current provider due to lack of access to the withheld content.[23] Comcast's local share in six of ten DMAs is sufficiently large—that is, greater than 39 percent—to make foreclosure profitable with trivial departure rates, as Comcast's own economists admit.

12. When Comcast's economists criticized my report, they pointed out that my market share estimates based on SNL Kagan failed to include subscribers of the very smallest MVPDs.[24] Table 1 reproduces and updates the table from my original report[25] by including those small MVPDs.

TABLE 1: COMCAST'S MARKET SHARE BY DMA, SNL KAGAN

DMA	Original Total MVPD Subscribers	Original Comcast Share	Revised Total MVPD Subscribers	Revised Comcast Share
Chicago, IL	2,998,277	63.2%	3,074,209	61.6%
Philadelphia, PA	2,417,260	68.5%	2,613,617	63.4%
San Francisco-Oakland-San Jose CA	2,099,892	59.3%	2,153,566	57.8%
Washington, DC	1,965,058	48.0%	2,080,408	45.3%
Miami-Fort Lauderdale, FL	1,307,166	61.2%	1,349,085	59.3%
Hartford, CT	757,617	40.7%	787,465	39.1%

As Table 1 shows, inclusion of those minimal subscribers does not change Comcast's market share in any material way. For example, Comcast's share in Chicago declines from 63.2 percent to 61.6 percent when I consider all subscribers.

13. Even so, when I analyzed Comcast's economists' foreclosure analysis, I relied on their estimates of Comcast's local market shares—and not on my own estimates. By their own, original calculations, the critical foreclosure share needed to induce Comcast to deny access to MVPD rivals in these six DMAs is less than {{█}} percent. If denial of access to a local NBC affiliate would not generate a share shift of {{█}} percentage points—as Comcast's economists argue based on a handful of irrelevant anecdotes—then a local NBC affiliate does not constitute

23. I explain why Comcast's extant market share provides a conservative estimate below.
24. *Israel-Katz Reply*, ¶ 23 ("However, in using this source, Dr. Singer mistakenly omitted the subscribers accounted for by the 'other cable' group.").
25. *Singer Report* at table 6.

must-have programming. Stated differently, Comcast and its economists are effectively challenging the Commission's classification of broadcast programming as must-have.

14. Moreover, Comcast has already weakened competition in Philadelphia and in Chicago, the latter via its excessive pricing of CSN-Chicago. To the extent that the pass-through rate is close to 100 percent—a reasonable assumption given DirecTV's and Dish Network's lack of market power—Comcast's major rivals have already raised their subscription prices significantly relative to a world in which an independent network owned the RSN. If Comcast raises the price of the local NBC affiliate, Comcast's rivals would have to raise their subscription prices once more, thereby allowing Comcast to raise its subscription prices. The conditions that induced Comcast to foreclose rivals in Philadelphia and Chicago from regional sports programming are identical to the conditions that will inform the merged firm's pricing and access decisions to NBCU's local broadband affiliates vis-à-vis its rivals in those same markets. Indeed, by previously impairing competition in those same markets, the competitive circumstances for another price increase may be even worse.

B. Comcast and Its Economists Fail to Understand How Comcast's Current Market Share Likely Understates the Diversion Ratio

15. Because of Comcast's clustering strategy, its market share likely underestimates the probability that a non-Comcast customer departing after losing Comcast-exclusive content selects Comcast as her provider. Comcast's economists disagree, arguing that my "assertion is contradicted by the data, which show that diversion to Comcast is substantially less than proportional."[26] Of course, the data to which they refer come from a handful of anecdotes that cannot inform the likely share shift here: In each anecdote, *only one* DBS rival *temporarily* lost access to a local broadcast network, thereby allowing intra-DBS-provider substitution. Should

26. *Israel-Katz Reply*, ¶ 23. They ultimately allow "for a diversion rate from DBS providers to Comcast equal to 1/3 of what would be implied by proportional diversion based on market shares." *Id.* ¶ 16.

Comcast merge with NBCU without restriction, *all* rivals could *permanently* lose access to a local broadcast network, thereby mooting substitution from one Comcast rival to another. In what follows, I provide numerical examples that show how Comcast's current shares likely understate the probability that a departing customer selects Comcast.

1. Use of current market shares does not consider Comcast's coverage of cable households within a DMA

16. Consider two competitive scenarios. In Scenario 1, Comcast has 60 percent of MVPD subscribers and passes 90 percent of households in the DMA. Thus, Comcast's market share among the homes that it actually passes is two thirds (equal to 0.6/0.9). If Comcast refuses to license must-have programming to *all* MVPD rivals in the DMA, then the probability of a non-Comcast customer departing after losing Comcast-exclusive content and switching to Comcast is 75 percent (equal to the ratio of non-Comcast customers passed to non-Comcast customers,[27] or [0.4 - 0.1]/0.4). In this scenario, Comcast's current market share of 60 percent *under*estimates the actual probability of 75 percent.

17. In Scenario 2, Comcast has 60 percent of MVPD subscribers but passes only 60 percent of households in the DMA. Thus, Comcast's market share among the homes that it actually passes is 100 percent (equal to 0.6/0.6). If Comcast refuses to license must-have programming to *all* MVPD rivals in the DMA, then the probability of a non-Comcast customer

27. Mathematically, in this section I am accusing Comcast's economists of failing to understand conditional probability. Let S represent the set of Comcast customers, P the set of homes passed, and Ω the set of homes in the DMA; we may interpret these sets as probability events S □ P in the probability space Ω. The set of homes departing Dep after foreclosure of all rivals is the set of non-Comcast customers, or Dep = $\Omega \setminus S$, so the probability of departure is $\mathbb{P}(\text{Dep}) = \mathbb{P}(\Omega) - \mathbb{P}(S) = 1 - \mathbb{P}(S)$. The set of homes defecting to Comcast Def is the set of non-Comcast customers whose homes are passed, or Def = $P \setminus S$, so the probability of defecting is $\mathbb{P}(\text{Def}) = \mathbb{P}(P) - \mathbb{P}(S)$. Clearly, Def □ Dep so $\mathbb{P}(\text{Def} \cap \text{Dep}) = \mathbb{P}(\text{Def})$. From the definition of conditional probability, a non-Comcast customer's probability of defecting to Comcast after departing a rival MVPD is

$$\mathrm{P}(Def \mid Dep) = \frac{\mathrm{P}(Def \cap Dep)}{\mathrm{P}(Dep)} = \frac{\mathrm{P}(P) - \mathrm{P}(S)}{1 - \mathrm{P}(S)},$$

or the ratio of non-Comcast customers passed to non-Comcast customers.

switching to Comcast conditional on leaving her MVPD due to lack of access to the withheld content is 0 percent (equal to [0.4 - 0.4]/0.4). None of the potential customers resides within Comcast's footprint. In this scenario, Comcast's current market share of 60 percent provides an *upwardly* biased estimate of the relevant probability (equal to 0 percent). More formal analysis shows that this kind of upward biasing only happens when Comcast's market share is exactly equal to the number of homes it passes.[28] Because of the bias demonstrated here, a careful application of the Commission's foreclosure model should consider Comcast's share of homes passed in the DMA—a feature neglected by Comcast's economists.

