x)\}.$

Substitution of the CRA value of 12.11 for y/x in equation (14) yields

(15) $s^* \geq .0026$

This means that a temporary withdrawal of programming would be jointly profitable for News Corp. and DirecTV if the temporary withdrawal would cause a permanent shift of about *one quarter of one percent* of the subscribers in the market. Although there is very limited evidence, it does not seem improbable to expect demand shifts of around this share of the market in response to temporary withdrawals of "must have" programming.

The fact that temporary withdrawals of programming will likely be profitable for News Corp. and DirecTV after the transaction means that the threat of temporary withdrawals will further increase News Corp.'s bargaining power and thereby allow it to raise programming prices even more. Furthermore, as I stated in my previous affidavit, it seems likely to me that the transaction will actually increase the number of temporary withdrawals engaged in by News Corp. That is, it may well be that after taking over DirecTV, News Corp. will be "looking for a fight" in the sense that it will actually be able to increase its profits by manufacturing disputes that would create the pretext for a temporary withdrawal of service. This of course will create additional harms for subscribers that are affected by these disruptions in service.

Finally, the proposed transaction is likely to harm consumers even in regions where it turns out not to be profitable for News Corp. to completely and permanently withhold programming because it may still be profitable for News Corp. to institute smaller price increases short of the levels that would cause MVPDs to cease purchasing the programming. Such smaller increases in price would potentially be more profitable because News Corp. would also earn additional profit on subscribers that do not switch to DirecTV. Most critics of this transaction, including myself, have focused primarily on the harm that News Corp. would raise programming prices after the takeover, rather than withdraw programming completely, because

this is the most likely harm in most regions of the country.[22] News Corp.'s economists have responded by focusing almost all of their attention on the less likely scenario that News Corp. will completely withhold programming.

## III. REMAINING ARGUMENTS BY NEWS CORP. AND ITS ECONOMISTS CARRY LITTLE WEIGHT

News Corp. and its economists make several additional attempts to explain why the Commission should not be concerned with the proposed transaction. They argue that the harms I envision from the transaction could instead be achieved by contract and are therefore not transaction-specific. This argument contradicts News Corp.'s own claims that the transaction is necessary to achieve the efficiencies it predicts. They argue that a "reduced double marginalization effect" will necessarily outweigh any of these harms. This they fail to show. They also argue that there are low barriers to entry into the sports programming market. This is simply not credible. And they continue to make claims about efficiencies, the efficacy of the Commission's rules, pricing behavior and corporate governance that do not answer my concerns about the transaction. As I demonstrate below, none of these arguments disprove that the transaction will enhance News Corp.'s incentive and ability to raise prices and harm consumers.

[22] The one possible exception I identify in my original affidavit is the case of less dense rural areas where it might be possible for News Corp. to induce a rival to exit by withdrawing programming from it. In regions of the country where News Corp. thought it could induce a rival to exit by completely withdrawing programming from it, complete withdrawal programming (as opposed to simply raising the price of programming) might be the most likely harm of the merger.

### A. News Corp. and DirecTV Could Not Accomplish the Same Anti-Competitive Harms through Arms-Length Contracting

Lexecon claims that the transfer of control would not be necessary to allow News Corp. and DirecTV to jointly coordinate, plan, and split the gains from any anti-competitive actions that might increase their joint profits.[23] Rather, Lexecon suggests that any such opportunities for coordinated action could be easily captured through arms-length contracting.[24] If this is true, it argues, then the Commission should not even consider the anti-competitive harms that might arise because they would have occurred in any event.[25] I have four responses to this argument.

First, it is well recognized that complex agreements that require continual adjustment and exchange of information, and which create opportunities for parties to take advantage of one another, are better managed within the boundaries of the firm. While it may be fairly easy to sign a contract that guarantees that News Corp. will provide its programming exclusively to DirecTV, I believe that it is much more likely that the profit maximizing way to raise rivals' costs will involve other actions, such as charging rivals higher prices rather than excluding them altogether, or providing them with slightly less satisfactory service, or being purposefully difficult to bargain with and therefore causing more temporary withdrawals in service.

To the extent that raising rivals' costs would involve almost any type of activity other than the permanent withdrawal of all programming, such activities are complex enough, and require enough subjective judgments about whether or not rivals' costs are actually being raised in appropriate ways and what the true benefits and costs of such activities are, it seems beyond

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[23] *Lexecon Report* at ¶ 46 *et seq.*

[24] *Id.*

[25] *Id.*

any doubt that News Corp. and DirecTV could better manage and coordinate any conspiracy to raise rivals' costs from within the boundaries of the firm.

Furthermore, optimal coordination might require significant sharing of information to calculate jointly optimal actions and a deal like the one proposed here might be necessary to facilitate such information sharing. In addition, control of DirecTV provides News Corp. with assurances that if it withholds programming from rival MVPDs in order to create long-term and permanent gains in market share for DirecTV, that News Corp. will continue to receive a share of these gains over the long term.

Second, I believe that there is a substantial contradiction in News Corp.'s own position about whether or not it and DirecTV are able to use arms-length contracting to effectively take advantage of opportunities for joint actions that would increase their joint profits. When it comes to joint actions that the two firms could undertake to increase their joint profits that the Commission might view as *undesirable*, News Corp. seems quite sure that the transfer of control itself would not be necessary for the firms to undertake these actions. However, when it comes to joint actions that the two firms could undertake to increase their joint profits that the Commission might view as *desirable* (*i.e.*, the transaction's efficiencies), News Corp. seems to take an entirely different view of the subject. Namely, News Corp. seems quite sure that the efficiencies it claims for the transaction could NOT be achieved through arms-length contracting.[26] I submit that these two positions are in substantial contradiction with one another.

[26] *See The News Corporation Limited's Response to Initial Information and Document Request*, attached to Letter of William M. Wiltshire to Marlene H. Dortch, July 28, 2003 at 32 ("*News Corp. Interrogatory Response*") (noting that the Applicants' projected efficiencies "are particularly difficult to achieve in any manner other than an integration of the two firms.").

Third, News Corp. and DirecTV might not want to enter into certain types of explicit agreements to conspire with one another to harm DirecTV's rivals. The example I will use is temporary withdrawals of programming, but many other examples can be thought of that have the same flavor. Suppose that the optimal way for News Corp. and DirecTV to maximize their joint profits is for News Corp. to purposely manufacture disputes with DirecTV's rivals that create the pretext for temporary withdrawals of programming. Furthermore, suppose that News Corp. could solve the contracting complexity problem discussed above by agreeing to a simple contract which would require News Corp. to withdraw programming for a specified number of days from DirecTV's rivals in return for a cash payment.

I suspect that News Corp. and DirecTV would still not want to enter into an explicit contract of this sort even if it could be written. To begin with, it may well be illegal for one company to pay another company to harm one of its rivals in such a fashion. Moreover, even if it were not illegal, it is highly likely that the regulators that watch over this industry and Congress itself would react quite poorly if the information came out that News Corp. had accepted a contract from DirecTV in which DirecTV paid News Corp. to harm its rivals. Therefore, it seems highly likely that the parties would never risk putting such an agreement on paper in some sort of arms-length contract. Rather, the better way to undertake such cooperative actions would be through implicit and informal understandings. Of course, it precisely this type of informal cooperation that can be best accomplished within the confines of a firm.

