INTRODUCTION

1. I have been asked by counsel for Communications Workers of America (CWA) to analyze the competitive effects of Comcast's proposed joint-venture with NBC Universal (NBCU), which will be majority-owned and managed by Comcast (the "proposed transaction"). In particular, I have been asked to assess the proposed transaction's likely competitive effects in the markets for multi-video programming distribution (MVPD), including "over-the-top" (OTT) video providers, video programming, and broadband Internet access. I have also been asked to review the submissions by Comcast's economists, Dr. Mark Israel and Professor Michael L.

Katz, on the proposed transaction's likely effects on the supply of affiliated online video[1] and NBCU's local NBC affiliates.[2] I understand that CWA is concerned that a potential reduction in output, brought about by exclusionary conduct made possible by the transaction, would lead to less investment and thus fewer jobs in the communications sector. In my opinion, CWA's concerns are justified.

2. The proper lens through which to view the proposed transaction's likely effects is "vertical foreclosure."[3] Vertical connotes the vertical relationship between Comcast, a "downstream" MVPD distributor, and "upstream" content providers or cable networks. Foreclosure connotes Comcast's refusal to carry unaffiliated content on its distribution platform or the conditioning of such carriage on equity and exclusivity; it also connotes Comcast's refusal to supply or interference in the supply of affiliated programming to its downstream MVPD rivals. In the past decade, Comcast has engaged in a systematic mission of vertical foreclosure vis-à-vis independent cable networks, with the aim of securing those rights on an exclusive basis; once secured, Comcast withheld those critical inputs to downstream MVPD rivals such as direct broadcast satellite (DBS) providers at reasonable terms. In this sense, foreclosure vis-à-vis unaffiliated cable networks (step one) and foreclosure vis-à-vis rival MVPDs (step two) are part of the *same* foreclosure strategy. Once Comcast secures equity in the programming, the program access protections of the Cable Act do not provide much relief to Comcast's MVPD rivals, as Comcast can charge itself the same inflated rates and still satisfy the "non-discrimination" provisions of the Act—the high license fee is an internal transfer to Comcast.

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1. Mark Israel & Michael L. Katz, The Comcast/NBCU Transaction and Online Video Distribution, May 4, 2010 [hereinafter *Israel & Katz Online Video*].
2. Mark Israel & Michael L. Katz, Application of the Commission Staff Model of Vertical Foreclosure to the Proposed Comcast-NBCU Transaction, Feb. 26, 2010 [hereinafter *Israel & Katz NBCU*].
3. Just as dancing is a "vertical expression of a horizontal desire," a cable operator's vertical foreclosure strategies vis-à-vis an upstream programmer is ultimately intended to affect horizontal outcomes vis-à-vis rival MVPDs.

3. Up until now, Comcast has executed this vertical foreclosure strategy on a local basis only. Comcast has perfected this strategy in Philadelphia and Portland, and the results have been harmful for MVPD rivals and consumers in those markets. Without access to must-have local sports—the Phillies, Flyers, and 76ers in Philadelphia, and the Trailblazers in Portland—DBS penetration has been significantly reduced (relative to what it should have been[4]) and cable prices have been inflated.[5] After enduring Comcast's refusal to license CSN-Philadelphia on a reasonable basis[6] and Comcast's interference with the local franchising process, RCN halted overbuilding activity in the Philadelphia DMA, and associated investments that would have produced jobs and increased competition have been quashed. The stories of how Comcast came to acquire that programming on an exclusive basis for the purpose of denying it to its MVPD rivals—in apparent contravention of the Cable Act—are described here. The extent of the reduction in DBS penetration and the inflation in cable prices have been quantified by economists and by the Federal Communications Commission (FCC).[7]

4. Several observers mistake the modest growth in DBS penetration in Philadelphia over the past decade as evidence that Comcast's exclusionary conduct has had no anticompetitive effect. But the relevant comparison is actual DBS penetration *at a given point in time* versus what DBS penetration should have been *at the same point in time*. Confusing this point is akin to believing that a parent cannot impair the growth of her child by denying it milk so long as the child continues to grow.

5. Comcast is not the only cable operator to have executed this foreclosure strategy. Time Warner refused to carry the network owned by the Charlotte Bobcats until the Bobcats turned over equity to Time Warner. Now Time Warner refuses to supply those rights to its DBS rivals in Charlotte.

6. For years, Comcast supplied CSN-Philadelphia to RCN on short-term contracts, including a contract with six-month and one-month terms, despite the fact that carriage arrangements for sports programming are typically provided under long-term contracts. *See* Patricia Horn, *Prices Tend to Rise as Competition Lags for Cable TV*, KNIGHT RIDDER TRIBUNE BUSINESS NEWS, June 3, 2001 ("SportsNet has six-month contracts with RCN and the other cable companies, Williams said.")

