HSD and voice services.[119] Consequently, we focus only on Comcast's video margins in our analysis.

b) Diversion to Comcast Cable

106. If, as we are assuming, NBCU withholds its programming from online MVPDs but not traditional MVPDs, it is likely that a large share of any subscribers who switch to traditional MVPDs as a consequence would subscribe to an MVPD other than Comcast. In other words, the diversion ratio will almost certainly be substantially below one. The most reasonable starting point is to assume that each traditional MVPD would gain a share proportional to the MVPD's national market share.

107. Comcast's share of all MVPD subscriptions is 23.8 percent.[120] Hence, we model Comcast as gaining 23.8 percent of those subscribers, if any, who are induced to switch to a traditional MVPD when online MVPDs are denied access to NBCU's programming. That is, we set *Diversion to Comcast Cable* equal to 0.238.

2. The demand for Comcast high-speed data might fall, which could decrease Comcast's broadband profits.

108. As discussed in Section II.D.2 above, if households viewed television streamed over the Internet in patterns mirroring traditional television viewing, they would require very substantial amounts of capacity; subscribers to online MVPDs would be likely to use roughly 100 times

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[119] Subscribers to a hypothetical online MVPD would have already demonstrated a willingness to purchase video and broadband Internet access (as well as voice) services from separate providers. Therefore, there is little reason to expect that such subscribers would have a particular preference for triple-play packages. In addition, any triple-play profit would very likely be offset by losses that Comcast would suffer from HSD downgrading. The scenario analyzed below in which the losses suffered from HSD downgrading are assumed to be zero can be viewed as one in which the change in triple-play profit has been assumed fully to offset the actual change in HSD profits.

[120] MediaBusiness Corporation, "Media Census, All Video by DMA," 4th Quarter 2009.

more data than Comcast's average HSD user today. Such users would exceed usage caps currently put in place by Comcast and other broadband Internet access service providers including Cox, Charter, and Cable ONE.[121] Fundamental economic logic indicates that users demanding such markedly higher service levels would have to pay at least somewhat more for broadband access service, perhaps through the need to subscribe to a "high-volume" tier or service.

109. In the event that the withholding of NBCU content from an online MVPD induced some households to cease subscribing to an online MVPD, those households would no longer require the same level of broadband Internet access service. Some of those users would likely "downgrade" to a lower-volume broadband Internet access tier. Other users might terminate their broadband Internet access service entirely. And still other households dropping their online-MVPD subscriptions might choose to stay in the high-volume tier, although one might reasonably expect there to be few such households because their usage volumes would be dramatically lower once they ceased streaming programming from the online MVPD to their homes.

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[121] For example, Comcast currently places a usage cap of 250 GB per month on consumer HSD plans. *See* Comcast Corporation, "Announcement Regarding an Amendment to Our Acceptable Use Policy," *available at* http://www.comcast.net/terms/network/amendment/, *site visited* April 25, 2010. This is below the estimated 288 GB per month required to replicate traditional television viewing online, as calculated in Section II.D.2 above. For bandwidth usage caps by other providers, *see* Cox Communications, "Features and Limits of Service," September 29, 2009, *available at* http://ww2.cox.com/aboutus/policies/limitations.cox, *site visited* April 26, 2010; Charter Communications, "Acceptable Use Policy - Residential Customers," February 2009, *available at* http://www.charter.com/Visitors/Policies.aspx?Policy=6, *site visited* April 26, 2010; Cable ONE; Cable ONE, "CableONE.Net High Speed Internet Access Service Acceptable Use Policy," May, 2009, *available at* http://www.cableone.net/Pages/InternetAUP.aspx, *site visited* April 26, 2010.

Other broadband Internet access providers, such as AT&T and Verizon, do not currently have usage caps. However, current average broadband usage is far below that which would be required to replicate current television viewing using an online MVPD. So, across all providers, introduction of an online MVPD would cause a large increase in broadband usage, which could be expected to lead to positive price effects.

110. We take two approaches to modeling consumer behavior with respect to broadband Internet access services. First, as a limiting case, we assume that foreclosure has no effect at all on households' purchase decisions regarding broadband Internet access services. Under this approach, foreclosure is assumed to have no effects on Comcast's broadband profits. By ignoring the adverse effects that households' downgrading and terminating HSD services would have on Comcast, this assumption makes foreclosure appear to be more profitable than it actually would be.[122]

111. Our second approach allows for the possibility that consumers will change their purchasing behavior. For simplicity, under this approach we assume that all households that cancel their online-MVPD subscriptions reduce their purchases of broadband Internet access service by downgrading to a lower tier of service. Implicitly, we are assuming that the profit differential due to households that would drop their broadband Internet access service entirely instead of merely downgrading are offset by the profit differential due to households that would remain on a high-volume tier instead of downgrading.