Fourth, DirecTV and News Corp. could not enter into arms length contracts that would increase News Corp.'s *bargaining power* with respect to rival MVPDs. Lexecon is not even attempting to assert that News Corp. and DirecTV could use arms-length contracting to increase

News Corp's bargaining power. News Corp.'s bargaining power will increase following its assumption of control over DirecTV because News Corp. will gain a controlling interest in DirecTV. There is no alternate contracting mechanism short of such ownership that I am aware of that would create the same effect. Therefore, even if Lexecon's argument that arms-length contracting could be used to raise rivals' costs was correct (which it is not), Lexecon does not show that arms-length contracting could be used to increase News Corp.'s ability to bargain for higher prices.

### B. There Is No Basis to Believe Any "Reduced Double Marginalization Effect" Will Necessarily Outweigh The Anti-Competitive Harms Of This Transaction

Both Lexecon and CRA argue that even if the transaction creates an incentive for News Corp. to raise prices to rival MVPDs, it will also create an incentive for DirecTV to reduce its prices to subscribers because it will remove the "double marginalization" effect that occurs when News Corp. and DirecTV are separately owned. Lexecon seems to take the view that the "reduced double marginalization" effect is likely to dominate the "raising rivals' costs" effect in most vertical mergers and therefore, in particular, in this case.[27] CRA is somewhat more circumspect in its claims. It presents a linear example in Appendix B of its report in which the double marginalization effect outweighs the raising rivals' costs effect, and then suggests that this linear example demonstrates that the double marginalization effect is likely to outweigh the raising rivals' costs effect in this particular case.

Let me begin my making two statements about the raising rivals' costs literature with which I completely agree. First, in the models used in the raising rivals' costs literature, a

[27] "Vertical integration generally is procompetitive." *Lexecon Report* at ¶ 16.

vertical merger generally has two effects -- a raising rivals' costs effect that tends to raise prices and thereby harm consumers and a reduction of double marginalization effect which tends to lower prices and thus benefit consumers. Second, examples can be created where either effect dominates. Nonetheless, I disagree completely with the suggestions that the literature generally proves that one of the two effects will dominate in most mergers or that the particular linear example provided by CRA sheds any new light on the question of which effect dominates in general or which effect is likely to dominate in this particular transaction. I will explain why by making two points.

#### 1. There Is No Consensus among Economists as To Which Effect Dominates

While examples can be created where either effect dominates, there is in fact no consensus among economists regarding whether or not one of the two effects is likely to be generally more important than the other. This is true in part because the theoretical models in which the double marginalization effect is strongest generally make two modeling assumptions that may well not be generally correct for many markets. The reduction in double marginalization effect refers to the phenomenon observed in many models that the effect of a vertical merger is to reduce the price that the upstream firm charges for inputs to the downstream firm it merges with. (After the merger, the price is a transfer price between two divisions of the same firm.) Therefore, models that make assumptions tending to maximize the reduction in this markup tend to produce the biggest welfare gains to consumers.

In particular, many models assume that the upstream firm is able to make a take-it-or-leave-it offer to downstream firms. This tends to maximize the pre-merger markup. Moreover, these models assume away any incentive problems within the firm so that it is perfectly optimal

for the vertically integrated firm to set the transfer price for the input equal to marginal cost after the merger. However, in the real world, downstream firms may have some bargaining power and this tends to reduce the pre-merger markup. Furthermore, in the real world firms often choose transfer prices significantly above marginal cost for reasons not captured in simple models. Both of these factors would tend to reduce the extent to which the merger will reduce mark-ups and therefore reduce the extent to which the double marginalization effect is likely to be important in real markets where these factors are important.

Another reason why there is no consensus about which of the two effects dominates, is that even in models where assumptions are made that tend to maximize the reduction of double marginalization effect,[28] it is possible to construct simple examples in which either effect dominates. Therefore even these models yield no unambiguous answer.

The published academic work of one of the principal CRA experts, Steven Salop, supports this position. I agree with CRA and Lexecon on the importance of the paper by Michael Riordan and Steven Salop that lays out an economic framework for evaluating vertical mergers that incorporates ideas from the raising rivals' costs literature.[29] Riordan and Salop advocated a "rule of reason" type approach that would attempt to compare the costs and benefits of such mergers.[30] Two economists from the Federal Trade Commission, David Reiffen and Michael Vita, reviewed this article and argued that the reduction in double marginalization

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[28] That is, where it is assumed that the upstream firm is able to make take-it-or-leave-it offers to the downstream firm and that the vertically integrated firm finds it optimal to charge a transfer price equal to marginal cost.

[29] *See* Michael H. Riordan and Steven C. Salop, *Evaluating Vertical Mergers: A Post-Chicago Approach*, 63 Antitrust L. J. 513 (1995).

[30] *Id.*

effect will almost surely dominate the raising rivals' cost effect in most real markets and that the optimal regulatory policy was therefore to view all vertical mergers as being presumptively legal.[31] One of the main arguments they used to support their position was that they presented a simple example in an appendix to their paper where the reduction in double marginalization effect always dominated the raising rivals' costs effect.

Riordan and Salop immediately disputed the contention that the reduction in double marginalization effect was likely to be generally more important than the raising rivals' cost effect.[32] They observed that:

> Reiffen's and Vita's central contention - that the efficiency benefits of vertical mergers are likely in almost all cases to outweigh any anticompetitive harms from input foreclosure - is not well founded and does not justify a laissez-faire approach to vertical mergers.[33]

Their explanation of why Reiffen's and Vita's presentation of a single example does not prove that vertical mergers will always be beneficial covers all of the points I raised above. For example, they note that, to the extent downstream purchasers have bargaining power, this will tend to reduce the pre-merger mark-up and therefore reduce the benefit of the merger:

> [If] big buyers obtain competitive input prices despite high concentration, a vertical merger between a big buyer and an input supplier might involve no significant double-markup or variable-proportions distortion to eliminate.[34]

They go on to remark that vertically integrated firms may not actually set transfer prices equal to marginal costs in real markets for reasons not captured in Reiffen and Vita's simple example:

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[31] David Reiffen and Michael Vita, *Is There New Thinking On Vertical Mergers?*, 63 Antitrust L. J. 917 (1995).

[32] Michael H. Riordan and Steven C. Salop, *Evaluating Vertical Mergers: Reply To Reiffen and Vita*, 63 Antitrust L.J. 943 (1995) ("*Riordan and Salop Reply*").

[33] *Riordan and Salop Reply* at 944.

[34] *Id.* at 947.

> [In] some cases integrated firms may find it profitable to set internal transfer prices in excess of marginal costs in order to facilitate pricing coordination in the output market. [footnote omitted] Integrated firms also sometimes set transfer prices at market prices in order to provide incentives to managers and to monitor the financial performance of the upstream and downstream divisions.[35]

They summarize their conclusion as follows:

> Therefore, we conclude that substantial efficiency benefits (like competitive harms) must be demonstrated on the facts, not simply assumed on the basis of some technical economic model.[36]

Thus, one of the principal authors of CRA's work himself recognizes the importance of considering the specific facts of a particular transaction rather than relying on vague generalizations about reduced double marginalization.

#### 2. The Linear Example Presented In Appendix B of The CRA Report Provides No Basis For Concluding That The Reduction In Double Marginalization Effect Will Outweigh The Raising Rivals' Cost Effect In This Particular Transaction

There are three observations to make with respect to this point. First, CRA make several critical assumptions that undermine the validity of their conclusions. Second, CRA's model relies upon profit margins that bear no resemblance to those of News Corp. and DirecTV. Third, CRA's demand curve formulations over-zealously "stack the deck" in favor of CRA's conclusions. I discuss these observations in more detail below.