7. Some have argued that total welfare has not been reduced by Comcast's exclusionary conduct because total output, when measured by the total number of MVPD subscribers, is unchanged. *See, e.g.*, Scott Wallsten, *An Economic Analysis of the FCC's Program Exclusivity Ban*, Working Paper, June 2007. Setting aside whether consumer welfare or total welfare is the proper economic standard—there is no dispute that Comcast's exclusionary conduct has resulted in a transfer of surplus from Comcast subscribers (its installed base plus former DBS subscribers switching to Comcast to follow the excluded content) to Comcast—the proper metric for measuring output effects is the number of MVPD subscribers with access to the excluded content. Due to high switching costs and due to the supra-competitive premium that Comcast charges for basic cable in Philadelphia attributable to the exclusionary conduct, many DBS subscribers who value the excluded content but not sufficiently to compensate for these two costs are effectively removed from the market, thereby reducing the relevant measure of output.

4. Comcast recently attempted to expand its vertical foreclosure strategy on a national level when it sought to acquire the exclusive rights to the National Football League's (NFL's) Thursday Night and Saturday Night telecasts. Comcast's objective was to place those games on Versus, a national sports cable network owned by Comcast. Following its local foreclosure strategy in Philadelphia and Portland, Comcast would have then refused to supply Versus to its MVPD rivals at reasonable rates. Shortly after the NFL refused to comply with Comcast's demands, and instead carried those games on NFL Network, Comcast relocated NFL Network from a digital tier to Comcast's lowly penetrated sports tier. During the ensuing trial between Comcast and the NFL,[8] former NFL Commission Paul Tagliabue testified that not only did Brian Roberts threaten to re-tier NFL Network if the NFL did not supply the games on an exclusive basis to Versus, but that the larger "cable industry" would support Comcast's refusal to deal.[9] By coordinating its carriage decision vis-à-vis national sports programmers with out-of-region cable operators, Comcast can effectively increase its "foreclosure share" from roughly 24 percent (its current share of national MVPD subscribers) to the sum of the shares of the group's members.[10] In addition to Mr. Roberts's threatened group boycott, other evidence indicates that Comcast is coordinating its carriage strategy vis-à-vis national content providers with other cable operators.[11]

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8. I served as the NFL's expert in the trial.

9. *See* Transcript of Record, NFL Enterprises LLC v. Comcast Cable Communications LLC, File No. CSR-7876-P, Apr. 16, 2009, 1277: 10-1279:10 (Paul Tagliabue testimony describing Comcast CEO Brian Roberts' suggestion that the NFL's relationship with the "cable industry" would not be "positive" on a going-forward basis.)

10. It bears noting that a foreclosure share of 20 percent, which Comcast's national share of MVPD subscribers exceeds on its own, is presumptively anticompetitive in the antitrust literature. *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).

11. Comcast, Cox, and Time Warner coordinate their strategies vis-à-vis national movie studios via iN DEMAND's pay-per-view service. TV Everywhere's authentication service, which facilitates the coordination of strategies vis-à-vis national content providers and over-the-top video services, was originated by Comcast and Time Warner. Finally, empirical research indicates that vertically integrated cable operators coordinated their carriage decisions with respect to independent programming. *See* Jun-Seok Kang, Reciprocal Carriage of Vertically

5. NBCU's national sports programming is a key driver in the proposed transaction,[12] as it would allow Comcast to expand its foreclosure strategy into the remaining Comcast service territories that are not served by a Comcast RSN. As of the closing of the Adelphia acquisition in 2005, the latest date on which such data are publicly available, less than half of Comcast's subscribers (including Adelphia subscribers) had access to a Comcast RSN.[13] Accordingly, Comcast is currently failing to exploit its vertical foreclosure strategy to over half of its footprint. No longer is this the case.

6. Comcast has not been secretive about its desire to expand its footprint in sports programming. According to its 2008 Annual Report, Comcast seeks to expand its reach into sports and other "live-event" programming.[14] In April 2009, Comcast's Chief Operating Officer, Steve Burke, said "Sports is the must-have programming on cable. One way that you can hedge yourself a bit is to get into it yourself."[15] Indeed, in its *Application and Public Interest Statement* requesting the instant transfer of licenses from General Electric, Comcast argued that the proposed transaction will allow the combined firm to expand its footprint in sports programming:

> The transaction will allow for *NBC's sports programming to be distributed on Versus*, Golf Channel, and Comcast's multiple RSNs, where brand identity would be greater and opportunity cost would be lower than if the sports programming were distributed on NBCU's current non-sports networks such as Oxygen, Bravo, or MSNBC. Similarly, by combining the NBC network with Comcast's national sports cable networks, new

Integrated Cable Networks: An Empirical Study, Indiana University Working Paper, August 30, 2005, at 1 (finding empirical results that "make credible an underlying premise of a 30 percent national market share limit that the Federal Communication Commission established in 1993: namely, *that MSOs may tacitly collude in their carriage decisions*, having the effect of restricting market access to startup cable networks in which those MSOs have no ownership interest") (emphasis added).