112. As usual, we specify the effect on Comcast's profits as the relevant margin times the change in the quantity of the associated activity. Because we model those households that leave their online video providers as downgrading from the high-volume tier to the low-volume tier, the relevant margin is the incremental margin earned on high-volume subscribers relative to low-volume subscribers. We use *Incremental HSD Profit* to denote this amount. With this notation, the effect on Comcast's profit from the sale of high-speed data services is:

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[122] In terms of the mechanics of the accompanying spreadsheet (Backup Attachment 2), we implement this approach by assuming that *Incremental HSD Profit* is equal to zero.

$$\textit{Incremental HSD Profit} \times \textit{Number of Comcast HSD Downgraders}.$$

Because we assume that all households that leave the online MVPD downgrade their broadband Internet access service from the high-volume tier to the low-volume tier, then the *Number of Comcast HSD Downgraders* is equal to the change in online MVPD subscriptions induced by foreclosure times the share of those leaving the online MVPD who obtain their HSD service from Comcast. That is:

$$\textit{Number of Comcast HSD Downgraders} = \textit{Change in Online-MVPD Subscriptions} \times \textit{Comcast's HSD Share of Households Leaving Online MVPD}.$$

Combining the previous equations implies that the change in HSD profits is given by:

$$\textit{Incremental HSD Profit} \times \textit{Change in Online-MVPD Subscriptions} \times \textit{Comcast's HSD Share of Households Leaving Online MVPD}.$$

113. We have already discussed the reasons why the value of *Change in Online-MVPD Subscriptions* is likely to be low. We now discuss what values are reasonable for *Incremental HSD Profit* and *Comcast's HSD Share of Households Leaving Online MVPD.*

a) Incremental HSD Profit

114. The incremental profit from high-volume users can be defined as the incremental revenue generated by high-volume users minus the incremental costs generated by such users. Determining the incremental revenue is challenging because Comcast and other broadband Internet access providers generally do not charge residential customers based on usage volumes nor have we seen any plans indicating what they might charge if they did so. However, given that online-MVPD subscribers could be expected to consume as much as 100 times more data than do average users today, economic logic indicates that such households would have to pay at

least a somewhat higher price than other households. This point is further supported by the fact that all of Comcast's current HSD plans targeted at household consumers include a 250 GB/month cap on usage, a cap that a subscriber to an online MVPD would be likely to exceed.

115. Lacking specific information on the additional amount Comcast would charge for high-volume service, we consider two alternatives. First, and most conservatively, we consider a case in which the incremental revenue for HSD service just covers the incremental cost associated with providing such service, as calculated below. Second, we consider a case in which Comcast charges 1.5 times as much for the high-volume HSD tier, meaning that the incremental revenue is 50 percent of current HSD prices.[123]

116. It is worth noting that these methods of projecting incremental HSD revenues imply that, at most, the high-volume usage plan will cost 1.5 times current prices, despite the fact that high-volume users are projected to download roughly 100 times as much data as the average HSD subscriber today. In other words, the projected value of incremental revenue assumes that the price per gigabyte of data for the high-volume tier will be substantially lower than current Comcast prices per gigabyte.

117. A fall in the number of HSD customers as the result of a fall in the number of online-MVPD subscribers could reduce Comcast's costs, which would partially offset the loss in incremental revenues. We worked with Tony Werner, Chief Technology Officer of Comcast Cable, to estimate the magnitude of these incremental cost savings.[124] In particular, we asked Mr. Werner to model a situation in which: (a) 10 percent of all MVPD households would

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[123] Specifically, we use the current average price of ${{ }} as the low-volume price and 150 percent of ${{ }} (*i.e.*, ${{ }}) as the high-volume price.

[124] The model itself is included with our backup materials, as Comcast Attachment 1.

subscribe to an online MVPD absent foreclosure, and (b) 10 percent of the online-MVPD subscribers would depart the online MVPD if NBCU content were withheld.[125]

118. To complete the modeling, Mr. Werner assumed that, by the time this hypothetical scenario would take place: HSD usage by "low-volume" users will have grown to 20GB per month; the percentage of all television viewing in high-definition will have grown to 75 percent; overall broadband penetration will be 80 percent; and Comcast will serve 50 percent of the broadband households in its footprint.[126] Using these assumptions, Mr. Werner computed that online-MVPD subscribers would consume 471 GB of data per month.[127] Mr. Werner estimated that the hypothetical loss of 10 percent of the online-MVPD subscribers (who, by assumption, make up 10 percent of all MVPD households) would reduce network data demands by between seven and eight percent.[128] Based on current growth rates, Mr. Werner estimated that this would allow Comcast to save {{ }} of capital expenditures on its network.[129]

119. According to Comcast, its annual capital expenditures attributable to the HSD network

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[125] Each 10 percent figure was used only to pin down a change in data usage with which to undertake the calculation. In practice, we assume that the incremental cost is linear in the number of subscribers lost over the range evaluated in the foreclosure-profitability calculations in Table 2.