2. By consolidating its footprint within the relevant DMAs, Comcast has increased the probability of diversion beyond what is implied by its market shares

18. To the extent that Scenario 1 more reasonably approximates the market structure in the affected DMAs than Scenario 2, diversion to Comcast among non-Comcast customers leaving another MVPD would be more than proportional to Comcast's current shares. Comcast has engaged in a series of acquisitions and swaps, including the acquisition and swaps with Time Warner involved in the Adelphia transaction, to consolidate a cluster of homes passed in the DMA. Table 2 shows shares of cable households passed by Comcast for each of the six DMAs in which Comcast has a market share in excess of 39 percent.

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28. Using the same notation, first notice Comcast's economists use $\mathbb{P}(S)$ where mathematics only justifies the use of $\mathbb{P}(Def \mid Dep)$. To see why $\mathbb{P}(S)$ generally understates $\mathbb{P}(Def \mid Dep)$, observe that $\mathbb{P}(P) \geq \mathbb{P}(S)$, so if $\mathbb{P}(P) > \mathbb{P}(S)$ then $\mathbb{P}(Def \mid Dep) > \mathbb{P}(S)$ and if $\mathbb{P}(P) = \mathbb{P}(S)$ then $\mathbb{P}(Def \mid Dep) \leq \mathbb{P}(S)$. For suppose $\mathbb{P}(P) > \mathbb{P}(S)$ but that $\mathbb{P}(Def \mid Dep) = [\mathbb{P}(P) - \mathbb{P}(S)] / [1 - \mathbb{P}(S)] \leq \mathbb{P}(S)$. Then $\mathbb{P}(P) \leq -[\mathbb{P}(S)]2$, which is a contradiction since probabilities are nonnegative. Alternatively, if $\mathbb{P}(P) = \mathbb{P}(S)$ then $\mathbb{P}(Def \mid Dep) = 0$. As Table 2 shows, the latter scenario either is rare or does not occur.

TABLE 2: COMCAST'S SHARE OF HOMES PASSED BY CABLE BY DMA

DMA	Homes Passed By Wireline Cable (1)	Homes Passed By Comcast (2)	Comcast Share of Homes Passed (3) = (2) / (1)	Comcast MVPD Share
Chicago, IL	2,550,810	2,586,681	98.6%	61.6%
Philadelphia, PA	2,138,899	2,471,138	86.6%	63.4%
San Francisco-Oakland-San Jose CA	2,164,883	2,317,172	93.4%	57.8%
Washington, DC	1,220,327	1,711,608	71.3%	45.3%
Miami-Fort Lauderdale, FL	1,375,000	1,538,222	89.4%	59.3%
Hartford, CT	712,321	1,068,941	66.6%	39.1%

Source: Warrens, July 2010.

It is worth noting that in all but the Miami DMA, at least one Comcast system failed to report its homes passed data to Warren's, thereby potentially understating Comcast's total homes passed in the DMA. Importantly, in four of the DMAs—Chicago, Philadelphia, San Francisco, and Miami—the market structure (roughly 90 percent homes passed by Comcast, 60 percent Comcast market share) is closely approximated by Scenario 1. Even in the two markets where Comcast passes only 66 and 71 percent of homes (Hartford and Washington, respectively), Comcast's market share likely understates the relevant probability for the same reason, as many of the homes passed by Comcast in those markets are not yet served by Comcast. And as I demonstrated above, when Comcast passes nearly all homes in the DMA, the current market shares understate the probability at which a non-Comcast customer would select Comcast conditional on leaving her MVPD due to lack of access to programming.[29] Intuitively, there is no chance that a defecting customer would switch to Time Warner or some other out-of-region cable operator. Comcast's economists failed to consider homes passed data in their foreclosure analysis.

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29. Using the same notation, the total bias $\mathbb{P}(\text{Def} \mid \text{Dep}) - \mathbb{P}(S) = [(\mathbb{P}(S))2 - 2\mathbb{P}(S) + \mathbb{P}(P)] / [1 - \mathbb{P}(S)]$ rises linearly as the number of homes passed at a rate of $1 / [1 - \mathbb{P}(S)]$.

3. Comcast's preferred anecdotes of diversion based on short-term losses of broadcast stations by Dish Network are not informative

19. As I explained in my report, the original Katz-Israel study relied on four recent retransmission disputes involving Dish Network only. Because DirecTV (and other MVPDs) had access to the broadcast network during these disputes, that Comcast's gains were minimal should come as no surprise. Moreover, three of those disputes lasted for between two and three days, which is an unreasonably short period in which to expect customers to change MVPDs and thus an unreasonably short period in which to measure the "actual departure share" were Comcast to withhold NBCU's O&O affiliates from all rival MVPDs on a permanent basis. Comcast's economists have yet to rebut these criticisms.

C. Comcast's Economists Revised Their Critical Departure Rates, Purportedly in Light of "Recent Marketplace Developments"

20. In their original report, Comcast's economists estimated critical departure rates {{[REDACTED]}} for both temporary and permanent foreclosure strategies. In their reply, the critical departure rates for temporary foreclosure strategies are adjusted upward by a factor of roughly {{[REDACTED]}} and permanent foreclosure strategies are taken off the table. Drs. Israel and Katz offer three rationales for this radical revision: First, they cite a new retransmission agreement between DirecTV and NBCU, which purportedly extends retransmission rights from {{[REDACTED]}}.[30] Second, they cite an empirical analysis presented by Dish Network, which purportedly "impl[ies] that the diversion rate to Comcast was approximately zero."[31] Third, they argue that because the longest dispute between Comcast and Dish Network (involving Fisher) lasted only six months, any analysis of the profitability of permanent foreclosure strategies

30. *Israel-Katz Reply*, ¶ 15.
31. *Id.* ¶ 16.

would be infeasible, as it would be impossible to compare the critical departure rate to the actual departure rate for a longer period.[32] None of these rationales is convincing.