First, the CRA example makes the two assumptions that Riordan and Salop identify above as being relatively arbitrary assumptions that tend to maximize the reduction in double marginalization effect. These assumptions are (i) that the upstream firm is allowed to make take-it-or-leave-it offers to the downstream firms and (ii) that the vertically integrated firm finds it

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[35] *Id.*

[36] *Id.*

optimal to charge a transfer price equal to marginal cost after the merger. However, CRA does not make any attempt at to investigate or discuss whether or not these are reasonable assumptions in the case of this particular deal. I have argued that there is no basis at all for CRAs implicit and unquestioned assumption that sellers are able to make take-it-or-leave it offers to buyers in this market. Regarding the assumption that the merged firm will find it optimal to set transfer prices equal to marginal cost, it is important to note that the marginal cost of distributing programming to additional MVPDs given that it has already been produced is likely close to zero. Therefore, in the context of this particular transaction, CRA assumes that News Corp. will charge a transfer price close to zero to DirecTV after the takeover.[37]

Even if we ignore CRA's unquestioned adoption of these two assumptions -- and even if we ignore the fact that they are working with a linear example -- the CRA analysis still cannot be seriously interpreted as applying to this particular transaction. We conclude from the public version of CRA's work that the ratio of profit margins between the downstream and upstream firms is 12.11 for the case of regional sports programming and 3.46 for the case of retransmission consent for local broadcast signals. As I pointed out in Section II, higher values of this ratio ought to generate a stronger incentive for News Corp. to raise rivals' costs. Of course, the value of this ratio played an important role in CRA's own analysis of the likely profitability of foreclosure in this particular transaction that CRA conducted in the main body of its report.

[37] CRA has made no attempt to investigate whether or not this is a reasonable assumption. For example, CRA could ask: What sorts of transfer prices does News Corp. charge its MVPDs in foreign countries where it already owns MVPDs? What sorts of transfer prices do other vertically integrated programmers charge their MVPDs in the United States? Is there any evidence that vertical integration causes a reduction in double markups in these cases? CRA does not even raise these questions and certainly does not answer them.

However, when we turn to Appendix B, which CRA claims can be used to assess the likely welfare effects of this particular deal, we find that CRA has used an example where it has assumed that the pre-merger ratio of the profit margins of the downstream firm to the upstream firm is 0.4.[38] That is, with respect to the transaction at issue, CRA reports that the profit margin of the downstream firm is *over twelve times as large* as the profit margin for the upstream firm in the case of regional sports programming and is *over three time as large* for the case of retransmission consent of local broadcast signals. Meanwhile, with respect to the model it uses to analyze the welfare effects of the transaction, CRA assumes that the profit margin of the downstream firm is *less than half as big* as the profit margin of the upstream firm. Given that the ratio of these profit margins is an important factor affecting the incentives for raising rivals' costs, and given that CRA has provided information on the size of this ratio for this particular transaction, I think that an absolute minimum requirement to place on CRA when it claims to provide an example that measures the welfare effects of this particular transaction is that the ratio of profit margins in their example bear some resemblance to the ratio of profit margins in the real world.

When I discovered this discrepancy between the ratio of profit margins in the CRA model and the ratio of profit margins for this transaction, I attempted to recalculate the CRA example using parameters that produced a ratio of profit margins closer to their real value in this transaction. In doing so, I discovered what I view to be a fatal shortcoming of the CRA example. In the symmetric linear model that CRA has created, where it is assumed that a single upstream firm makes take-it-or-leave-it offers to downstream firms, it is easy to show that the ratio of the

[38] The premerger profit margin of the upstream firm is calculated to be 5 and the premerger profit of the downstream firms is calculated to be 2. *CRA Report* at ¶ 133.

pre-merger profit margin of the downstream firm to the profit margin of the upstream firm is always less than 0.5 regardless of how the parameters of the demand function are chosen.[39] Therefore, the class of examples that CRA uses to investigate the welfare consequences of this particular transaction is inherently incapable of producing a ratio of pre-merger profit margins anywhere near the actual value of the ratio in this particular transaction.

Finally, I should point out that the particular linear formulation for demand curves that CRA chooses in its Appendix B "stacks the deck" in favor of finding that vertical mergers reduce prices to consumers. It does so by implicitly introducing an arbitrary assumption on how a reduction in demand affects the incentive of the upstream firm to raise or lower input price. After noting that the effect of a vertical merger in its model is to lower all prices paid by consumers, CRA explains this result by noting that there are three separate effects at work in its model.[40] (In this model, CRA refers to the two downstream firms as D1 and D2 and the upstream firm as U. The downstream firm that U vertically integrates with is D1.) The first effect CRA identifies is the reduction in double marginalization effect. This of course tends to reduce prices. I will call the second effect that CRA identifies the "demand reduction effect." CRA notes that the fact that D1 reduces its price results in a reduction of D2's demand. It then notes that this reduction in D2's demand gives U an incentive to lower the input price it charges D2.

> Ignoring for the moment the fact that U has merged with D1, the reduction in D2's upstream demand gives U the incentive to lower the upstream price to D2. This second effect works in the same direction as the elimination of the double markup, and tends to further reduce downstream prices.[41]

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[39] I explain this conclusion in Appendix C of this paper.

[40] *See CRA Report* at para. 142.

[41] *See id.*

The third effect that CRA identifies is the raising rivals' costs effect which of course tends to increase prices and harm consumers.

While CRA candidly and correctly points out that, in its model, the reduction in demand effect reinforces the reduced double marginalization effect, it does NOT point out that this is not a general result at all but depends critically on the particular functional form assumption that CRA makes for the demand curves. That is, in general, if the demand facing a monopolist with constant marginal costs of production is reduced, it is possible that the profit maximizing price for the monopolist will increase, stay constant, or decrease. Any of these results is possible depending upon the precise way that demand shifts in. CRA happens to have chosen a functional form for its demand curves such that a reduction in D2's demand causes U to find it optimal to lower the input price. However, they could have just as easily chosen a functional form where a reduction in D2's demand would cause U to find it optimal to raise prices. In this case, the reduction in demand effect would have magnified the raising rival's costs effect and made it much more likely that CRA would find that the merger would on balance harm consumers. Once again, I find that the model CRA claims can be used to analyze the effects of this particular merger makes implicit assumptions which tend to raise the likelihood that a vertical merger will benefit consumers. It does not note that these assumptions have this effect and it certainly does not attempt to justify that its assumptions are correct for the case of this particular merger.

### C. There Is Evidence to Suggest That There Are Barriers To Entry In The Market For Regional Sports Networks

Lexecon argues that barriers to entry are low in the market for regional sports programming and therefore, in particular, that rivals' of DirecTV could respond to higher prices

for regional sports programming by out-bidding News Corp. for the regional sports programming and starting substitute regional sports networks of their own.[42] A careful reading of the Lexecon report reveals that Lexecon supports its statement by

- offering its own opinion that the necessary skills and resources to create regional sports networks are "presumably widely available"; [43]
- citing one newspaper article that states that some major league baseball teams are considering starting their own networks;[44] and
- observing that no one opposed to the transaction has provided any evidence that there are high barriers to entry in this industry.[45]

While there is not a great deal of evidence on this subject, the evidence that does exist suggests that barriers to entry into the regional sports network industry may more substantial than Lexecon asserts.

For example, a recent article in Cable World on the subject of the start-up of new regional sports networks by sports teams and MSOs, points out that the history of failed attempts to enter this industry suggests that entry may actually be quite difficult. The article observes that it is by no means a sure or simple process for a new regional network to gain carriage on a sufficiently large number of MVPDs and that even the attempt of billionaire Paul Allen to start his own regional sports network failed when he wasn't able to obtain carriage quickly enough on enough MVPDs:

> Some owners have tested the mini-regional concept, only to then turn to the sure money from Fox Sports Net, the clear leader in local sports in most markets. Paul Allen tried and failed when his Action Sports Network featuring his Portland Trail Blazers couldn't

[42] *Lexecon Report* at ¶¶ 12-20.