[126] Note that this 50-percent figure is within Comcast's footprint and, consequently, is not directly comparable to Comcast's nationwide HSD share, presented below.

[127] This figure combines subscribers' video needs with other Internet usage.

[128] Note that, for this calculation, Mr. Werner assumed that a household would be consuming seven hours of television per day. Changing this to eight hours per day increases the consumption to 535 GB per month but leads to only a small change in the implied reduction in data demands: 7.9 percent rather than 7.7 percent.

[129] Mr.Werner's model found that the hypothetical loss of 10 percent of an online MVPD's subscribers would lead to a 7.7 percent reduction in capacity requirement for Comcast's HSD networks. {{ }} However, after accounting for the fact that some households that leave the online MVPD would subscribe to Comcast's video services (and use the associated video on demand services, in particular), Mr. Werner determined that elimination {{ }} of capital expenditures was the most reasonable estimate for the net effect of the changes. (Tony Werner, Chief Technology Officer of Comcast Cable, April 23, 2010, interview.)

average ${{ }} (or ${{ }}).[130] To convert this number into an amount per subscriber leaving the online MVPD due to foreclosure (the relevant number to compare to the incremental revenue from those switching from the high- to low-volume tier), we note that the projected cost savings was based on the loss of one percent of MVPD households. The model assumes that Comcast will lose households in proportion to its share, so, because Comcast currently has just less than 23.6 million video subscribers, the reduction in Comcast subscribers is equivalent to just under 236,000 households nationwide.[131] Hence, the estimated savings in capital expenditure is equal to ${{ }} per household leaving the online MVPD. Amortizing this capital savings to determine the monthly equivalent (using a 10-percent annual discount rate)[132] yields a monthly incremental cost per subscriber switching between the low-volume and high-volume tier equal to ${{ }}

120. In our most conservative case, we set incremental HSD revenues equal to incremental HSD costs. In our second case, we combine the incremental HSD revenue of ${{ }} with this incremental cost estimate of ${{ }}. These two cases yield values of *Incremental HSD Profit* of ${{ }} and ${{ }} per month, respectively.

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130 Comcast Corporation, {{ }} (Comcast Attachment 2).

131 Comcast Cable, {{ }} (Comcast Attachment 4). Because we use current capital expenditures, we also use current Comcast MVPD subscribers in computing the cost per household leaving the online MVPD.

132 Comcast Corporation, {{ }} (Comcast Attachment 3). See *Israel-Katz Initial Declaration*, Section IV.A.4 for a discussion of the appropriate discount rate.

b) Comcast's HSD Share of Households Leaving Online MVPD.

121. We assume that the fraction of those households terminating their online MVPD subscriptions who rely on Comcast's HSD services is equal to Comcast's current nationwide HSD share, which is 21.1 percent.[133]

3. The demand for supplemental sites owned by Comcast could be affected, although the effect is likely to be small.

122. Just as some subscribers to online MVPDs might shift to sites owned by NBCU to access programming that is unavailable on the online MVPD, such subscribers might also switch to sites owned by Comcast Interactive Media, including Fancast (which shows NBCU content syndicated from Hulu and is therefore a destination to which users could potentially turn for some NBCU content that was no longer available on an online MVPD). Thus, a foreclosure strategy that leads to increased streaming of NBCU content on Fancast could increase the profits that Comcast earns from Fancast. In particular, {{

}}[134] However, recall that the wide range of values we use for *OnlineSuppProfit* covers the range between the profits that NBCU earns for ads viewed on Hulu

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[133] Comcast reported 15.9 million HSD subscribers at the end of 2009. (Comcast Cable, {{ }} (Comcast Attachment 5).) SNL Kagan reported 75.6 million HSD subs in 2009. (SNL Kagan, "U.S. High-Speed Data Projections, 2009-2020" (3rd Party Attachment 16).) The Kagan number includes cable and teleo (DSL plus fiber) HSD subs but excludes wireless and satellite HSD subs.

Commission staff have expressed the view that cable providers may have competitive advantages in offering high-speed Internet access services, which could result in their winning a higher share of high-speed data subscribers in the future. (Federal Communications Commission, *Connecting America: The National Broadband Plan*, March 2010, *available at* http://www.broadband.gov/download-plan/, *site visited* March 24, 2010 (hereinafter, *National Broadband Plan*), at 42.) If this view were correct, then our use of Comcast's current market share would overstate the profitability of foreclosure because Comcast's loss of profits from high-volume customers would be higher than we have projected.