12. *Application and Public Interest Statement, Application for Consent to the Transfer of Control of Licenses from General Electric Company, Transferor, to Comcast Corporation, Transferee,* Jan. 28, 2010, at 50 [hereinafter *Application*].

13. As of May 2005, the total number of Comcast subscribers served by a Comcast RSN was roughly 11 million. *See* FCC Adelphia Docs - Exhibit AA, *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=6517610277.

14. Comcast SEC Form 10-K, for the fiscal year ended Dec. 31, 2008, at 29 ("We have invested and expect to continue to invest in *new and live-event programming* that will cause our programming expenses to increase in the future.") (emphasis added).

15. John Ourand, *Comcast's Burke takes on critics of company's dual strategies*, SPORTS BUSINESS JOURNAL, Apr. 13, 2009.

> opportunities will be created for the combined entity to negotiate for broader rights packages and to expand cross-promotion of broadcast and cable sports.[16]

Comcast may transfer some national sports content that is currently aired on NBC and other NBC-owned networks to Versus; this is critical to understanding a key motivation of the merger—namely, the expansion of Comcast's sports footprint and the associated foreclosure strategy. According to the *New York Times*, in its bid to rival ESPN, Versus would be "turned over to NBC for an overhaul," "renamed something like NBC Sports," and "on-air and production talent would migrate from NBC" to Versus.[17] In a press release announcing the proposed transaction, Comcast and GE acknowledged that the consolidation of sports programming was a key merger-related synergy.[18] If Comcast transfers some of that sports content to Versus, Comcast can demand supra-competitive fees for this content throughout its footprint (and beyond), not just in the ten DMAs served by an NBCU owned-and-operated (O&O) affiliate.[19]

7. Securing additional must-have local broadcast programming is still valuable (and provides yet another anticompetitive motivation for the proposed transaction), but· that complementary foreclosure strategy would be available only in select DMAs now served by an NBCU O&O affiliate. NBCU owns the rights to many of today's top national sporting events, including the U.S. Open Championship, The Ryder Cup, Presidents Cup, Kentucky Derby, Preakness Stakes, Notre Dame football, Wimbledon, French Open, NHL Stanley Cup Finals,

16. *Application* at 50 (emphasis added).

17. Richard Sandomir, *With NBC, Comcast zeroes in on ESPN*, NEW YORK TIMES, Dec. 2, 2009, at 13.

18. *GE Comcast Press Release*, Dec. 3, 2009, attached as exhibit to Comcast SEC Form 8K, filed Dec. 4, 2009, at 308 ("A robust sports programming lineup featuring the Olympics (through 2012), NBC Sunday Night Football, NHL/Stanley Cup, PGA Tour, US Open, Ryder Cup, Wimbledon and the Kentucky Derby, Versus, Golf Channel and . . . regional sports networks.").

19. Comcast recently announced an agreement with NBC affiliates regarding the transfer of events to a Comcast cable network. *See* Bob Fernandez, *Comcast reaches deal to keep sports events on free TV*, PHILADELPHIA INQUIRER, June 20, 2010. But this agreement does not fully address the potential for anticompetitive impact, as it the article acknowledges that (1) some parts of an event may migrate to a Comcast cable network and (2) the agreement is only temporary. *Id.* (noting that "Comcast could broadcast *some parts* of competitions or individual events on "one of their pay channels.") (emphasis added).

Summer and Winter Olympic Games through 2012, and—perhaps most importantly—NBC Sunday Night Football. By transferring those national sporting events from NBC's networks to Versus, Comcast would form a national sports network that would rival ESPN. But unlike ESPN, which is owned by Disney, Versus will be owned by the *largest* MVPD, serving roughly one-quarter of all U.S. MVPD subscribers. Consideration of Comcast's downstream profits would severely distort the joint venture's pricing incentives for Versus. In particular, Comcast would be willing to incur losses (relative to the standalone profit-maximizing price for those rights) in its upstream content division (Versus) in exchange for ill-gotten gains in its downstream distribution division, even if some of those downstream "benefits" were to spill into non-Comcast territories. And MVPD consumers will be harmed in either of two possible contingencies: (a) if Comcast merely raises the price of Versus to rival MVPDs, these higher prices will be passed through to MVPD subscribers in the form of higher cable bills; or (b) if Comcast outright refuses to supply this programming to rival MVPDs—for example, by moving the future marquee Versus programming online to escape the program access rules—then non-Comcast customers will be forced to incur switching costs to follow this programming (as they switch back to Comcast) and higher cable bills due to the reduction in MVPD competition. Non-switching subscribers who value the excluded content—but not by enough to compensate for these two costs—would be harmed and would be eliminated from the market, reflecting a reduction in output.