1. There is no basis for estimating a new critical departure rate in light of the NBCU-DirecTV retransmission agreement

21. Comcast and its economists have not produced NBCU's new retransmission agreement with DirecTV. Without access to the precise terms, one cannot be sure that NBCU's new retransmission agreement with DirecTV prevents the merged firm from raising prices on DirecTV or from requiring DirecTV to purchase lesser networks as a condition of getting the best price for NBCU's 10 O&O affiliates. For example, if the agreement fails to specify rates but instead contains language that the parties will "negotiate in good faith," then nothing would prevent Comcast from seeking extraordinary prices. Alternatively, if the agreement contains a termination right by NBCU, then again nothing would prevent Comcast from seeking price increases. Or perhaps the agreement grants DirecTV access to NBCU's must-have programming *conditional* on DirecTV paying inflated rates for NBCU's lesser programming; if so, and if DirecTV refuses to comply, then there is no assurance that Dish Network's customers could switch to DirecTV to watch the withheld must-have programming. Even if the agreement locks down prices for NBCU's local O&O affiliates through {{[REDACTED]}}, the fact that NBCU rushed to finalize an agreement in the middle of 2010 for rates pertaining to {{[REDACTED]}} suggests that NBCU does not believe that Comcast can be trusted with future negotiations—in which case the prospect of foreclosure of both DBS rivals is simply kicked four years into the future.

22. Finally, even if the agreement preserves a disgruntled Dish Network customer's option to switch to DirecTV in search of the withheld content, it does nothing to preserve her option of switching to Verizon FiOS or AT&T U-Verse to obtain a triple-play bundle

32. Id. ¶ 17.

comparable to Comcast's—a valuable option that could be degraded if Comcast withheld NBC affiliates from AT&T or Verizon. DBS rivals are somewhat impaired in the ability to compete against cable operators because of their lack of a viable broadband option and certain cable operators' use of penalty pricing for standalone cable modem service.[33] Indeed, many analysts believe that, by virtue of FiOS's and U-Verse's comparable triple-play offerings, FiOS and U-Verse present the greatest competitive restraint on a cable operator's market power in the future.[34] Unfortunately, no NBCU-DirecTV retransmission agreement can preserve that option after the merger.

2. There is no basis for estimating a new critical departure rate in light of the actual diversion rate experienced by Comcast around the Fisher-Dish Network dispute

23. The diversion to Comcast following Dish's dispute with Fisher Broadcasting does not prove that the proportional assumption based on current market shares is aggressive, as Comcast's economists assert. As explained above, Comcast's ability to foreclose both DBS operators would still be feasible, and if successful, would preclude a departing Dish Network customer from switching to DirecTV (and vice versa) to obtain the withheld content. Even if the new NBCU-DirecTV retransmission agreement prevented the merged entity from raising prices on NBCU's O&O affiliates to DirecTV, nothing in that agreement would prevent Comcast from

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33. For example, Comcast charges a penalty price for customers who seek to purchase standalone cable modem service. *See* Comcast products, *available at* https://www.comcast.com/shop/buyflow2/products.cspx ("This special price [for broadband Internet] is for customers who currently subscribe to Comcast Cable or Comcast Digital Voice® service.").

34. *See, e.g.*, Ian Olgeirson, et al., Broadband Technology, SNL Kagan, Mar. 19, 2009, at 16 ("Cable's grip on the video market further loosened in the fourth quarter as telcos, *and to a lesser extent DBS*, continued to grab market share from the incumbents. According to SNL Kagan analysis of the sector, U.S. telco and DBS industries signed on an estimated 575,000 and 199,000 net new subscribers, respectively, while the cable lost 668,000 customers in the quarter.") (emphasis added); Anders Bylund, Comcast's growth slows as pressure from FiOS, U-Verse ratchets up, ARS TECHNICA, Oct. 25, 2007, *available at* http://arstechnica.com/old/content/2007/10/comcasts-growth-slows-as-pressure-from-fios-u-verse-ratchets-up.ars ("It looks like the vaunted 'triple-play' packaging has picked most of the low-hanging fruit already. One triple-play customer adds three RGUs—one each for voice, data, and video services. Last year, cable companies were fairly unchallenged in three-way offerings, but as Verizon and AT&T roll out high-speed networks capable of streaming a full range of video services into the home, that monopolistic advantage is getting lost.").

degrading the quality of the NBC signal carried by DirecTV relative to the quality of the NBC signal carried by Comcast. For example, if Comcast were to move national sporting events from NBC to an exclusive Comcast Internet portal, then departing Dish Network customers who valued that content would not switch to DirecTV.

3. There is no basis to abandon the permanent foreclosure analysis because the longest known dispute between Dish Network and a broadcaster was six months

24. Comcast has dug in its heels on CSN-Philadelphia for the long term, even vowing to challenge the FCC's recent order ending the terrestrial loophole in court. Yet Comcast's economists argue that it is impossible to assess the profitability of denying NBCU's O&O affiliates to rival MVPDs in Philadelphia (and in the other affected DMAs) for periods longer than six months—the longest known carriage dispute involving Dish Network and a broadcaster. Because search and switching are costly, MVPD consumers will not search for alternative MVPDs until they are convinced that the dispute is long-lived. Hence, Comcast did not enjoy a significant lift in subscribers around the Dish Network-Fisher dispute. By vertically integrating into must-have programming, Comcast can fundamentally change the outcome of bargaining with a rival distributor. A standalone content owner, even one that owns must-have content, ultimately must sell a license to a distributor to generate any income. In contrast, Comcast does not need to sell its affiliated networks; it already has a guaranteed distributor—namely, itself. And once an affiliated network is carried widely on Comcast's systems, it is guaranteed advertising revenues. Accordingly, the threat from a standalone network to hold out for the long term is less credible than the same threat coming from a Comcast-affiliated network. And the best measure of the impact of *long-term* denial of a must-have input on DBS shares is the Philadelphia (or San Diego) episodes involving RSNs. Alternatively, the Commission could

consider the near doubling in DBS market shares around the time that DBS operators obtained access to local broadcast networks.[35]

II. COMCAST'S LIKELY FORECLOSURE OF OTT PROVIDERS

25. Myriad cable analysts and cable operators have recognized the looming threat to cable operators posed by OTT providers. In response to that threat, cable operators, including Comcast, have anticompetitively tied access to online content to a cable subscription and the purchase of their affiliated online portals to their cable television service—for example, a DirecTV subscriber with a Verizon DSL connection cannot purchase access to Comcast's online portal Fancast Xfinity TV à la carte.[36] In this section, I explain why Comcast's responses to the anticompetitive concerns relating to competition from OTT providers are not convincing.