[134] Amy Banse, President, Comcast Interactive Media, April 29, 2010, interview.

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{{ }} and the profits that NBCU earns for ads viewed on NBC.com{{ }} In the case of Fancast, {{

}}, so the combined revenue to Comcast and NBCU should be covered by the range used for *OnlineSuppProfit*. Hence, we do not include a separate term for Fancast's profits in the model.[135]

D. Relative Weights on NBCU and Comcast Profits

123. As discussed above, under the Commission staff's approach to modeling foreclosure, NBCU would act as if it maximized $\Delta\Pi_{NBCU} + s \times \Delta\Pi_{Comcast}$. To understand what value of s might be reasonable, it is important to understand the ownership and governance structure of the joint venture. Given GE's initial 49 percent interest in the joint venture, the effects of foreclosure on GE's profits are given by $.49 \times \Delta\Pi_{NBCU}$. Therefore, if $\Delta\Pi_{NBCU} < 0$, then foreclosure is against GE's interest no matter what the value of $\Delta\Pi_{Comcast}$. Stated another way, as long as it has a significant stake in NBCU, GE has strong incentives to protect its ownership interest by seeing that the joint venture does not engage in costly foreclosure strategies, regardless of any benefits to Comcast's cable operations. It is our understanding that, under terms of the agreement establishing the joint venture, the venture's directors and officers owe fiduciary duties to the joint venture and its members, including GE.[136] These duties would be violated if directors and officers made business decisions that intentionally sacrificed joint venture profits in order to increase Comcast's MVPD profits—as any foreclosure strategy

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[135] The range we use for *OnlineSuppProfit* covers {{ }}

[136] *See Newco I LC Agreement* at § 6.01(a).

necessarily would do. Moreover, GE would presumably have every incentive to enforce these fiduciary duty provisions. In summary, in the short term, while GE retains an equity interest, Comcast will be obligated to run the joint venture to maximize the profits of the joint venture. In other words, as long as GE retains an equity interest, s is equal to 0.[137]

124. In the long run, Comcast will bear 100% of the costs of a foreclosure strategy if it becomes the sole owner of the joint venture, at which point s will be 1.

125. To allow for the fact that the appropriate value of s is between 0 and 1 (depending on whether GE still has an ownership interest in NBCU at the hypothetical future date we are considering), we use values of 0, 0.5, and 1 in our calculations of $\Delta\Pi_{NBCU} + s \times \Delta\Pi_{Comcast}$ below.

E. Application of the Commission Staff Model Indicates that Foreclosure is Unlikely

126. Application of the Commission Staff's foreclosure model indicates that withholding of NBCU content from an online MVPD would not be profitable for any reasonable set of parameter values. To illustrate this fact, Table 2 presents a range of values for $\Delta\Pi_{NBCU} + s \times \Delta\Pi_{Comcast}$ expressed as the profit or loss from foreclosure per (pre-foreclosure) subscriber to the online MVPD. The numbers reported in the table are based on the full ranges of parameter values discussed above. Recall that foreclosure can be a profitable strategy only to the extent that $\Delta\Pi_{NBCU} + s \times \Delta\Pi_{Comcast}$ is positive. Negative values of $\Delta\Pi_{NBCU} + s \times \Delta\Pi_{Comcast}$ indicate that the joint venture would not have an incentive to harm online MVPDs.

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[137] One might worry that, in theory, Comcast could somehow pay GE to allow NBCU to be used to engage in foreclosure. But the two parties would have gains from trade only if the costs of NBCU were less than the benefits to Comcast's non-NBCU operations. This would be equivalent to taking $s = 1$ because the complete set of profit changes realized by both owners would be taken into account.

127. To provide a better understanding of the estimated profit effects of foreclosure, Table 2 reports the profit effects for NBCU operations and for Comcast's non-NBCU operations:

- The first row of Table 2 shows the change in NBCU's profits resulting from a foreclosure strategy, $\Delta\Pi_{NBCU}$.
- The second row shows the change in Comcast's profits, $\Delta\Pi_{Comcast}$.
- The third through fifth rows show the weighted average of the profit effects using different weighting assumptions (different values for *s*) as described above.