[43] *Id.* at ¶ 16.

[44] *Id.* at n.18.

[45] "Indeed, none of the critics has presented evidence to suggest otherwise." *Id.* at ¶ 16.

> get on AT&T Broadband systems. The billionaire cut his losses last fall and abruptly shut down the ambitious network with its hi-def programming, and thus the Blazers are back on Fox Sports.[46]

Furthermore, the article points out that, while it is natural for potential entrants to try and start small with perhaps only one or two teams, such small networks are prone to failure both because they are unattractive to MVPDs and because they are not able to supply enough high-quality programming to fill the time slots. The article quotes a number of industry participants who suggest that small-scale entry is difficult and unlikely to succeed:

> 'The likelihood of launching a successful regional sports network with only one team is very small,' says Dean Bonham, chairman of the Bonham Group, a Denver sports marketing consultancy. 'There are a thousand better ways to invest your money than a one-team network.' Even a two-team network isn't always worth the gamble. 'Tom Hicks tried it in Dallas and ultimately ended up negotiating a deal with Fox. Disney tried it in Anaheim and ended up negotiating with Fox,' Bonham recalls. 'Both entities came to the conclusion that Fox's offer was better than going into business by themselves. They were better off taking the bird in the hand versus the one in the bush.' Says Pilson, who advised the Minnesota Timberwolves on their decision to go with Fox instead of joining a new competing network, 'The one-team regional concept is fraught with problems. You simply don't have enough year-round programming. You may not be able to get enough money per sub. Plus, you take on the risk of advertising sales and production costs.'[47]

The article concludes that News Corp. does not appear to be particularly vulnerable to entry of competing sports networks:

> Now Fox seems to be secure enough to play hardball with owners and to wait out their efforts to start their own networks or go with a new RSN. Fox is also willing to let networks go dark when an MSO refuses a rate hike as is the case now with Time Warner Cable, the Sunshine Network, and Fox Sports Net North.[48]

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[46] Staci D. Kramer *Feature: Sports Nets Get Closer to Home*, Cable World, January 6, 2003.

[47] *Id.*

[48] *Id.*

Furthermore, in an article entitled "RSNs: A Hard Market to Break" Kagan analyst Jonathan Blum also explains that the RSN market is lucrative but that Fox's position is secure because entry, especially small-scale entry, is difficult:

> MSOs and team owners are smart to look at the regional sports business. We estimated total RSN revenue hit $1.8 billion for 2002, up by about 11 percent from the previous year. But a look at the operational economics shows the business is *not trivial to enter*. RSN's are dominated by one player: News Corp. Blurry carriage and affiliate deals hide exact relationships, but of the 80 men's professional sports teams in the U.S., 50 have exclusive carriage deals with Fox. The limited carriage picture is further tightened by the subscriber dependency and the high costs of the RSN. We modeled the expenses and revenues of a vertically integrated RSN with stakes in sports teams and cable distribution with 1.6 million subs and showed that operating margins in the 50% range are possible. Drop that subscriber number down and take away the scales of cross-ownership and the stubborn costs of professional rights, remote production fees and ad sales quickly eat up available profits.[49]

Thus, it is by no means as self-evident as Lexecon makes it seem that barriers to entry into sports programming are low enough to discipline any attempt by News Corp. to raise prices or reduce output in this market once it has acquired control of DirecTV.

### D. The Efficiencies That News Corp. Claims For This Transaction Are Generally Unrelated To Its Vertical Relationship With DirecTV

Lexecon asserts that vertical mergers are, in general, likely to benefit consumers and not harm them.[50] To the extent that Lexecon is attempting to argue that the theoretical literature on raising rivals' costs somehow proves or even suggests that the double marginalization effect is likely to generally dominate the raising rivals' costs effect, I have already explained why I believe they are wrong and, furthermore, why the published academic work of one of the principle CRA experts, Steven Salop, comes to much the same conclusion. However, I believe

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[49] Jonathan Blum, Kagan, *RSNs: A Hard Market to Break*, Cable World, January 6, 2003 (*emphasis supplied*).

[50] *See Lexecon Report* at ¶¶ 5-7.

that there is a less extreme interpretation of the Lexecon statement that would find much broader acceptance in the economics community. This is that vertically related firms are participating in a cooperative activity which in principle might well benefit from closer coordination while horizontally related firms are not. Therefore, *a priori*, the extra need for coordination between vertically related firms suggests that policy makers should give more deference to firms' judgments that they could benefit from the closer coordination in their joint productive activities that vertical integration would allow.[51]

While I agree that this is the prevailing view, I would submit that the prevailing view is also that vertical mergers can be potentially harmful to consumers and that there is therefore a need for regulators to review the specific circumstances of any particular merger to ascertain its effects on consumers.[52] Furthermore, I find it both interesting and relevant that the nature of the projected efficiencies that News Corp. has touted most highly for this particular transaction are, for the most part, NOT associated with closer coordination of the vertical relationship between DirecTV and News Corp. Rather, they are the more generic sort of efficiencies that are generally also raised in the context of horizontal mergers. For example, News Corp. suggests that some economies of scale and beneficial knowledge transfer of best practices across firms will result

[51] *See*, for example, Riordan and Salop, *supra* note 5, at 548-49 (". . . vertical mergers are entitled to a greater presumption of cost savings and other efficiency benefits that are horizontal price restraints and horizontal mergers. Vertical mergers involve firms that normally have a contractual relationship to one another that contains cooperative elements. [footnote omitted] This is very different from the paradigmatic horizontal merger or horizontal price-fixing matter.").

[52] *See* Riordan and Salop, *supra* note 5, at 550 ("Simply because some efficiency benefits are identified does not demonstrate that these benefits exceed the magnitude of competitive harms. Absent proof of sufficiently offsetting efficiency benefits, we think that the vertical merger should be judged anticompetitive."). *See also* previous quote from Riordan and Salop Reply, *supra* note 33.

because of cooperation between News Corp.'s foreign satellite subscription services and DirecTV.[53] This is essentially the sort of economy of scale/transfer of best practices argument always made for horizontal mergers.

News Corp. also suggests that its management is more dynamic, capable, and knowledgeable than DirecTV's management[54] and that News Corp. can make capital available to

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[53] *See News Corp Interrogatory Response* at 33 ("Also through application of the lessons learned with other DTH systems, [Hughes] will be able to improve the customer service experience – thus attracting new subscribers and reducing churn"); *id.* ("By taking advantage of its experience overseas, [News Corp.] will be able to more easily introduce a host of innovative products and services, including an enhanced level of interactive television"); *id.* at 34 ("By integrating DIRECTV into its other affiliated DTH platforms, News Corp. will be able to spread the cost of developing new technologies and accelerate the deployment of any resulting products and services."); *id.* ("News Corp. intends to bring the benefit of its DTH experience to every aspect of Hughes management and the company's interface with consumers."); *id.* at 39 (". . . by combining DIRECTV's subscriber base with that of News Corp.'s other DTH affiliates, News Corp. will be able to more efficiently defray the enormous research and development costs associated with bringing new services and features to market."); *id.* at 43 ("Also crucial to customer satisfaction, however, is customer service. Here News Corp.'s overseas DTH distributors have developed a set of 'best practices' to improve the overall attractiveness of their services.").