A. Comcast and Its Economists Repudiate a Growing Body of Evidence Documenting the Looming Threat of Online Video

26. Given the nascence of online video, the Commission must rely heavily on surveys of video customers' attitudes towards online video rather than on historical behavior in response to relative changes in prices. Any prediction of future behavior is naturally speculative. The purpose of this research is not to foretell precisely the percentage of customers who will cut the cord—the difference between a cord-cutting projection in June 2012 of 10.3 percent and 14.5 percent is meaningless. Instead, the purpose is to anticipate whether the likely substitution from traditional cable video to online video will be economically significant. Despite their alleged

35. *See* David Reiffen, Michael R. Ward, & John Wiegand, Duplication of Public Goods: Some Evidence on the Potential Efficiencies from the Proposed Echostar/DirecTV Merger, April 2004, at 14, *available at* http://www.uta.edu/faculty/mikeward/dbspaper.pdf ("The last column indicates that, over our sample, DBS share rose about 2% in all DMAs due to factors unrelated to [local-in-local] introduction (29 months at 0.084% per month) and by about 6.4% due to [local-in-local] introduction (24 months at 0.258% per month) in the DMAs with the earliest [local-in-local] availability. Since DBS share initially averaged about 6 to 7% in DMAs where [local-in-local] would become available, this indicates that [local-in-local] availability on DBS had a large impact on subscription decisions.")

36. Xfinity TV online, *available at* http://www.xfinity.com/tv-movies/ ("XFINITY TV gives you access to an On Demand library approaching 20,000 titles, with thousands available in HD. Add XFINITY Internet and you can watch many of your favorites online plus schedule your DVR at home, or right from your computer.").

methodological shortcomings, the surveys criticized by Comcast and its economists provide valuable insight into the degree of future substitutability.

27. For example, Drs. Israel and Katz find fault with a Yankee Group survey, which assumed for the purpose of their projections that five percent of its survey respondents who "had not thought about cord cutting" (47 percent of respondents) would in fact cut the cord in the next 12 months and that 50 percent of its respondents who "had not heard about cord cutting but would consider it" (13 percent of respondents) would in fact cut the cord in the next 12 months.[37] Why the five–percent assumption for the first group constitutes an aggressive assumption is not clear; that someone has not thought of cord cutting does not imply zero chance of his doing so when presented with a compelling offer. If the assumption were reduced from five to two percent, the Yankee Group's estimate of likely cord cutters would decline by only 1.4 percentage points. Furthermore, that someone indicates he would consider cutting the cord upon learning of his options implies the probability of doing so is significantly greater than zero. Because the weight given to these respondents was so small (13 percent of respondents), the allegedly aggressive assumption of a 50 percent cord-cutting rate was discounted heavily. Accordingly, the Yankee Group's survey methodology is not obviously biased. Moreover, at least six other surveys reaching a similar conclusion regarding cord cutting accompanied Yankee Group's survey: Pew Internet & American Life Project,[38] comScore,[39] Parks Associates,[40] Convergence

37. *Israel-Katz Reply*, ¶ 203 ("The inclusion of the latter two groups in this statistic is strikingly aggressive. By this methodology, if the entire sample had responded that they had not thought about cord-cutting at all, then the Yankee Group still would have concluded that 5 percent were likely to cut the cord.").

38. Pew Internet and American Life Project, The State of Online Video, June 3, 2010, at 2 (finding that from 2007 to 2009, the number of adults who have watched movies or television shows on the Internet doubled from 16 to 32 percent).

39. *comScore Data Shows 2009 Was a Blistering Year for Online Video*, VIDEO NUZE, *available at* http://www.videonuze.com/blogs/?2010-02-09/comScore-Data-Shows-2009-Was-a-Blistering-Year-for-Online-Video-Slides-Available-/&id=2425 (citing comScore data) (finding that over 2009, the average amount of time among web users spent watching videos online more than doubled to nearly thirteen hours per month)

Consulting Group,[41] the Conference Board,[42] and Consumer Electronics Association.[43] Comcast's economists would have the Commission believe that all of these estimates are biased upwards.

28. In addition to the surveys, a growing chorus of cable analysts who recognize the threat that online video poses to traditional video bolsters the survey results. Comcast's economists criticize a single Piper Jaffray report I cited,[44] which concludes that "Internet delivered video will ultimately prove to be the primary way movies *and TV* are consumed...."[45] But Piper Jaffray is not the only analyst that holds this view. For example, the Yankee Group explains the growing popularity of cord cutting as follows:

> At the most basic level, the decision to cut off pay TV services will be an economic one.... On the consumer end... [b]y purchasing a retail STB [set-top boxes], using a gaming console as the primary video device or consuming only Internet-based content, consumers are freed from monthly cable bills, which in the U.S. average more than $50 per month.... At the other end of the content value chain... the relationship between programmers and U.S. pay TV operators is getting testy. Broadcasters and certain popular networks are demanding significantly higher fees from pay TV operators, which have started calling on regulators to get involved in the fracas.[46]

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40. Parks Associates finds over 25 million U.S. broadband households regularly watch full-length TV shows online, Apr. 20, 2010, *available at* http://www.fiercetelecom.com/press_releases/parks-associates-finds-over-25-million-u-s-broadband-households-regularly-watch-full (finding that the number of U.S. broadband households watching premium online content doubled in 2009; some 900,000 U.S. homes did not pay for television and relied solely on Internet-based television in 2008).

41. Ryan Fleming, New Report Shows More People Dropping Cable TV for Web Broadcasts, Apr. 16, 2010, *available at* http://www.digitaltrends.com/computing/new-report-shows-that-more-and-more-people-are-dropping-cable-tv-in-favor-of-web-broadcasts (finding that from 2008 to 2010, 800,000 U.S. households disconnected their cable television service and watched their television online; that number was also expected to double by 2011).