8. In addition to seeking control of NBCU's national sports programming, Comcast has recently acquired equity interests in several national sports networks, including MLB Network, NHL Network, and NBA TV. (Comcast also owns the Golf Channel, a national sports network.) Consistent with the discrimination hypothesis outlined here, Comcast re-tiered those three national sports networks from its lowly penetrated sports tier to its highly penetrated

"Digital Classic Tier" shortly after it acquired equity in those networks. Indeed, this is precisely how Comcast extracts equity from rights holders of sports programming; refusal to grant equity lands an independent programmer on the sports tier, which severely limits advertising opportunities. And the best way out of this predicament is to offer equity to Comcast. These acquisitions of national sports networks alongside NBCU's national sports-programming portfolio will vastly increase Comcast's market power vis-à-vis its MVPD rivals throughout Comcast's service area.

9. In the Internet Age, sports programming is critical to an MVPD because viewers demand to see it in real-time, often on their big-screen televisions. This "must-have" nature of sports programming is recognized by advertisers, which explains why such programming commands high advertising rates. By acquiring NBCU's national sports content, Comcast seeks to exploit this unique opportunity to protect its cable television profits. In particular, Comcast could withhold affiliated national sports programming from downstream rivals to impair MVPD competition. Non-sports or non-event programming that can be watched on delay without any significant diminution in viewer utility is relatively less valuable, as MVPD subscribers increasingly have alternative means for accessing that content after it originally airs, including via the Internet. But Comcast has a solution for that problem as well (originally called "TV Everywhere" and rebranded as "Fancast").

10. In addition to securing national sports programming, Comcast is acquiring local must-have programming via NBCU's ten owned-and-operated (O&O) NBC affiliates. These properties will also increase Comcast's market power vis-à-vis MVPD rivals, but only in the DMAs in which NBCU owns a local NBC affiliate. In the seven local markets in which NBCU owns a broadcast affiliate *and* Comcast owns an RSN (the "overlapping markets")—Chicago,

Philadelphia, Dallas-Ft. Worth, San Francisco-Oakland-San Jose, Washington, DC (Hagerstown), Miami-Ft. Lauderdale, and Hartford-New Haven—Comcast will realize a substantial increase in market power vis-à-vis its MVPD rivals. In particular, Comcast can now target customers of rival MVPDs who were unwilling to switch on account of access to local sports but might switch on account of access to NBC. As it turns out, Comcast serves approximately 70 percent of MVPD subscribers in the Philadelphia DMA, and it serves approximately 60 percent of MVPD subscribers in the Chicago, Miami, and San Francisco DMAs. With such significant downstream market shares, Comcast can count on recouping any upstream losses associated with the withholding of the NBC affiliate with ill-gotten downstream gains. And given the fact that Comcast is often the largest provider of local advertising in these local markets, the acquisition of an NBC affiliate would increase Comcast's ability to raise local advertising rates.[20]

11. Relative to a standalone NBC broadcast affiliate, Comcast's ownership reduces the cost to the affiliate of withholding programming from Comcast's MVPD rivals. When faced with the prospect of not watching NBC programming long-term,[21] some MVPD customers in the

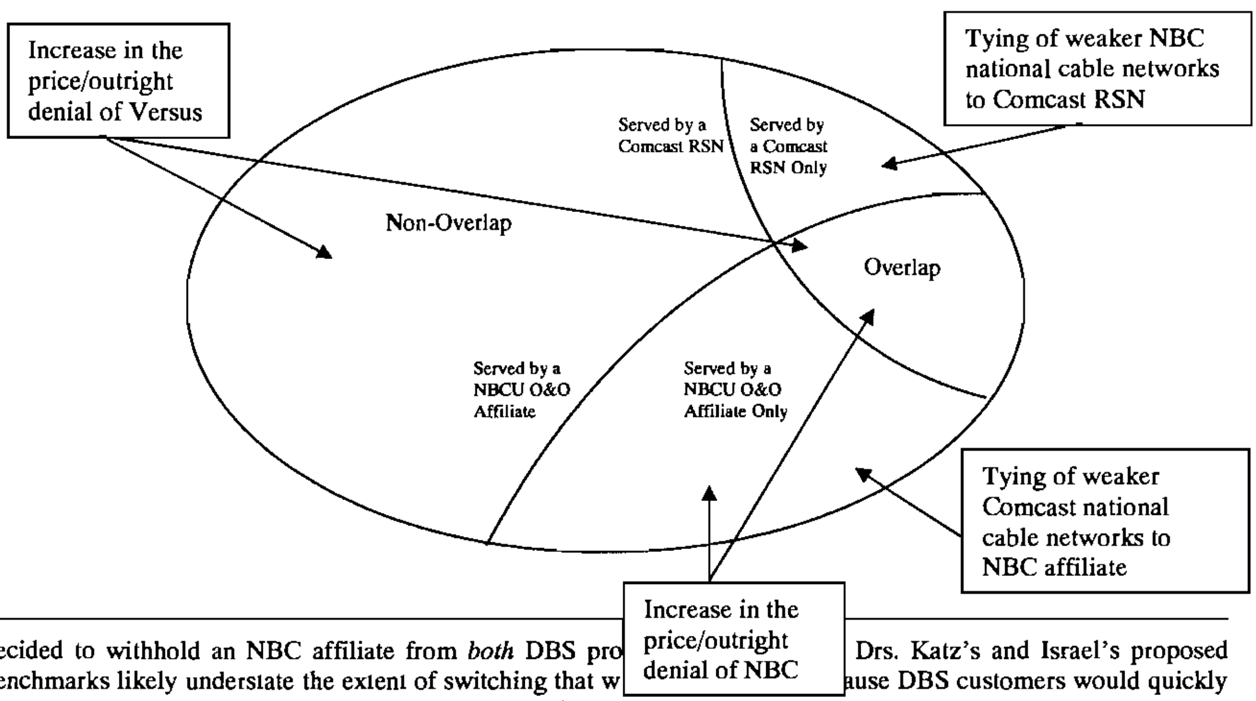
20. According to an analysis by Booz Allen based on 2005 advertising data, Comcast's share of local advertising sales would increase from 25 to 39 percent in Philadelphia, and from 24 to 36 percent in San Francisco. *See* Comments of NBC, filed in NBC Media Ownership Comments, FCC 06-121 (Oct. 2006). The increase in the Herfindahl-Hirschman index (HHI) caused by the proposed transaction would be approximately 700 and 500, and the post-merger HHI would be approximately 2,400 and 1,900 in Philadelphia and San Francisco, respectively. According to the *Horizontal Merger Guidelines*, such levels would create a presumption of an exercise in market power. *See* Department of Justice and Federal Trade Commission Horizontal Merger Guidelines, § 1.51 ("Mergers producing an increase in the HHI of more than 50 points in highly concentrated markets post-merger potentially raise significant competitive concerns, depending on the factors set forth in Sections 2-5 of the Guidelines. Where the post-merger HHI exceeds 1800, it will be presumed that mergers producing an increase in the HHI of more than 100 points are likely to create or enhance market power or facilitate its exercise.").