*See also id.* at 37-88:

> News Corp. also believes it will be able to help Hughes lower its general and administrative expenses by roughly $40 million to $80 million per year. News Corp. expects to be able to reduce these costs based upon its experience in successfully building and managing what is generally considered to be one of the most successful satellite television operations in the world (BSkyB), and thus to achieve levels more closely approximating the low cost provider in the U.S. market (Echostar). Moreover, News Corp. will be able to help Hughes lower its expenses for satellite and other transmission facilities and services by drawing on its experience with other DTH systems and rationalize operational areas that overlap with News Corp.'s subsidiaries – with potential cost savings of between $7 million and $15 million annually."

[54] *Id.* at 31 (". . . the most important assets that News Corp. will bring to Hughes are its vision, energy, and expertise."); *id.* ("Similarly, the Applicants in this proceeding have described the manner in which News Corp.'s expertise, spirit of innovation, and willingness to challenge established incumbents will make DIRECTV a better competitor . . .").

DirecTV.[55] Once again, these projected efficiencies are not reasonably related to the vertical relationship between News Corp. and DirecTV. Therefore, to the extent that News Corp. is NOT arguing that this transaction will allow it to coordinate its vertical relationship with DirecTV better and is instead simply advancing the same sort of generic efficiency arguments that are typically made for horizontal mergers, it is not clear to me that these efficiency arguments merit any more deference than they would be given in the case of a horizontal merger.

### E. Current Regulations Requiring Good Faith Negotiations for Retransmission Consent Do Not Provide Sufficient Safeguards

News Corp has offered to abide by the program access rules for the case of cable network programming. However it has argued that no such condition is needed for the case of the broadcast signals of Fox O&Os because current regulations requiring O&Os to negotiate fairly with all MVPDs provide sufficient safeguards.[56] The most glaring flaw with this argument (which News Corp acknowledges in a footnote[57]) is that the current regulations are set to expire on December 2005. Therefore, appealing to the protections afforded by the current regulations is disingenuous at best. Furthermore, the regulations that apply to the case of local broadcast signals, which simply mandate good faith negotiations, are weaker than the program access rules, which prohibit discrimination of any sort.[58]

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[55] *News Corp Interrogatory Response* at 35 (". . . DIRECTV's post-transaction capital structure will no longer be subject to competing (and often incompatible) capital requirements of GM's automotive business, and thus Hughes will be much better able to obtain financing as it sees fit to develop and deploy these and other services.").

[56] *See News Corp. Reply* at 44-47.

[57] *See id.* at n.104.

[58] I argued in my initial affidavit that I believe that even the program access rules might not provide sufficient safeguards because they would not prevent a price rise to all MVPDs, including DirecTV. This criticism would apply equally well to the case of local broadcast signals. Therefore I am NOT arguing in this section that I believe program access–like rules

### F. CRA's Argument That The Transaction Will Not Cause Prices to Rise Because "Fox's Fees Today Already Maximize the Profits that Fox can Earn on Programming" Makes Three Basic Errors in Economic Reasoning

CRA quotes the prediction of a consumer advocate that the transaction will cause programming prices to rise and provides the following critique of it:

> First, the presumption of the quote that all cable operators would simply accept and pay higher fees for Fox programming is clearly inconsistent with the fact that Fox's fees today already maximize the profits that Fox can earn on its programming. Fox must believe today, in the pre-acquisition world, that raising its affiliate fees would run the risk of losing carriage on some cable systems; or it would have raised its fees already. The proposed transaction would not make an increase in affiliate fees more likely. It would not lower the elasticity of demand facing Fox programming.[59]

I submit that CRA has managed to make three fundamental errors in economic reasoning in this short quote.

First, CRA ignores its own theory of raising rivals' costs as outlined in its Appendix B. Even if Fox is able to announce the profit maximizing take-it-or-leave-it price to downstream firms, after it acquires control of DirecTV, Fox shares in DirecTV's profits and this, in general, changes the calculation of the optimal take-it-or-leave-it price. Therefore, in CRAs own raising rivals' costs theory, even though the upstream firm is choosing the optimal take-it-or-leave-it price before the merger, this does NOT mean that the deal will leave price unchanged. The transaction changes the firm's objective function and thus changes its profit maximizing price.[60]

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would necessarily provide sufficient safeguards to prevent this merger from harming consumers. I am simply arguing that the News Corp.'s offer to abide by program access rules for the case of cable network programming provides more safeguards than does the fact that is will be required by law to abide by the good faith negotiations requirements that apply to retransmission consent negotiations.

[59] *CRA Reply* at ¶ 93.

[60] Of course, CRA argues that the net effect of all of the incentive changes for this particular merger will result in decreased prices. I dispute this assertion in part III.B. of this paper. My

Second, in the above quotation CRA sketches a second, somewhat more complicated theory, and its conjecture about this theory is also incorrect. Namely, in the above quotation CRA sketches a model where it assumes that the upstream firm is able to make a take-it-or-leave-it offer to downstream firms, but that the upstream firm only has a probabilistic notion of whether or not downstream firms will accept or reject its offer.[61] It suggests that the transaction would NOT change the calculation of the optimal take-it-or-leave-it price in this model either. Once again, this is incorrect. When there is a probability that the downstream firm will reject the upstream firm's offer, the severity of the consequences that the upstream firm would suffer if its offer was rejected plays a role in the upstream firm's calculation of the optimal price to offer. In particular, if the consequences of a rejection become less severe, it will generally be optimal for the upstream firm to offer a higher price in such a model. Of course, the effect of the transaction is to make the consequences of a rejection less severe for the upstream firm.[62] Therefore, a correct analysis of the alternate model that CRA sketches suggests they have ignored another possible reason why the optimal take-it-or-leave-it price might rise.[63]

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point here is simply that CRAs statement that the merger will not change prices because News Corp. is already maximizing prices before the merger is not even consistent with its own theory of raising rivals' costs.

[61] The standard raising rivals' costs models, including the one provided by CRA in its Appendix B, assume that the upstream firm has complete information about the downstream firms and is thus able to perfectly predict whether or not they will accept any particular offer.

[62] This is because the profits earned by DirecTV will to some extent offset the losses on programming experienced by News Corp.

[63] In fact, this idea would provide the basis for a different, but somewhat related theory of harm to the "increased bargaining power theory" that I have outlined in this paper. This theory would also have the feature that price rises are caused because News Corp. takes account of DirecTV's increased profits when News Corp. withholds programming from its rivals', but the reason the effect occurs would be somewhat different.

Third, and most importantly, when CRA refers to the *fact* that the upstream firm is able to announce the profit-maximizing take-it-or-leave-it price before the transaction, it of course not referring to a *fact* at all. Rather, it is referring to its own *assumption* that the upstream firm is able to announce such a price. A major point of my analysis has been that the facts of this case suggest that this is a particularly poor assumption for analyzing this particular deal. In the case of the market for programming it is widely accepted that firms bargain over price. Therefore the effect of the transaction on News Corp.'s bargaining power must be considered. Of course, I have explained why this effect also suggests that News Corp. will raise prices after the merger.