42. David Colker, *Pulling the plug on television: More people are turning off the TV and turning on their computers to watch their favorite programs via the Internet*, LOS ANGELES TIMES, Oct. 31, 2009 (finding that nearly one quarter of U.S. households have watched television online, and that 20 percent of respondents said they were watching less television delivered through traditional broadcast or paid cable-type providers).

43. *Id.* (finding that 15 percent of viewers would consider cutting out traditional means of watching television altogether).

44. *Israel-Katz Reply*, ¶ 199 ("As support for this claim, he cites to a report in which analysts at Piper Jaffray state that in '3-5 years we expect internet delivery will start to rival the physical distribution models.' In fact, the statement in the Piper Jaffray report refers to online rental options' rivaling bricks-and-mortar movie rental stores, and it is unrelated to traditional MVPD services.").

45. *See* Piper Jaffray, Internet Video: Field of Dreams or Nightmare on Elm Street?, Nov. 2009, at 1 (emphasis added). This quote makes clear that Comcast's economists have too narrowly interpreted the "physical distribution model."

46. Yankee Group, Consumers Consider Axing the Coax, Apr. 2010, at 5.

The Yankee Group also notes that "the continued escalation of these fees will push more consumers to consider coax-cutting," especially among non-sports fans who "are effectively subsidizing channels in which they hold no interest."[47] Indeed, Blair Levin, a former analyst with Stifel Nicolaus and now Omnibus Broadband Initiative Executive Director, commented in April 2010 that "Over-the-Top Video will eventually emerge as a challenge to the current model of multi-channel distribution of large and increasingly expensive bundles of linear programming."[48]

29. Finally, Comcast itself has argued that online video presents a significant threat to its cable video franchise. In comments filed with the Commission in November 2006, Comcast argued that Internet video is "providing consumers with an interactive *alternative* to traditional TV-set viewing,"[49] which "*compete*[s] with traditional and not-so-traditional video distribution technologies for time, attention, and dollars."[50] Despite the overwhelming evidence of the competitive threat online video poses to cable television, Comcast's economists argue that I have failed to provide any "reliable evidence" that a meaningful number of cable subscribers have cut or will cut the cord in favor of online video services.[51] It appears that nothing would satisfy their requirements.

B. Comcast's Economists Fail to Demonstrate That Online Video Is a Complement to Traditional Cable Television

30. Two services are complements if the demand for one increases *in response to* a decrease in the price of the other. Accordingly, online video is a complement to traditional cable television if the demand for cable television increases with a decrease in the price of online video. That traditional television consumption and online video consumption have increased in

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47. *Id.* at 6.

48. Remarks by Omnibus Broadband Initiative Executive Director Blair Levin, Owning the Inevitable, American Cable Association's 17th Summit, April 20, 2010:

49. Comcast Comments in Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, MB Dkt No. 06-189, at 30-31 (rel. Nov. 29, 2006) (emphasis added).

50. *Id.* at 59 (emphasis added).

51. Israel-Katz Reply, ¶ 90.

tandem does not inform the economic test for complementarity, as Comcast[52] and its economists[53] now admit. Without offering any evidence of a change in the quality of online video, Drs. Israel and Katz simply assert that the quality-adjusted price of online video has decreased over the recent past.[54] In their view, this is "proof" that online video is a complement to cable television. To believe this "proof," one must also believe that the alleged decrease in the quality-adjusted price of online video *spurred* the demand for cable television, but that two variables move in the same direction does not imply that one caused the movement of the other. Setting aside this confusion of causation for correlation, the quality-adjusted price of traditional cable television has arguably decreased over the last few years, as well, with the advent of high-definition services and a larger library of on-demand movies. Thus, even if Drs. Israel and Katz are right about the price of online video, that the *relative* quality-adjusted price of online video has declined is not even clear. Until this assertion about relative quality-adjusted price is proven, Drs. Israel's and Katz's "proof" of complementarity is merely a conjecture. Moreover, the Commission must weigh that conjecture against the mountain of evidence from surveys, cable analysts, and cable operators, including Comcast, recognizing the threat to traditional cable television that online video poses.

C. Comcast and Its Economists Conclude Incorrectly That the Anticompetitive Effects Vanish if Traditional Cable Television and Online Video Are Distinct Product Markets

31. Comcast and its economists argue incorrectly that I have placed online video service in the same product market as traditional MVPD services.[55] Whether online video

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52. *Opposition* at 90 n. 281.

53. *Israel-Katz Reply*, ¶ 195 ("We agree with Dr. Singer's definition of complementarity.").

54. *Id.*

55. *Opposition* at 91 ("In light of the evidence discussed above, defining a single product market that encompasses both MVPD services and online video distribution would be inconsistent with, among other things, the Commission's prior determination that MVPD services and local broadcast television services are not part of the same product market.").

belongs in the same product market as cable television service *today* turns on this question: Would a hypothetical monopoly provider of traditional cable television service *today* need to control the supply of online video to raise cable television prices significantly above competitive levels? The answer is likely no given the nascent state of online video. Despite the growing evidence of cord cutting, no empirical estimates of the online-video cross-price elasticity of demand for cable television yet exist. However, even if traditional cable television service represents a distinct product market from online video *today*, Comcast would still have an incentive to slow the development of online video so long as it perceived online video to be a threat to its cable-video franchise *in the future*. And Comcast's prior statements, alongside similar statements of other cable operators,[56] reveal that Comcast perceives online video to be a competitive threat to its cable-video franchise in the near future. Because Comcast's exclusionary tie-in of Fancast Xfinity TV to its digital cable television service could increase Comcast's degree of tying market power, Comcast's conduct could generate anticompetitive effects.[57] As I demonstrate below, because access to Hulu and NBCU's other online content are vital to the success of OTT providers, the proposed merger would strengthen the anticompetitive impact of Comcast's tying strategy.

D. Hulu and NBCU's Other Online Properties Are "Must-Have" Content for OTT Providers

32. As Comcast tried to do with NBC's local broadcast programming, it[58] and its economists[59] again seek to diminish the importance of Hulu and NBCU's other online properties.

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56. As Glenn Brit, CEO of Time Warner Cable, acknowledged in May 2009: "The reality is, we're starting to see the beginnings of cord cutting where people, particularly young people, are saying all I need is broadband." *See* Christopher Lawton, *More Households Cut the Cord on Cable*, WALL STREET JOURNAL, May 28, 2009, *available at* http://online.wsj.com/article/SB124347195274260829.html.