21. Comcast has offered an economic report by Drs. Michael Katz and Mark Israel that purports to show that MVPD subscribers would not switch to Comcast when faced with a *short-term* lack of a broadcast affiliate based on a handful of Dish-related anecdotes that have no import here. *See Israel & Katz NBCU, supra*. In particular, Drs. Katz and Israel examine a few cases in which a *single* DBS operator (Dish) lost access to a broadcast network. In those cases, Dish's customers likely understood that the carriage dispute would be resolved shortly, as the local affiliate was incurring significant losses with no offsetting downstream benefits. Moreover, Drs. Katz's and Israel's measure of the treatment effect—Comcast's increase in market share—fails to capture *intra*-DBS switching (that is, from Dish to DirecTV that may have occurred in the handful of events studied), which could not occur if Comcast

relevant DMAs will switch to Comcast; as a result, Comcast will earn incremental (downstream) profits. These profits will offset the cost to Comcast of withholding the NBC affiliate. Recognizing these tradeoffs, Comcast will be able to bargain for higher programming prices for programming previously owned by NBC than NBC would otherwise be able to negotiate on its own. This is true even if the loss in upstream programming profit from withholding the NBC affiliate exceeds the gain in downstream MVPD profit due to customer switching. And MVPD consumers will be harmed because these higher programming prices will be passed through to them in the form of higher cable bills.

12. Figure 1 shows the areas of Comcast's service territory that are most vulnerable to an exercise of market power made possible by the proposed transaction.

FIGURE 1: COMCAST'S SERVICE TERRITORY MOST VULNERABLE TO AN EXERCISE OF MARKET POWER



decided to withhold an NBC affiliate from *both* DBS pro … Drs. Katz's and Israel's proposed benchmarks likely understate the extent of switching that w … use DBS customers would quickly recognize that Comcast's withholding of an NBC affiliate was likely a permanent strategy, the switching to Comcast would likely be as significant as the DBS-to-cable switching that has occurred in Philadelphia due to Comcast's denial of access to CSN SportsNet Philadelphia to DBS rivals. Stated differently, by injecting an offsetting benefit to the withholding strategy into the calculus, Comcast's withholding of a (now-Comcast-owned) NBC affiliate becomes *more credible* to MVPD rivals and their subscribers than NBCU's withholding of an NBC affiliate.

In all markets within Comcast's service territory, including the non-overlapping areas and the areas served by a Comcast RSN only in Figure 1, Comcast will enjoy newfound market power vis-à-vis its MVPD rivals owing to its control of NBCU's national sports programming. This exercise of market power would take the form of outright denial of access or higher prices for Versus—that is, higher prices than what would be charged by an independent network that owned the same programming rights. In the markets within Comcast's territories served by an NBCU O&O affiliate, Comcast would either deny access or raise the price of that affiliate network, particularly in the markets already served by a Comcast RSN, as those happen to be markets in which Comcast generally enjoys local market shares in excess of 50 percent.