128. The different columns of the table report the values for the changes in profits (per original subscriber to the online MVPD) corresponding to different assumptions about the underlying parameter values:

- Column (1) uses the conservative values for *OnlineProgProfit*, *OnlineSuppProfit*, and *Incremental HSD Profit* and assumes that *Change in Online-MVPD Subscriptions* is equal to 0 percent.
- Column (2) is identical to Column (1) except that *Change in Online-MVPD Subscriptions* is assumed to be equal to 33 percent.
- Columns (3) and (4) are analogous to Columns (1) and (2), except that they make use of higher estimates of *OnlineProgProfit* and *OnlineSuppProfit*.
- Columns (5) through (8) are analogous to Columns (1) through (4) except that higher values of *Incremental HSD Profit* are assumed.

Table 2: Estimated Per-Subscriber Profits/Losses from Foreclosure

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129. Table 2 provides a clear depiction of our main result: over the entire range of reasonable parameter values, foreclosure is unprofitable. A foreclosure strategy leads to a loss of between ${{ }} and ${{ }} per online MVPD subscriber even in the long-run case where GE no longer has an ownership interest in NBCU and, hence, $s = 1$. In particular, even in the highly conservative bottom row of Column (2) —in which we assume that the joint venture fully internalizes the effect on Comcast's profits, that Comcast's HSD prices only rise to cover incremental costs, that *OnlineProgProfit* and *OnlineSuppProfit* are at the bottom of the range considered, and that withholding NBCU content causes 1/3 of the online-MVPD subscribers to depart (a fraction we consider far too high to be reasonable)—foreclosure would lead to a loss of more than {{ }} per online MVPD subscriber.

130. An alternative way to examine the incentive to foreclose is analogous to the analysis that the Commission staff performed in the News Corporation/DirecTV transaction and that we undertook in our initial report.[138] In particular, one can compute the critical value of *Change in Online-MVPD Subscriptions* at which the joint venture would be hypothesized to be indifferent between engaging in foreclosure and not. As shown in Table 3, even under the most conservative set of assumptions, the critical value of *Change in Online-MVPD Subscriptions* is greater than {{ }} percent, and in most cases it is substantially higher. The high critical values reported in Table 3 demonstrate that the joint venture would be very unlikely to have an incentive to foreclose an online MVPD. Lastly, note that we did not include the case of $s = 0$ in the table. When $s = 0$, the joint venture would not internalize any of the gains to Comcast's non-NBCU operations and, therefore, would have no incentive to foreclose, regardless of the value of *Change in Online-MVPD Subscriptions*.

[138] *See News Corp.-Hughes Order*, Appendix D: Technical Appendix; *Israel and Katz Initial Declaration*, §V.

Table 3: Critical Values for *Change in Online-MVPD Subscriptions*

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131. In addition to providing insights with respect to the costs and benefits associated with the foreclosure of an established online MVPD, the analysis above extends to the foreclosure of a new entrant. Specifically, the model can be used to analyze a hypothetical scenario in which a company has not yet begun to offer service to consumers but has a business model under which it expects to be able profitably to offer consumers an attractive value proposition absent foreclosure.[139]

132. The mechanics of projecting the costs and benefits of foreclosure per online-MVPD subscriber in the case of a new entrant are largely the same as the mechanics in the case of an established online MVPD.[140] For example, in each case, foreclosure would be costly to NBCU

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[139] If the entrant does not have a reasonable prospect of being profitable absent foreclosure, then that firm would pose little competitive threat to Comcast because the firm would be unlikely to survive and/or develop into a significant rival. Hence, Comcast would not have a financial incentive to engage in costly actions to weaken such an online MVPD.

[140] As should be evident, discussions of the number of subscribers to the new entrant refer to the number of subscribers after the firm has commenced offering service to consumers.

because it would forgo post-foreclosure profits from the sale of its programming to the online MVPD. The discussion of margins presented above would be relevant to the case of a new entrant as well.[141] And the arithmetic calculations would be the same. The equations and parameter values for projecting the effects on over-the-air viewing of NBCU's broadcast networks and on NBCU and Comcast websites is also the same for hypothetical scenarios in which there is an established online MVPD or a new entrant.

133. Although the overall mechanics of projecting the costs and benefits of foreclosure per online-MVPD subscriber are largely the same in the cases of a new entrant and an established online MVPD, there are some places where differences could arise between the two scenarios:

- In the new-entrant scenario, Comcast's cable operations would lose fewer subscribers with foreclosure than without. In contrast, in the established-competitor scenario, foreclosure would lead to Comcast's gaining new subscribers. The distinction between whether Comcast loses fewer subscribers or gains more is potentially relevant because of the differential effects on customer installation costs: when Comcast retains customers, it does not bear the installation costs that it would have to incur if it attracted new customers. Because we took a conservative approach and did not subtract net installation costs from the margin that Comcast cable would earn from additional subscribers in the established-competitor scenario, the numbers derived above for that case are appropriate for the new-entrant scenario.