### G. The Harms that I Predict this Transaction Will Cause in No Way Depend on the Ability of News Corp. to Take Advantage of the Outside Shareholders of DirecTV

In its reply comments, News Corp asserts that all of the theories of foreclosure I and others raise do not apply to this transaction because (i) all the theories depend in some way on the ability of News Corp. to take advantage of the outside shareholders of DirecTV and (ii) the Audit Committee will be able to prevent News Corp. from taking advantage of the outside shareholders of DirecTV. Specifically News Corp. makes the following statement:

> Each of the vertical foreclosure theories described above depends in one way or another on the proposition that Hughes will put the interests of News Corp. – a 34% shareholder – above its own. This is simply not plausible, given the separate interests of the remaining 66% shareholders and the corporate governance mechanisms that are in place, bolstered by corporate and securities law.[64]

I would like to be perfectly clear: NONE of the theories of harm that I have advanced either in this Affidavit or my original Affidavit depend in any way on the assumption that News Corp. will be able to take advantage of the outside shareholders of DirecTV. My predictions of News Corp.'s and DirecTV's likely behavior after the takeover have been based on the

assumption that the two firms will be able to coordinate their activities to maximize their joint profits and nothing more. Far from assuming that News Corp. and DirecTV will be locked in a fractious battle in which they try to take away each others' slices of the pie, I am assuming that they will

be able to cooperatively work together to maximize the size of pie that they are splitting and thus increase the size of each of their pieces. Therefore, the issue of whether or not the Audit Committee will be able to protect the interests of the outside shareholders of DirecTV is simply irrelevant to the theories of harm that I have advanced. In particular, even if it is true that the Audit Committee will be able to fully and completely protect the interests of the outside shareholders of DirecTV, this in no way makes any of the harms that I predict this transaction will cause smaller or less likely to occur.

## CONCLUSION

News Corp.'s takeover of DirecTV will harm consumers because it will provide News Corp. with both an increased incentive and an increased ability to raise the prices that it charges rival MVPDs for programming. These price increases will be passed through to consumers. While it may not turn out to be generally profitable for News Corp. to permanently withdraw its programming from rival MVPDs after it acquires control of DirecTV, the revenue that News Corp. would lose from withdrawing programming from rival MVPDs will be at least partially offset by the profits that News Corp. would earn from subscribers that switch to DirecTV. This will make the threat of withdrawing programming more credible and thus allow News Corp. to

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[64] *News Corp. Reply Comments* at 53.

bargain for higher prices. Furthermore, temporary withdrawals of programming are very likely to be profitable for News Corp. after it acquires control of DirecTV. These temporary withdrawals will directly harm consumers and will also provide News Corp. with even more bargaining leverage in its negotiations over programming prices with rival MVPDs.

I declare that the foregoing is true and correct:

____________/s/_______________
William P. Rogerson

Dated:

August 4, 2003
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# APPENDIX A

## *A SIMPLE MODEL OF BARGAINING BETWEEN A BUYER AND A SELLER*

In this Appendix I will present a simple model of how a seller and buyer negotiate the price of a good and how the negotiated price depends on the best other offer that the seller has received. This model illustrates the central idea of the theory that a vertical merger will increase an upstream firm's ability to negotiate a higher price with rival downstream firms.

Suppose that a seller owns the good and the good is worth nothing to the seller if he keeps it. Also suppose that there is only one possible buyer for the good and that the good is worth $10 to the buyer in the sense that the buyer would be indifferent between paying $10 for the good and consuming it vs. not purchasing it at all. Furthermore, suppose that the buyer knows the good is worthless to the seller and that the seller knows the good is worth $10 to the buyer.

If the seller could make a take-it-or-leave-it offer to the buyer, the seller would offer a price just slightly less than $10 since he would know that the buyer would rationally accept this price if his only other alternative was not to buy the good. Similarly, if the buyer could make a take-it-or-leave-it offer to the seller, the buyer would offer a price just slightly above $0, since the seller would rationally accept this price if his only other alternative was to not buy the good. In general, we expect that the buyer and seller would be able to negotiate a price at which the sale would occur, that the price would be somewhere between $0 and $10, and the exact value of the price that they negotiate would depend upon the buyer's and seller's bargaining power. Economists often capture these ideas in a simple formal model by simply assuming that there is a parameter $\alpha$ between 0 and 1 which we can interpret as a measure of the seller's relative

bargaining strength and that the negotiated price is equal a weighted average of the highest price the buyer is willing to pay (with weight $\alpha$) and the lowest price the buyer is willing to accept (with weight $(1- \alpha)$). That is, the negotiated price is determined by the formula

$$(A.1) \qquad p = (1- \alpha)\, 0 + \alpha\, 10$$

which can simply be rewritten as

$$(A.2) \qquad p = \alpha 10.$$

Setting $\alpha$ equal to ½ would then correspond to the situation where the buyer and seller have relatively equal bargaining power, and economists refer to this particular outcome as the Nash bargaining solution.

Now, suppose that there is one change to the above situation; namely, the seller's circumstances change and the seller is able to consume the good himself if he doesn't sell it to the buyer. Suppose, in particular, that the good is now worth \$4 to the seller if he keeps it himself instead of \$0. The simple bargaining model described above predicts that the new price that will be negotiated is now equal to

$$(A.3) \qquad p = (1- \alpha)\, 4 + \alpha 10.$$

In particular, the effect of a $4 increase in the value of the good to the seller is to result in a price increase of $(1- $\alpha$)4. Therefore, simple bargaining theory predicts that if the good becomes worth $4 more dollars to the seller, this will always enable the seller to negotiate a higher price except in the polar extreme case where one assumes that the seller is able to make a take-it-or-leave-it offer to the buyer. (In this case, the seller is able to charge a price of $10 no matter what the value of the good is to himself.) In particular, simple bargaining theory predicts that when the buyer and seller have relatively equal levels of bargaining power, if the good becomes worth $4 more to the seller this should allow the seller to negotiate a price that is about $2 higher. That is, when a buyer and seller bargain over the price of a good, and when they have relatively equal levels of bargaining power, we expect increases in the value of the good to the seller to yield increases in price of about half that amount.

The application of this model to the case of a vertical merger should be apparent. Suppose that an industry consists of one upstream firm U and two downstream firms D1 and D2. Suppose that U is considering merging with D1. Consider the effect of this merger on the bargaining problem between U and D2. Suppose that D1's profits will increase by some amount $\pi$ if U does not sell input to D2.

The effect of U's merger with D1 on the bargaining problem between U and D2 is therefore essentially to increase the value of the input to U by $\pi$ dollars.

As explained above, in a case where U and D2 have relatively equal bargaining strengths, we would expect this to result in an increase in price of about $\pi/2$ dollars.

# APPENDIX B

## *CALCULATIONS OF THE PROFITABILITY OF FORECLOSURE FOR THE CASE OF RETRANSMISSION CONSENT OF LOCAL BROADCAST SIGNALS*

### 1. Introduction

CRA considers a hypothetical case in which, after the instant transaction closes, News Corp. permanently withholds programming from a rival MVPD and this causes some subscribers to shift from the rival MVPD to DirecTV. It calculates the size of demand shift that would be necessary in order for withholding to be profitable for News Corp. and argues that this is larger than would be plausible. In the main body of this Affidavit, I show that there is a serious conceptual error in the CRA calculations and that, when this error is corrected, that the size of the required demand shift is much smaller, and much more plausible. I also use the CRA model to calculate the profitability of temporary program withdrawals and show that the size of the required demand shift to make temporary program withdrawals is much smaller yet.

CRA performed its non-confidential calculations for two different types of programming -- regional sports networks and local broadcast signals. In the main body of this Affidavit, I presented the corrected calculations for permanent program withdrawals and the new calculations for temporary program withdrawals for the case of regional sports networks. In this Appendix, I will report the same calculations for the case of local broadcast signals.