57. Einer Elhauge, Tying, *Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARVARD LAW REVIEW 399, 417 (2009).

58. *Opposition* at 114 ("Even if NBCU controlled Hulu - which it does not - these are only two of the hundreds of websites on which video programming is viewed online.").

For example, they argue that the must-have nature of NBCU's online content should be measured by the merged firm's (low) market share of national broadcast and basic cable television viewing, or its (low) market share of basic cable television viewing.[60] Because broadcast networks constitute must-haves in the traditional video space, it follows that Hulu's aggregation of online broadcast programming constitutes must-have programming for OTT providers. Once again, it makes no sense to count Hulu's shares of some relevant antitrust market to impute how must-have it is.

33. Despite the FCC's designation of local broadcast content as must-have, Comcast insists that Hulu is not that special:

> Even if NBCU controlled Hulu - which it does not - these are only two of the hundreds of websites on which video programming is viewed online. Each of the broadcast networks (e.g., AIIC.com and TV.com (CBS)) has its own site on which video programming can be viewed. There are a variety of other sites on which content from various sources is aggregated, such as yahoo.com, youtube.com, netflix.com, iTunes, and veoh.com.[61]

By the same logic, NBC is only one of hundreds of networks on which video programming is viewed on cable television. So is a local NBC affiliate not must-have? Other online portals cited by Comcast simply do not carry the same must-have content as Hulu and NBC.com. Accordingly, OTT providers need access to Hulu and NBCU's other online content (at a positive price) to compete effectively. (More precisely, the *customers* of OTT providers need access to this content.)

34. To diminish further the import of Hulu, Comcast points out that NBC.com could post the same NBC content as Hulu.com posts.[62] Consider a world in which the merged firm

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59. *Israel-Katz Reply* ¶ 216.

60. *Opposition* at 182-83 ("As discussed in Section 1V.B. 1, however, the joint venture would account for only 13.7 percent of national broadcast and basic cable television viewing, and only 12.8 percent of basic cable television viewing. Similarly, the transaction will only increase NBCU's share of overall national cable network advertising and affiliate revenues to 12 percent from approximately percent.").

61. *Opposition* at 114.

62. *Id.*

blocked OTT providers' access to Hulu.com—either directly via technological means or indirectly by requiring the user to authenticate her Comcast cable television subscription or both. Were it to deny access to Hulu, then the merged firm would likely block an OTT provider's access to NBC.com as well; the existence of a separate NBC.com is no consolation to a foreclosed OTT provider. Indeed, as I described in my initial report, NBC has already shown a propensity to exclude OTT providers. According to the *New York Times*, NBCOlympics.com required that Internet users verify a subscription to participating cable or satellite providers.[63]

E. Comcast Incorrectly Argues That Time Warner's Footprint and Online Content Portfolio Should Be Ignored

35. TV Everywhere would not exist today but for the collaboration between Time Warner and Comcast. As I described in my initial report, Time Warner needed an MVPD partner to exert the maximum pressure on independent content providers.[64] Accordingly, the success of TV Everywhere's tying strategy (as measured by the retardation of online video) depends on the combined MVPD footprint of Time Warner and Comcast and the quality of the firms' combined online content portfolio. The footprint is important because OTT providers might achieve the requisite economies of scale to compete against Comcast by serving Time Warner's cable customers only; if all TV Everywhere's members coordinated a refusal to deal with OTT providers, then OTT providers likely could not achieve the requisite economies of scale. The importance of the quality of the combined online content portfolio is precisely why the proposed merger exacerbates the harm associated with this strategy: To compete effectively against traditional video offerings, OTT providers will need access to the online content locked behind

63. Brian Stelter, *A trickle of life streams on the web*, NEW YORK TIMES, Feb. 18, 2010, at 15.

64. *TV Everywhere*, BUSINESSWEEK, Mar. 10, 2010, *available at* http://www.businessweek.com/magazine/content/10_12/b4171041598366.htm.

TV Everywhere's walled garden. And Comcast's acquisition of NBCU's online properties enhances the value of TV Everywhere's content portfolio.

36. Despite the critical role Time Warner played in formulating Comcast's tying strategy, Comcast argues that Time Warner's profits associated with TV Everywhere should not enter the foreclosure calculus here:

> Conceding the absence of significant premium content controlled by NBCU, Dr. Singer claims that Drs. Israel and Katz should also have considered Time Warner's video content. This reflects a misunderstanding of the model, which considers costs to NBCU and gains to Comcast. Time Warner's profits do not enter the analysis.[65]

If Time Warner's unilateral refusal to deal with OTT providers were not profitable, but Comcast's and Time Warner's coordinated refusal to deal were profitable, then asking whether Time Warner benefits when Comcast acquires online content is reasonable. But I never argued that Time Warner's incremental profits should enter the foreclosure calculus. Rather, I explained that the Commission should consider Time Warner's *footprint* when measuring the likely anticompetitive impact on OTT providers associated with Comcast's decision to acquire NBCU's online content and then place it behind the Xfinity walled garden.

37. Finally, Comcast's economists argue that Time Warner's video content should not inform the foreclosure analysis.

> Dr. Singer claims that one should also consider Time Warner Cable's video content in a foreclosure analysis. He offers no evidence that Time Warner Cable and Comcast are somehow colluding, and he ignores the fact that Time Warner Cable no longer has a significant interest in programming networks, since its 2009 separation from Time Warner Inc.[66]

On the contrary, my initial report recounted at least three instances of collusion against content providers: establishing iN DEMAND's pay-per-view service, establishing TV Everywhere, and collectively punishing the NFL Network. Furthermore, even if Time Warner Cable has shed its

65. *Opposition* at 188.
66. *Israel & Katz Reply*, ¶ 216.

programming networks, it still holds significant rights to distribute video programming on the Internet. By refusing to grant OTT providers access to its online portal, Time Warner can mitigate the risk of online video's evolving into a rival platform for video customers. Moreover, Time Warner's exclusionary conduct indirectly benefits Comcast: With access to Time Warner's online content portfolio, OTT providers operating in Comcast's territory could provide a more compelling offering to Comcast's cable television subscribers. Accordingly, it is reasonable to "consider Time Warner Cable's video content in a foreclosure analysis" relating to Comcast-NBCU.