- In the new-entrant scenario, Comcast's HSD operations would gain fewer subscribers with foreclosure than without. In contrast, in the established-competitor scenario,

[141] As above, we consider a situation in which the online MVPD is willing to pay compensation to NBCU for its content that is in line with what is paid by other MVPDs.

foreclosure would lead to Comcast's losing existing HSD subscribers. Here, too, the difference raises issues about the treatment of installation costs and capital expenditures on network capacity.

Recall that, in the established-competitor scenario, we took two approaches to consumer switching. We can take similar approaches here. The first approach is to assume that no one switches (or, equivalently, that the HSD margin is zero), which makes foreclosure look more profitable than it is because one would expect foreclosure to reduce the number of Comcast HSD subscribers and Comcast's HSD profits. Under this approach, installation costs are irrelevant. The second approach is to assume that all households that would become subscribers to the online MVPD would upgrade their broadband Internet access services. We assume that there would be no installation costs associated with a broadband Internet access service upgrade that involved greater total data consumption but no change in the maximum data rate.

Turning to capital expenditures on network capacity, recall that Comcast's HSD business is growing and Comcast would be investing in its network whether or not online MVPDs exist. Hence, in both the established-competitor and new-entrant scenarios, any effects of foreclosure on desired network investment could be accommodated by slowing the rate of investment. Consequently, the associated capital cost savings are essentially the same in the two scenarios.

134. For the reasons just discussed, the results for the established-competitor scenario reported in Tables 2 and 3 provide estimates of the effects that foreclosure of a new entrant would have on NBCU and Comcast profits. These results demonstrate that, in the new-entrant scenario, too,

Comcast would be very unlikely to be able profitably to induce NBCU to withhold its content from online MVPDs in order to increase Comcast's non-NBCU profits.

IV. CONCLUSION

135. As long as GE owns a percentage of NBCU, the structure of the proposed deal prevents the sacrificing of NBCU profits to benefit Comcast's non-NBCU operations. Even if Comcast acquires complete ownership of NBCU, application of the Commission staff's approach to analyzing foreclosure incentives demonstrates that foreclosure of actual or potential online MVPDs would be very unlikely to be profitable. This conclusion is driven by the facts that: many online-MVPD subscribers would remain with their provider while NBCU would lose substantial amounts of revenue per subscriber; of those online-MVPD subscribers who did leave their video providers, only a small percentage would go to Comcast given its limited geographic footprint and given the fact that, within its footprint, Comcast faces several traditional MVPD rivals; and Comcast's high-speed data operations would suffer lost profits as the result of decreased demand for broadband Internet access. Coupled with the fact that it is speculative whether an online MVPD will emerge over the next several years, this analysis indicates that the proposed transaction does not pose a significant threat to competition in the distribution of long-form, professional-quality video programming, notably the provision of such programming via the Internet.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 4th day of May, 2010.

Mark Israel

Michael L. Katz

An Economic Analysis of Competitive Benefits from the Comcast-NBCU Transaction

May 4, 2010

Gregory L. Rosston, Ph.D.

Table of Contents

I. Introduction

A. Qualifications

1. I am Deputy Director of the Stanford Institute for Economic Policy Research ("SIEPR") and Deputy Director of the Public Policy program at Stanford University. I am also a Lecturer in the Public Policy program and have taught in the Economics department at Stanford University. I received my Ph.D. and my M.A. in economics from Stanford University and my A.B. with Honors in economics from the University of California, Berkeley. My specialties include industrial organization, antitrust, and regulation with an emphasis on telecommunications. I served at the Federal Communications Commission ("FCC") for three and one-half years as Deputy Chief Economist, as Acting Chief Economist of the Common Carrier Bureau, and as a Senior Economist in the Office of Plans and Policy. In these positions, I had significant involvement with, among other things, the FCC's implementation of areas of competition and Internet policy.

2. My research focuses on telecommunications and competition policy. I have been the author or co-author of a number of articles relating to Internet and telecommunications competition policy. I have also co-edited two books on telecommunications, have helped organize several telecommunications conferences, serve as an associate editor of Information Economics and Policy, a leading field journal in the economics of communication, and serve on the Board of the Telecommunications Policy Research Conference.

3. Since returning to Stanford from the FCC, I have regularly taught courses that involve telecommunications and competition policy. Several times I have taught a course entitled "Antitrust and Regulation," and I have also taught "Economics of the Internet" and "Economic Policy Analysis" that have focused on telecommunications, regulation, and antitrust issues.