### 2. Sketch of the CRA Calculations

Just as for the case of regional sports programming, I will begin by sketching the CRA calculations precisely as they did them mainly in order to recover the ratio of relative profit

margins that they assume. As for the case of regional sports programming, assume that DirecTV has a market share of .13 and that its rivals have a market share of .87. Let x denote the advertising revenue that News Corp. earns per viewer on its local broadcast signal and let y denote the profit margin that DirecTV earns per subscriber on its satellite subscription service. Just as before let s* denote the share of all MVPD subscribers that shift to DirecTV when News Corp. withholds the local broadcast signal from DirecTV's rivals. Let N continue to denote the total number of MVPD subscribers so that s*N denotes the number of subscribers that shift.

One additional complication that needs to be considered in the case of local broadcast signals is that, when News Corp. withholds the signal from an MVPD, a fraction of the subscribers that remain with the MVPD will continue to view the local broadcast channel using the over-the-air signal. Rather than choose a particular value for this fraction, I will perform the calculation for any value by using the variable "z" to denote the fraction of subscribers that remain with the MVPD that continue to view the local signal after News Corp. withholds retransmission consent. The calculations for the regional sports programming case were the calculations for the case of z=0 (since none of the subscribers who remain with the MVPD view the regional sports programming once it is withdrawn from the MVPD). Therefore, when I redo the calculations for the case of local broadcast signals, I will essentially redo the calculations for the general case where z can assume any value instead of the special case where z is equal to zero.

News Corp.'s losses in advertising revenue from subscribers to the rival MVPD is

(B.1) $$L = x\,\{s^* + (1-z)(.87 - s^*)\}\,N$$

This is because, when News Corp withholds the local broadcast signal from the rival MVPDs, its loss is x dollars per subscriber. The number of consumers that leave and switch to DirecTV is $s^*N$.[65] The number of consumers that stay with the MVPD and no longer watch the local broadcast station is $(1- z)(.87-s^*)N$. The gain in profit of News Corp from the consumers that switch is[66]

$$\text{(B.2)} \qquad G = (x + .34y) \{ s^* N\}.$$

This is because News Corp. gains x dollars in programming profit and .34 y dollars on satellite subscription profit for every subscriber that switches and there are $s^*N$ subscribers that switch. Foreclosure will be profitable if and only if the gains are greater than or equal to the losses which can be written as

$$\text{(B.3)} \qquad (x + .34y) \{ s^* N\} \geq \quad x \{s^* + (1-z)(.87- s^*)\} N$$

Simple algebra shows that condition (B.3) can be rewritten as

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[65] I will also include $s^*N$ as a gain to News Corp. because the customers that switch to DirecTV continue to view the local signal. Therefore the loss and gain cancel. I include them both because this is the way CRA presents the calculation and I want to follow their presentation to the extent possible. *See CRA Report* at n.54.

[66] As I mentioned above I am presenting CRA's calculation exactly as they did it in this section in order to recover the value of relative profit margins that they assume. In particular, I am following their procedure of only including 34% of DirecTV's profits in the gain.

(B.4) $s^* \geq .87 / \{ 1 + (.34y/(1-z)x)\}.$

CRA first does the calculation for the case of $z = 0$ and reports that the RHS of (B.4) is equal to .40.[67] As for the case of regional sports programming we can use this report and equation (B.4) to recover the value of y/x that CRA used. This calculation reveals that the ratio of y/x relied upon by CRA is 3.46. That is, according to CRA, DirecTV's profit margin per subscriber on satellite subscription service is 3.46 times as large as News Corp.'s profit margin per subscriber on local broadcast signals.

### 3. The Correct Calculation

As I argued in Section II.2, the CRA assumption that News Corp. and DirecTV will not be able to coordinate their own actions to foreclose rival MVPDs when it would be jointly profitable to do this is incorrect. To correct this erroneous assumption, the gain in equation (B.2) should be calculated to be the joint gain of News Corp. and DirecTV. Therefore the correct calculation of the gain is

(B.5) $G = (x + y) \{ s^* N\}.$

Using the corrected calculation of the gain, withholding will occur if and only if

(B.6) $s^* \geq .87 / \{ 1 + (y/(1-z)x)\}.$

[67] *CRA Report* at ¶ 71 and n.54.

### 4. The Value of z

Now that I have calculated the correct formula for estimating s* and I have recovered the CRA value for y/x, I only need to assign a value to z in order to estimate s*. Recall that z is the fraction of customers remaining with the rival MVPD after the local broadcast signal is withheld that continue to watch the local broadcast station by receiving its signal over the air.

Determining the value of z is an important issue because the value of z has a major effect on the value of s*. To understand why, consider the extreme case where z is assumed to be 1 so that all of the rival MVPD's customers that stay with it continue to watch the withheld local broadcast channel by receiving its signal over the air.[68] In this case, it is clear that News Corp. would lose nothing by withholding its signal from the rival MVPD because all of the customers that remain with the rival MVPD would continue to watch the local channel in any event. Therefore s* is equal to 0. Substitution of z=1 into (B.6) confirms this result.

Unfortunately, there is no particularly good information available to estimate this fraction because there are no instances where a major local broadcast signal has been withheld from an MVPD for a significant period of time. One starting point might be the fraction of the rival MVPD's current customers that are able to receive the local broadcast signal over the air. Because using an A/B switch and possibly installing an antennae if it were needed is

[68] This extreme case would occur, for example, if viewing the local channel was extremely important to all subscribers. In this case, those that were unable to receive the signal over the air would switch to DirecTV so they could continue to receive the signal. Some of the customers that were able to receive the signal over the air might also switch to DirecTV. All of the customers that remained with the rival MVPD would watch the local channel using the over-the-air signal.

troublesome, we would not expect all customers that were capable of receiving the local signal over the air to continue to view the channel.

However, it seems likely that among the current subscribers to the rival MVPD, those who were unable to receive the withheld local broadcast signal over the air would be the most likely to switch to DirecTV. Therefore, after the customers that switch to DirecTV leave, the fraction of the rival MVPDs remaining customers that are able to receive the signal over the air would be higher than the fraction of its initial customers that were able to receive the signal over the air. It is obviously also the case that this fraction will vary tremendously between relatively dense urban areas where almost everyone is able to receive over the air signals to less dense rural areas where perhaps very few people are able to receive over the air broadcast signals.

The CRA report assumes that only 1/3 of the rival MVPDs customers that remain after the local signal is withheld from it will continue to watch the local station by receiving an over the air signal.[69] In more dense urban areas where almost all customers are able to receive local signals over the air, the fraction of the rival MVPDs customers who continue to watch the local station might well be higher than this. In table B.1 I report the calculated value of s* for a range of values of z.

[69] *CRA Report* at ¶ 73.

**Table B.1**
**The Value of s* for Different Shares of the Rival MVPD's Customers that Continue to Watch the Withheld Local Signal by Receiving an Over-the-Air Signal**

| Share of Customers Who Continue To Watch The Local Channel | Value of s* |
|---|---|
| 0 | .195 |
| .1 | .180 |
| .2 | .163 |
| .3 | .146 |
| .4 | .129 |
| .5 | .110 |
| .6 | .090 |
| .7 | .069 |
| .8 | .048 |
| .9 | .024 |
| 1 | 0 |

If we viewed an estimate of z=.5 as a reasonable point estimate to use in the absence of any additional information, then the point estimate of s* would be .110. While this is somewhat higher that the value of .066 for the case of regional sports networks, this value is dramatically lower than the value suggested by the CRA analysis.

The above calculations can be adapted to calculate the profitability of a temporary withdrawal of demand just as for the case of regional sports programming. Since the nature of the adaptation is exactly the same, I will simply report the formula for calculating s* rather than presenting its derivation. Just as for the case of regional sports programming, I assume that a three month withdrawal of programming causes a permanent shift of the share s* of customers to DirecTV and, using an annual cost of capital of 15 percent, I calculate the minimum value of s* that would make this withholding profitable for News Corp. The formula for this value is now

(B.7) $s^* \geq .87 / \{1 + 27.67(y/(1-z)x)\}$.