13. Although NBC's remaining video programming, which includes Syfy, Bravo, mun2, and Oxygen, may not constitute must-have content,[22] Comcast would still be able to extract inflated rates for this content under the proposed transaction. Specifically, Comcast could bundle this content with a compelling network—that is, "tying" product—in the form of a Comcast RSN (or a combined RSN and a local NBC affiliate). Comcast could then extract supra-competitive prices for the "tied" products by threatening to charge a "penalty price" for its RSN (or the combined RSN and local NBC affiliate) were it purchased on a standalone basis. Indeed, Comcast has allegedly executed this very strategy in Chicago, with CSN-Chicago serving as the tying product and the new Comcast-affiliated network, called Sprout, serving as the tied product.

22. It bears noting that the must-have feature of the programming is only relevant with respect to whether Comcast refuses to supply affiliated programming to rival MVPDs. Affiliation of any programming, regardless of its must-have nature, creates the incentive for a vertically affiliated cable operator such as Comcast to discriminate vis-à-vis independent, similarly situated networks. For example, with ownership of NBCU's national news networks, MSNBC and CNBC, Comcast would have a fresh incentive to discriminate in the carriage, tiering, and pricing of independent news networks that compete with MSNBC and CNBC.

According to a complaint brought by Dish Network,[23] Comcast threatened to charge a penalty price for CSN-Chicago unless Dish purchased Sprout as part of a bundle, presumably at a supra-competitive price. The proposed transaction significantly increases the potential for such anticompetitive bundling, as the new tying product is significantly stronger for Comcast than a Comcast RSN on its own in the overlapping markets. And in markets served by a Comcast RSN but not served by an NBC O&O affiliate, including Sacramento, Baltimore, and Detroit, Comcast can now tie NBC's other network programming (for example, Syfy or Oxygen) to a Comcast RSN—a tying strategy that was not as easily available to NBCU.

14. Last but not least, the proposed transaction would allow Comcast to impair the development on the Internet as an alternative platform for video delivery. As part of the proposed transaction, Comcast would acquire NBCU's (32 percent) interest in Hulu.com, a joint venture of NBCU, Fox (News Corp), and ABC Networks (Disney). By February 2010, the number of videos watched on Hulu.com had increased to 912 million, making Hulu.com the second most popular online video content portal.[24] Among the most popular shows watched on Hulu.com in the first quarter of 2010 were ABC's *Modern Family*, Fox's *Glee*, and Fox's *Family Guy*.[25] Comcast will also acquire an interest in NBCU's other online content, including NBC.com, CNBC.com, and iVillage.com. And Comcast will acquire access to Universal's library of movies, which could be released for Comcast's cable customers before they are released to Comcast's MVPD rivals.

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23. Arbitration Demand, Dish Network v. Comcast Corporation LLC, AAA Case No. ________ (filed Jan. 27, 2010), ¶¶ 3, 13.

24. comScore Releases February 2010 U.S. Online Video Rankings, *available at* http://www.comscore.com/Press_Events/Press_Releases/2010/4/comScore_Releases_February_2010_U.S._Online_Video_Rankings.

25. Brian Stelter, *Viacom and Hulu part ways*, NEW YORK TIMES, Mar. 2, 2010, *available at* http://www.nytimes.com/2010/03/03/business/media/03hulu.html

15. Video programming delivered via the Internet is a significant threat to all MVPD distributors, as acknowledged by Comcast itself in the Commission's most recent video competition proceeding.[26] The recent increase in the quantity of video programming available online along with a burgeoning ecosystem of software and hardware that enable customers to view video delivered over the Internet on their televisions has transformed the Internet into a closer substitute to cable television. The transition of Internet video from a complement to a substitute for cable television can be seen in recent viewing data. According to comScore, the average American web user spent about ten minutes a day in early 2009 (slightly under six hours per month) viewing online video, compared with roughly 300 minutes spent watching live television (slightly over 150 hours per month),[27] suggesting that the two platforms were mild substitutes not long ago. Because the audience for online video is young and growing, and because the broadcast networks are replicating their content online, however, the Internet has quickly emerged as a serious threat to cable television. Over the course of 2009, the average amount of time that web users spent watching videos online more than *doubled* to nearly thirteen hours per month (from slightly under six hours per month in the beginning of the year).[28] Independent analyses confirm this trend. Parks Associates reported that the number of U.S. broadband households watching premium online content doubled in 2009; as of April 2010, over 25 million U.S. broadband households regularly watched full-length television shows online, and

26 In the FCC's thirteenth annual report on video competition, Comcast noted that "Many networks have jumped head-first into Internet video, providing consumers with an interactive *alternative* to traditional TV-set viewing." Comcast Comments at 29-30 (emphasis added). Comcast provided further evidence that Internet video is a substitute to cable television: "All of these modalities of communications are important to younger consumers, all are part of the paradigm shift to a 'what-you-want-when-you-want-it' world, and *all of them compete with traditional and not-so-traditional video distribution technologies* for time, attention, and dollars." *Id.* at 59 (emphasis added).

27. *Time Warner and the internet: After the divorce*, THE ECONOMIST, May 7, 2009.