F. Comcast Fails to Defend Its Online Authentication/Tying Policy

38. Comcast's authentication policy for online video amounts to a tie-in: A broadband user cannot gain access to online video content without verifying her subscription to Comcast's cable television service.[67] Stated differently, Comcast ties access to its online content to its digital cable television service. In a traditional tie-in, a firm with market power in product *A* refuses to supply *A* unless the customer also buys product *B* from the firm. A variation of this policy is that the firm also refuses to supply *B* unless the customer buys product *A*—in other words, neither product can be purchased separately. Here, Comcast has significant market power in the supply of cable television service within the regions it serves; Comcast's market shares in four DMAs implicated by the proposed transactions are as high as 60 percent.[68] In the form of a traditional tie-in, Comcast refuses to supply digital cable television service (the *A* product) unless

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67. This discussion focuses on Comcast's exclusionary policies vis-à-vis end users. Comcast also engages in exclusionary conduct vis-à-vis independent content owners. In particular, Comcast conditions access to its cable television platform on a content provider's agreement not to distribute its content online. A complete remedy would address Comcast's exclusionary conduct on this side of the market by preventing Comcast from conditioning carriage in this way.

68. According to SNL Kagan, Comcast's MVPD market share in Chicago, Philadelphia, San Francisco, and Miami are 61.6 percent, 63.4 percent, 57.8 percent, and 59.3 percent, respectively.

its customers also obtain (for free) access to its On Demand library online (the *B* product).[69] On its website, Comcast explains: "More entertainment access. An On Demand library approaching 20,000 titles is yours to enjoy wherever you want. Best of all, many of your favorite programs are *available online anytime—for no additional charge*."[70] In addition, Comcast refuses to supply access to its online portal unless a customer can authenticate that she subscribes to Comcast's cable television service. Neither product may be purchased separately.

39. The objective of Comcast's tie-in is to prevent any development of online video as an alternative mechanism for watching cable programming. Comcast has commented to the FCC that it considers online video to be a viable threat to its cable television franchise.[71] This tie-in is likely aimed at impairing rivals that aggregate online video content in one portal and ride over the top of a broadband connection, called over-the-top or OTT providers, from evolving into rival MVPD suppliers in the future. (Although the tie-in could impair other online video providers in similar ways, we focus on the competitive impact on OTT rivals here.) By including Xfinity at no additional charge, Comcast has effectively set the imputed price of Xfinity at zero. Thus, customers loyal to Comcast's cable television service would not likely pay a positive price for a rival's online video service; they get a similar service for "free." Because of Comcast's authentication policy, which requires broadband users to verify a subscription to Comcast cable television, if a Comcast cable television subscriber were to cancel her cable television subscription, then she would be prevented from accessing Comcast's video library online.

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69. According to its website, every *digital* cable television package that Comcast sells includes access to its On Demand library. In contrast, a subscriber can get *basic* cable service for $15 per month (in certain areas) without access to Comcast's On Demand library.

70 . *See* Xfinity Where You Want, *available at* http://www.xfinity.com/choice-and-control/where-you-want/. Comcast's economists also admit that Comcast's cable television "[c]onsumers do not pay extra for Fancast Xfinity TV beyond the cost of their cable service. . . ." *Israel-Katz Reply*, ¶ 207.

71. Comcast Comments in Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, MB Dkt No. 06-189, at 30-31 (rel. Nov. 29, 2006) ("Many networks have jumped head-first into Internet video, providing consumers with an interactive *alternative* to traditional TV-set viewing.") (emphasis added).

Moreover, if a Comcast customer were to drop her cable television subscription, the standalone price of the cable modem service would increase to a "penalty price" as a result of Comcast's bundled-pricing scheme, further squeezing the available margins of OTT providers (assuming the OTT provider were to compensate the subscriber for her forgone "rebate" on broadband service).[72] Assuming generously that the customer could replace Comcast's cable Internet service with a competitively priced broadband offering, an OTT provider would still be impaired in its ability to compete effectively with Comcast to the extent that non-loyal customers perceive the online content behind Xfinity—which, after the transaction, would include NBCU's online content, including Hulu—to be must-have programming; if switching to an OTT provider meant losing access to that must-have programming, then most customers would stick with Comcast. Thus, the proposed transaction would retard both cord-cutting activity among Comcast customers and innovation in online video generally.

40. Comcast defends its authentication policy by noting that authentication "is a concept that is being pursued by an array of content owners and distributors looking to appropriately monetize their content as Internet delivery becomes a more significant factor, and Comcast is an early adopter of the concept."[73] That other cable operators who belong to TV Everywhere—a collaboration among cable operators to facilitate their dealings with content providers—require authentication does not make Comcast's authentication policy procompetitive, especially given that this authentication policy was designed in a coordinated fashion. In the absence of the coordination between Time Warner and Comcast, it is possible that

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72. Based on an August 3, 2010 interview with a Comcast service representative, the standalone price of 12 Mbps cable modem service in Washington, D.C. was $59.95 per month. A bundle that included the same cable modem service and cable television service was $101.90 per month. Because the comparable cable television service was priced at $56.95 per month, the imputed price of the cable modem service in the bundle was $44.95 (equal to $101.90 less $56.95). Thus, Comcast imposes a $15.00 penalty per month on customers who purchase cable modem service only.

73. *Opposition* at 205 n. 704.

the TV Everywhere model would not even exist. Moreover, conduct permitted for certain cable operators might be anticompetitive when practiced by others. For example, the non-discrimination provisions in the Cable Act pertain to vertically integrated cable operators only; a standalone cable operator is not subject to the same duties in its dealings with cable networks. The size of the cable operator's footprint also warrants different treatment under the law: If a cable operator with five percent of the nationwide MVPD market tied its online portal to a cable television subscription, the associated market-wide foreclosure would not likely be sufficient to impair an OTT provider. Because Comcast is the largest MVPD, its practices cannot be defended by citing similar conduct among smaller cable operators, which indeed also increases the collective foreclosure of OTT providers.