4. I have testified as an independent academic expert on competition and telecommunications matters in hearings at the FCC, the United States Senate Commerce Committee, the House Commerce Committee, the California State Senate Committee on Banking, Commerce and International Trade, and the National Telecommunications and Information Administration of the Department of Commerce. I have also advised companies and organizations on antitrust matters and served as an expert witness on competition issues,

including testifying before the Copyright Arbitration Review Panel with regard to the allocation of cable distant signal copyright royalties. My curriculum vitae is included as Appendix 1.

B. Assignment

5. Comcast Corporation ("Comcast") and General Electric Company ("GE") propose to create a joint venture that combines the broadcast, cable programming, movie studio, theme park, and online content businesses of NBC Universal ("NBCU") with the cable programming and certain online content businesses of Comcast.[1] Initially, the joint venture will be majority-owned (51 percent) and managed by Comcast while will GE remain a minority partner (49 percent) in the joint venture. Over a period of three and a half to seven years, Comcast has the option to acquire GE's 49 percent ownership interest.[2] As described in the Public Interest Statement, GE will have consent rights with respect to certain non-ordinary course matters, and the joint venture agreement provides that Comcast executives serving as directors or officers of the joint venture owe fiduciary duties to the joint venture and its members, including GE.[3] As explained below, the joint venture will enable Comcast to obtain greater and more efficient access to NBCU content at arm's length terms for uses Comcast decides are appropriate without protracted delays or failures to reach agreements.[4]

6. I have been asked by counsel for Comcast and GE to analyze, from an economics perspective, the procompetitive effects that are likely to result from the Comcast-NBCU

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[1] See *In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses or Transfer Control of Licensees*, MB Docket No. 10-56, Applications and Public Interest Statement, Lead Application File Nos. BTCCDT-20100128AAG (MB), SES-ASG-20100201-00148 (IB), and 0004101576 (WTB) (filed Jan. 28, 2010) ("Public Interest Statement").

[2] See Public Interest Statement, pp. 12, 15.

[3] See Public Interest Statement, p. 14 and App. 4, § 6.01.

[4] Pricing for transactions between Comcast and the new entity are defined in the agreement as "terms that are no less favorable to the Company [the joint venture] . . . than those that would have been obtained in a comparable transaction by the Company . . . with an unrelated Person." See Public Interest Statement, App. 4, p. 93 (LLC Agreement Section 10.02(a)). As discussed extensively below in Section V, it is important to note that unrelated firms may not come to agreements because of differing views about uncertain future outcomes and fear of ex post opportunism. Because Comcast's distribution assets and NBCU will share common ownership, they are less likely to suffer from these concerns and more likely to come to an agreement quickly and efficiently whereas unrelated parties may delay substantially, agree to a sub-optimal contract, or even fail to come to an agreement and not realize the efficient gains from trade. As a result, "arm's length" terms and conditions has a slightly different interpretation here (and in the remainder of the paper) than simply assuming that all trades that Comcast and the new entity make would also be made by unrelated parties. For the purposes of this paper, I use the term "NBCU content" to refer to content for which NBCU has broad rights to control the distribution.

transaction. In particular, I examine the ways in which the transaction will facilitate increases in output through simplified negotiations, aligned incentives, and reduced costs.

II. Summary of Opinions

7. In this paper, I provide an economic analysis of the likely procompetitive efficiencies from the proposed transaction. The proposed transaction is primarily a vertical combination of NBCU's content with Comcast's distribution platforms, although there are some minor horizontal aspects as well. The transaction is likely to result in synergies and changes in incentives that will stimulate increased investment by Comcast in programming and distribution, and this, in turn, will broaden and accelerate innovation in video distribution platforms, expand the range of video programming services, and increase the quantity, quality, and convenience of video viewing by consumers. I address the likely effects of the transaction on Comcast's development of innovative distribution channels (including on cable and online) and the quantity and quality of content created by the joint venture. Beyond the benefits described in this paper, Applicants offered several voluntary commitments to provide additional consumer benefits.[5] Quantification of the costs and benefits of these commitments is beyond the scope of this paper, which focuses on the economic benefits inherent in the proposed new business structure. However, the tangible benefits of the voluntary commitments in terms of diversity, localism, and competition are discussed in the Public Interest Statement.[6]

8. My principal findings are:

- Comcast plans to make substantial investments in NBCU's programming. Comcast's past investments in its networks demonstrate its ability and willingness to invest in programming. Although Comcast has a limited array of programming, it has made substantial investments in launching networks,

[5] For example, among other things, Applicants made commitments regarding local programming, public, educational, and governmental ("PEG") programming, children's programming (including increased offerings and on-screen program ratings and parental controls), Spanish language programming, and adding at least two independent channels to Comcast's digital cable lineup each year for three years. They also committed to continue NBCU's policy of journalistic independence. See Public Interest Statement, pp. 10, 36-69, 112-113, and App. 8.