28. *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).

over 20 million watched movies online.[29] The Convergence Consulting Group estimated 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.[30]

16. Some of the most compelling online video is now available from Hulu.com, programmers' websites (such as Comedy Central), and the growing libraries of services like Apple's iTunes, Amazon's Unbox, Amazon's Video on Demand service, Netflix's "Watch Instantly" streaming service, and sites offering free content such as Joost. New hardware from firms such as Apple (Apple TV) and TiVo (the recently released TiVo Premier), and new software running on gaming consoles, DVD players, and increasingly built into televisions themselves are making it easier for subscribers to access the Internet from their televisions. Indeed, a new class of "over-the-top" (OTT) video providers, such as Boxee and Roku, aims to reach Internet users with subscription-based or advertising-supported streaming-video services. The success of the OTT business models depends critically on access to online content. And investment by broadband access providers in faster and wider networks depends on the development of this ecosystem, as the demand for the pipe is derived from the demand of the content that rides over the pipe.

17. Cable companies have recognized the threat of their video distribution business being cannibalized by their Internet business. 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

29. 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.

30. 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.

where people, particularly young people, are saying all I need is broadband."[31] In April 2009, Comcast's president and chief operating officer, Steve Burke, likened television viewers' movement to online video to "wildfire."[32] According to Melinda Witmer, Time Warner Cable's programming chief, OTT video providers are actual (and not just potential) competitors: "We wake up every day and there is some new competitor out there—a Roku or a Boxee. People like to think of cable operators as monopolists, but we face a lot of competition just to keep the business we have."[33] Despite this threat, incumbent cable operators still maintain an advantage over OTT video providers by virtue of their control over video content, as explained by Time Warner executive Jeffrey Bewkes: "We're fortunately in a position where this [Internet video] doesn't cost us much money. We have an advantage and we're going to use that advantage."[34]

18. Beholden to cable operators for license fees and access to advertisers, some broadcast networks appear to have fallen in line. For example, Hulu.com has blocked Boxee's ability to access Hulu.com video feeds. According to Jeff Zucker, CEO of NBC Universal, "We want to find an economic model that makes sense."[35] Although broadcasters may weakly prefer viewers to access their content via cable television rather than via the Internet (depending on which platform generates more advertising revenue), a combined Comcast-NBCU would have even greater economic incentive to block such services, as the combined firm would fully internalize the losses associated with cancelled cable television subscriptions. Indeed, the Hulu-

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31. Christopher Lawton, *More Households Cut the Cord on Cable*, WALL STREET JOURNAL, May 28, 2009, *available at* http://online.wsj.com/article/SB124347195274260829.html.

32. Tom Lowry, *Cable TV: Pushing to Become More Web-like*, BUSINESSWEEK, Apr. 16, 2009, *available at* http://www.businessweek.com/magazine/content/09_15/b4126050298367.htm [hereinafter *Cable TV*].

33. Ronald Grover, Tom Lowry & Cliff Edwards, *Revenge of the Cable Guys*, BUSINESSWEEK, Mar. 11, 2010, available at http://www.businessweek.com/magazine/content/10_12/b4171038593210_page_2.htm [hereinafter *Revenge of the Cable Guys*].

34. Knowledge at Wharton, Cable TV Follows Its Subscribers to the Internet, July 22, 2009, *available at* http://knowledge.wharton.upenn.edu/article.cfm?articleid=2295. In the same article, the former chief economist of the FCC, Gerald Faulhaber, described Internet video as "very disruptive," a technology that "attacks the model of cable television." *Id.*

35. Dan Frommer, *NBC Boss Explains Why Boxee Users Can't Have Hulu*, Mar. 18, 2009, *available at* http://www.businessinsider.com/nbc-boss-explains-why-boxee-users-cant-have-hulu-2009-3.

Boxee disagreement appears to have started in February 2009,[36] one month before the Comcast-GE negotiations over NBCU began by most press accounts.[37] Accordingly, it is certainly plausible that Comcast exerted some pressure on Hulu.com to not allow Hulu.com content to appear on Boxee.

19. Comcast has addressed this increasing threat of Internet-based television primarily in three ways. *First*, Comcast has made some of the video content it distributes available online, but only to paying customers of both its cable television and cable modem services through its TV Everywhere service, which is branded in Comcast markets as "Fancast."[38] The proper lens to view this conduct is a tie-in, with Comcast's cable television and cable modem services serving as the tying product and the online content serving as the tied product. *Second*, Comcast requires that unaffiliated cable networks not make their content available online as a condition of being carried on Comcast's cable television systems.[39] The proper lens to view this conduct is an exclusive deal; Comcast insists that a cable network not license its content to OTT video providers or post content to its own website as a condition of carriage on Comcast's cable system. *Third*, Comcast maintains complete control of the set-top box used to access its cable television service by requiring its cable television customers to purchase the set-top box from Comcast to enjoy the full suite of interactive services. The proper lens to view this conduct is another tie-in; in this case, the tied product is the set-top box. It bears

36. *See, e.g.*, Chadwick Matlin, *What Happened Between Boxee and Hulu, and When*, THE BIG MONEY, Feb. 8, 2010.