Substitution of the CRA value of 3.46 for y/x and the value of 0 for z[70] into equation (B.7) yields

(B.8) $s^* \geq .0090$

This means that a temporary withdrawal of the local broadcast signal of a Fox station would be jointly profitable for News Corp. and DirecTV if the temporary withdrawal would cause a permanent shift of just under one percent of the subscribers in the market.

Furthermore, this calculation probably overstates the extent to which News Corp. would suffer losses of advertising revenue during a temporary withdrawal of retransmission consent and therefore also overstates the size of demand shift that would be required to make the temporary withdrawal profitable. The above calculation assumes that advertising revenues will drop during a temporary withdrawal of retransmission consent to reflect the lower viewership during the temporary withdrawal. This would be perfectly correct if the number of viewers of the local station was constantly monitored and the advertising fees that were paid in any period were therefore determined by the actual number of viewers during that period.

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[70] The likely share of the rival MVPD's customers that would continue to view the local station via its over-the-air signal during a temporary withdrawal is likely to be smaller than the share that would ultimately do so in response to a permanent withdrawal. To be conservative, I will simply assume that none of the MVPD's customers will be able to watch the local station during a temporary withdrawal. This results in a larger demand shift. However, I will explain below that a counteracting effect in the case of temporary withdrawals is that News Corp. may be able to avoid losses of advertising revenue altogether to the extent that it can time its temporary withdrawals to avoid sweeps periods. Therefore, while the size of the demand shift I will calculate will be larger than otherwise because I assume that z is equal to 0, it is reasonable to interpret it as an upper bound.

However, it is my understanding that viewership is measured during certain sweeps periods and advertising fees generally reflect viewership measurements made during these periods. Since the precise timing of a temporary withdrawal will be largely under News Corp.'s control,[71] it should be able to largely avoid temporary withdrawals during sweeps periods. To the extent this is true, it is possible that advertising revenues would be completely unaffected by temporary withdrawals of programming. In this case s* would be zero instead of .009. Therefore, .009 should be interpreted as an upper bound.

[71] Even if an existing contract expired during a sweeps period News Corp. would have the option of waiting until after the sweeps period was over to withdraw programming.

## APPENDIX C

***THE PREMERGER RATIO OF THE PROFIT MARGIN OF THE DOWNSTREAM FIRMS TO THE UPSTREAM FIRM IS ALWAYS LESS THAN ½ IN THE SYMMETRIC LINEAR CRA MODEL***

In Appendix B of its report, CRA presents a model of vertical integration with one upstream firm and two downstream firms where the downstream firms face a linear symmetric demand system and the upstream firm is assumed to make take-it-or-leave-it offers to the downstream firms. CRA chooses particular parameter values for the demand system and shows that the double marginalization effect outweighs the raising rivals' cost effect so that the net effect of a vertical merger on consumers is positive. In the main body of this Affidavit I observed that in the example calculated by CRA, the pre-merger ratio of the profit margin of the downstream firm to the profit margin of the upstream firm is .4. However in the actual cases of regional sports programming and retransmission consent for local broadcast signals, which CRA claims that this model sheds light on, CRA reports that the actual profit margin ratios are 12.11 and 3.46, respectively. Since the incentive for the upstream firm to raise rivals' costs should be higher when the value of this ratio is higher, this glaring discrepancy between the value of the ratio in CRAs example and the value of the ratio in real cases of interest throws the utility of the CRA example into question.

In this Appendix I will show that the fact that CRA's choice of parameter values yields a ratio of profit margins so different than the actual ratio of profit margins in the real cases of interest is no coincidence. Namely, I will show that in the linear symmetric example considered by CRA, that the ratio of the pre-merger profit margins of the downstream firms to the pre-merger profit margin of the upstream firm is always less than one half for any choice of

parameter values. Therefore, the model that CRA chose to work with is inherently incapable of producing a ratio of pre-merger profit margins anywhere near the actual values of these ratios in the real cases of interest.

I will begin by briefly describing the CRA model for the case of a general symmetric linear demand system. Assume that there is a single upstream firm, U, that sells an input to two downstream firms, D1 and D2, that produce differentiated products. The downstream firms need one unit of input to produce one unit of output. Assume that the upstream firm has zero costs of production and the downstream firms have zero costs of production other than purchasing the input from the upstream firm. Assume that the downstream firms face the demand system

(C.1) $$q_1 = a - bp_1 + rp_2$$

(C.2) $$q_2 = a - b p_2 + rp_1$$

where $p_i$ denotes the price that firm i charges and $q_i$ denotes the quantity that firm i sells. Assume that a, b, and r are all strictly positive and that $r<b$. Finally, let $w_i$ denote the input price that firm Di is charged.

The formal game that is meant to capture the situation where all firms are separately owned is as follows. In the first stage U offers input prices to D1 and D2. Then at the second stage D1 and D2 simultaneously announce prices in the downstream market taking the input prices as given.

Let $p_i^N(w_1, w_2)$ and $q_i^N(w_1, w_2)$ denote, respectively, the Nash equilibrium price and quantity of Di in the downstream market conditional on the input prices $(w_1, w_2)$. It is

straightforward to show that these are given by

$$p_1^N(w_1, w_2) = \{a(2b+r)+2b^2w_1 + rbw_2\}/\{4b^2 - r^2\} \tag{C.3}$$

$$p_2^N(w_1, w_2) = \{a(2b+r)+2b^2w_2 + rbw_1\}/\{4b^2 - r^2\}. \tag{C.4}$$

$$q_1^N(w_1, w_2) = \{ab(2b+r) - b(2b^2-r^2)\,w_1 + b^2rw_2\}/\{4b^2-r^2\} \tag{C.5}$$

$$q_2^N(w_1, w_2) = \{ab(2b+r) - b(2b^2-r^2)\,w_2 + b^2rw_1\}/\{4b^2-r^2\} \tag{C.6}$$

Let $\pi^N(w_1, w_2)$ denote the equilibrium profit of U. It is defined by

$$\pi^N(w_1, w_2) = w_1q_1^N(w_1, w_2) + w_2q_2^N(w_1, w_2) \tag{C.7}$$

Substitution of (C.3)-(C.6) into (C.7) yields

$$\pi^U(w_1, w_2) = \{ab(2b+r)\}w_1 - \{b(2b^2-r^2)\}w_1^2 + \{2b^2r\}w_1w_2 + \{ab(2b+r)\}w_2 - \{b(2b^2-r^2)\}w_2^2 \tag{C.8}$$

Straightforward calculus shows that the upstream firm's profits are maximized by the choice

$$w_1 = w_2 = a / 2(b-r). \tag{C.9}$$

Substitution of (C.9) into (C.3) and (C.4) shows that the equilibrium downstream prices are given by

(C.10) $$p_1 = p_2 = a(3b-2r)/2(b-r)(2b-r).$$

From (C.9) and (C.10) it follows that the profit margin of the downstream firms is given by

(C.11) $$p_i - w_i = a/2(2b-r).$$

The profit margin of the upstream firm is of course simply $w_i$. Let $\gamma$ denote the ratio of the profit margin of the downstream firm divided by the upstream firm. It is given by the formula

(C.12) $$\gamma = (p_i - w_i)/w_i.$$

Substitution of (C.9) and (C.11) into (C.12) yields

(C.13) $$\gamma = (b-r)/(2b-r).$$

Since

(C.14) $$0 < r < b$$

this implies that

(C.15) $$0 < \gamma < ½.$$