41. Next, Comcast argues that its conduct regarding Xfinity does not constitute an anticompetitive tying arrangement under *Jefferson Parish*[74] because Comcast's cable television and online video service constitute a single, finished product, and because the associated foreclosure share is too small.[75] To ascertain whether Comcast's Xfinity and its cable television service are not separate products (and therefore not subject to tying law), we refer to Professor Elhauge's 2009 *Harvard Law Review* article on tying.[76] Professor Elhauge defines the criteria by which courts are instructed to evaluate two offerings by a firm: "Thus, two items are a finished product limited to the law on refusals to deal and price squeezes only if the defendant's buyers would not buy the items separately even without the conduct, and the rival seeks to compel the defendant to sell an item to the rival so that it can make the same finished product. *If the defendant's buyers would buy the items separately absent the conduct, then the items are*

74. Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 9–11, 13–15 (1984) ("Jefferson Parish").

75. *Opposition* at 205.

76. Einer Elhauge, Tying, *Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARVARD LAW REVIEW 399 (2009) (emphasis added).

separate products subject to the law on tying and bundled discounts."[77] Accordingly, the relevant inquiry here is whether, in the absence of Comcast's Xfinity bundle, consumers would purchase online video and cable television separately. Given the significant inroads online video services have made—a near doubling in the consumption of online video from 2008 to 2009[78]—it is reasonable to believe that consumers do in fact buy online video and cable television service separately. Because consumers would purchase online video and cable television separately, and because OTT providers are not seeking access to Comcast's online portal with the intent of reselling that service at the retail level, the proper lens through which to assess Comcast's authentication policy is tying.

42. Comcast misinterprets *Jefferson Parish* in its assertion that the foreclosure share associated with Comcast's authentication policy is too small to be harmful. According to Professor Elhauge, *Jefferson Parish* upheld a "quasi-*per se* rule" that bases liability in a tying case on tying power—and not on the associated foreclosure share—except in cases involving products that have a fixed ratio and lack separate utility.[79] Thus, Comcast is incorrect to cite *Jefferson Parish* as the basis for a requirement of substantial tied market foreclosure.[80] Even if tying law required a significant foreclosure share in all tying matters, such a condition would appear to be satisfied here. By requiring online users to purchase a cable television subscription,

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77. *Id.* at 466-67.

78. *comScore data shows 2009 was a blistering year for online video*, VIDEO NUZE, *available at* http://www.videonuze.com/blogs/?2010-02-09/comScore-Data-Shows-2009-Was-a-Blistering-Year-for-Online-Video-Slides-Available-/&id=2425 (citing comScore data).

79. *Elhauge, supra,* at 402. Professor Elhauge summarizes the ruling as follows: "In *Jefferson Parish*, the Supreme Court considered and rejected the argument that it should overrule the quasi–per se rule and require a substantial tied foreclosure share. It justified the fact that the quasi–per se rule required tying market power rather than a substantial tied foreclosure share by quoting extensively from the above *Fortner* dissent, including the above proposition that part of the rationale was that, separate from any anticompetitive effects in the tied market, tying could create price discrimination or extract individual consumer surplus on the tying product." *Id.* at 422-23 (citing Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 9–11, 13–15 (1984).).

80. *Opposition* at 214 n. 729 ("As the Supreme Court explained, plaintiffs must show that the challenged restraint 'foreclosed so much of the market from penetration by [the defendants'] competitors as to unreasonably restrain competition in the affected market.' *Jefferson Parish*, 466 U.S. at 3 1 11.51.).

and by pricing its bundle such that the imputed price of its online video portal is zero, Comcast forecloses rival OTT providers from roughly one quarter of all potential video subscribers—that is, Comcast's national MVPD share. That foreclosure share alone would be presumptively anticompetitive under antitrust law.[81] Finally, because Comcast has coordinated its TV Everywhere model with other cable television providers, including Time Warner, the associated foreclosure share exceeds Comcast's MVPD share.

III. Comcast and Its Economists Are Silent on My Preferred Remedies

43. In my initial report, I offered a host of remedies that would address Comcast's likely foreclosure of must-have cable network programming, including the soon-to-be acquired NBCU programming. The most important contribution is my opt-out remedy. Non-discrimination provisions have proven ineffective at forcing Comcast to price its affiliated networks in a way that approximates the prices charged by independent programming networks. Under an opt-out remedy, Comcast's subscribers would be able to opt out of a Comcast bundle of networks at a rebate equal to the wholesale price charged by Comcast for the affiliated network. Ideally, the opt-out remedy would apply to all of Comcast's must-have programming, including its RSN networks and any channels bundled with them. At a minimum, it should apply to the NBCU's must-have programming, including the ten O&O broadcast affiliates. Comcast's economists failed to address this remedy in their reply.

44. With respect to online remedies, the most important contribution I offered was the requirement that Comcast end its authentication scheme for affiliated online video content and sell Xfinity on a standalone basis. Online video service, from Apple's iTunes Store to Netflix, free certain consumers, including those who only watch a few shows throughout a year, from a

81. *See* PHILLIP AREEDA, IX ANTITRUST LAW 375, 377, 387 (Aspen 1991) (indicating that 20 percent foreclosure is presumptively anticompetitive); *See also* HERBERT HOVENKAMP, XI ANTITRUST LAW 152, 160 (indicating that 20 percent foreclosure and an HHI of 1800 is presumptively anticompetitive).

cable television subscription. Before explaining our preferred remedy, it is worth noting that we are agnostic about the technologies and business models that will ultimately constrain Comcast's market power. Accordingly, we intend our recommendations here to be neutral toward whatever procompetitive business practices companies use to help consumers cut the cord. As the late economist Joseph Schumpeter reminds us, "...it is not [price or even quality] competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization... which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives."[82] Irrespective of *how* firms end up supplying video, without access to the *must-have programming* Comcast seeks to acquire, even its most innovative video-distribution rivals will not be able to constrain its cable prices. Consequently, the FCC should design its remedy without a distribution channel in mind—even Comcast's distribution channel—so that the market may choose the best video distribution methods from among the competitors.

45. With that caveat in mind, the FCC should compel Comcast to sell Xfinity to all broadband users à la carte regardless of whether they subscribe to Comcast cable television. Moreover, Comcast must be required to end its authentication requirement for accessing its online video library regardless of where such video resides. For example, should a post-merger Comcast move its NBCU must-have programming to a different online channel—say, NBC.com or even an iTunes-like application—Comcast must be required to sell its affiliated online content to all broadband users without any authentication requirement. These two measures would break the tie-in and thereby allow non-Comcast cable television televisions to access NBCU's must-have online content. It would also encourage non-Comcast broadband providers to invest more in their networks, as access to must-have programming is critical to their business plans.

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82. JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 84 (Harper & Bros. 1942).