[6] See Public Interest Statement, Executive Summary ("Not only will the transaction yield the public interest benefits of diversity, localism, competition, and innovation, but the Applicants also propose to enhance those benefits by offering an unprecedented array of public interest commitments."); see also Public Interest Statement, App. 8; Public Interest Statement, App. 9 (Expert Declaration of Matthew L. Spitzer Concerning Diversity and Localism Issues Associated with the Proposed Comcast-NBCU Transaction, Jan. 26, 2010).

acquiring networks, and increasing the programming budgets of its networks. Comcast executives expect to have a similar approach to investment in the NBCU programming that will be part of the joint venture. Comcast's investments in programming will benefit consumers.

- Protracted negotiations and failures to reach agreements between content companies and distribution companies, such as Comcast, have delayed and hindered the development of innovative distribution platforms and the distribution of content through these platforms, to the detriment of consumers.

- Comcast's acquisition of a 51% ownership in, and control of, NBCU will facilitate and accelerate negotiations between NBCU (content) and Comcast (distribution). Consumers will benefit because Comcast management will have the ability and incentive to invest to increase content availability through a variety of different platforms, services, and business models.

- The quantity and variety of NBCU programming will help to facilitate experimentation by Comcast for its future investments in program delivery platforms, which will lead to the development of successful new business models.

- The likely changes by the new entity will expand output and increase incentives to develop and distribute quality content in a variety of ways to make consumers better off than they would be without the transaction.

- In response to changes and increased output by the new entity, competitive forces will likely encourage content and distribution competitors to increase the quantity and quality of their services, enhancing competition and further increasing the benefits to consumers.

- The proposed transaction will result in additional efficiencies from sharing of resources, cross-promotions, and elimination of double marginalization that will expand the quantity and quality of output to the benefit of consumers.

9. The remainder of my declaration proceeds as follows. Section III discusses Comcast's willingness and incentive to increase investment in programming. Section IV describes the challenges Comcast has faced in developing new platforms and services because of difficulties in reaching agreements with content providers. Section V discusses how – from an economic perspective – the proposed transaction is likely to help overcome these challenges and lead to more rapid adoption of new platforms for content delivery. Section VI discusses additional

anticipated efficiencies from the combination of NBCU and Comcast. Section VII provides conclusions.

III. Increased Investment in Programming

10. After the proposed transaction, Comcast will have the ability and incentive to increase investment in and expand NBCU's programming. Comcast's leadership has stated its willingness to invest in NBCU's programming to "enable the new NBCU to better serve consumers and advance the Commission's policy goals of diversity, localism, competition, and innovation."[7] Although Comcast has a limited array of programming, it has made substantial investments in acquiring networks and increasing the programming budgets of the networks it controls.

11. Comcast's ability and willingness to invest in programming is exemplified by its investments in the networks it controls. For example, Comcast has had a good track record of investing to expand and increase the attractiveness of programming on E! and Style.[8] Since the launch of the Style network in 2001, Comcast has made significant investments to develop the channel and make it viable; Style's programming expense was {{ }} million in 2004 and increased to {{ }} million in 2009. This increased investment in Style contributed to the network's substantial increase in ratings between 2005 and 2009.[9] During the same time period, Comcast increased E!'s annual programming expense from {{ }} million in 2004 to {{ }}

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[7] See Public Interest Statement, Executive Summary ("This transfer of control [of NBCU from GE to Comcast], along with the contribution of Comcast's complementary content assets, will enable the new NBCU to better serve consumers and advance the Commission's policy goals of diversity, localism, competition, and innovation."); see also Testimony of Brian L. Roberts, "Consumers, Competition, and Consolidation in the Video and Broadband Market," Subcommittee on Communications, Technology, and the Internet, Committee on Commerce, Science and Transportation, United States Senate, Mar. 11, 2010, pp. 63-67 (Appendix #3); Meg James, "Comcast Gets Its Wings: Deal to Take Over NBC Universal Affirms Cable TV's Ascendant Role," Los Angeles Times, Dec. 4, 2009 ("One question is whether Comcast would be willing to make the big investments in programming, where there are more misses than hits. On Thursday, Comcast executives said they would spend more, including for the NBC network, which has languished in fourth place for several seasons . . . . 'One of the things that we are most committed to, both GE and Comcast, is trying to return [NBC] to the No. 1 position,' Roberts told reporters in a conference call. 'There is a desire to invest and grow and compete well.'").

[8] See Comcast Corp., {{ }} (Comcast Attachment #1).

[9] Style's household total day ratings increased [[ ]] from 2005 to 2009, and the average number of households viewing the network [[ ]] in that period. (2005 is the first full year in which ratings for the network were available.) See [[ ]] (Comcast Attachment #2).