37. *See, e.g.*, Tim Arango, *G.E. Makes It Official: NBC Will Go to Comcast*, NEW YORK TIMES, Dec. 3, 2009 ("The deal's genesis lies in frequent flirtations over the last several years between Comcast and General Electric, although serious talks began in March.").

38. Fancast provides access to network shows and movies integrated with television-related news and a viewing guide for their video service. Information about Comcast's Fancast is available at http://www.fancast.com.

39. *Cable TV*, *supra*, at *1 ("As the cable companies scramble to get these technologies out of the lab, they are trying to prevent cable networks from putting their shows online. In recent months, Big Cable has reminded USA, Bravo, TNT (TNT), and hundreds of other channels that the cable companies provide about half their revenues, in the form of fees to carry their shows. The implicit warning: put your content online and forfeit nearly $30 billion. 'If I don't have a customer,' says Time Warner Cable's Britt, 'the programmers aren't going to have a customer.'").

noting that Comcast's customers can access Fancast only via their computers, another reflection of Comcast's intent to sever the Internet from the television.

20. These exclusionary strategies will slow the growth of Internet-only television and thereby protect Comcast's market power in the supply of cable television and cable modem service. Because the marginal (or imputed) price of accessing Comcast's online portfolio is zero as a result of the tie-in (and Comcast's pricing structure), providers of OTT video seeking to compete against Comcast will be forced to raise revenues from advertisers only, which could undermine their business model. By preventing unaffiliated cable networks from posting their content online as a condition of carriage, and by denying access to its affiliated online content, Comcast can deny a critical input to OTT video providers, further impairing Internet-only television. When Comcast's affiliated online properties are combined with those of Time Warner, which also participates in TV Everywhere, the resulting collection of withheld content could significantly impair OTT providers. A harmful byproduct of this foreclosure of OTT video providers is that it would attenuate the value of the Internet ecosystem for rival broadband access providers, which could reduce their incentives to invest in broadband infrastructure. By denying its online portfolio to in-region rival Internet service providers ("ISPs")—that is, by tying Fancast to *Comcast's cable modem service*—Comcast and other members of TV Everywhere can induce substitution away from fiber/DSL connections offered by telephone companies, further weakening broadband access rivals. Finally, by controlling the set-top box, Comcast can ensure that its video subscribers cannot access the Internet from the comfort of their televisions. An independent set-top-box maker would be more inclined to add features, including the ability to connect to and download video from the Internet via a Wi-Fi connection, that could threaten a cable provider's cable television revenues.

21. Comcast's acquisition of NBCU's online content portfolio would facilitate these exclusionary strategies, both on a unilateral basis and on a coordinated basis with other cable operators. Denying access to NBCU's online content portfolio, especially Hulu.com, would significantly impair the ability of OTT providers to compete effectively for online video customers. And to the extent that TV Everywhere does not provide access to rival ISPs on reasonable terms, denying access to NBCU's online content portfolio would also impair the ability of in-region ISP rivals to compete effectively for broadband subscribers. Although it may be possible to achieve these outcomes through (exclusive) contracting, having these must-have assets under ownership greatly facilitates the exclusionary objective, as the possibility of defection by the affiliated, online content provider (Hulu.com and others) decreases.[40] When done in conjunction with Time Warner and other cable operators that join TV Everywhere, the foreclosure share associated with the exclusionary strategy increases, which in turn increases Comcast's market power in the supply of online video. Independent cable networks and movie studios naturally fear upsetting Comcast by posting their video content online or making it available to OTT video providers; by including other cable operators, including Time Warner, in TV Everywhere, the combined leverage vis-à-vis independent networks is even stronger.[41] Having NBCU's content portfolio also would increase Comcast's market power vis-à-vis independent programmers. In particular, Comcast's threat not to carry independent networks that seek to post some of their content online becomes more credible as Comcast adds to its online video content portfolio, as Comcast's online platform (Fancast) would become the most valuable

40. It is no accident that the initial trial of TV Everywhere in the summer of 2009 allowed viewers to tap into programming provided by TNT and TBS, both of which are owned by Time Warner. *See Revenge of the Cable Guys, supra.*

41. *Revenge of the Cable Guys, supra* ("Back at Time Warner Center in New York and One Comcast Center in Philadelphia, the cable operators began to realize they *had the studios locked down.* As Frank Biondi, former president of the media giant Viacom (VIA), puts it: 'Why would [the studios] make a deal with a competitor to their largest customer and risk angering them?') (emphasis added).

platform for accessing online video content. Finally, Comcast's acquisition of NBCU's online content portfolio would increase Comcast's incentives to thwart set-top-box technologies that would enable cable television customers to access the Internet from their televisions. If a Comcast cable customer could access Hulu.com, for example, from his television without having to authenticate his being a Comcast cable television customer, then the value of Comcast's cable television platform would be compromised.

* * *

22. This theory of anticompetitive harm arising from the proposed transaction is explained in further detail here. My report is organized as follows: In Part I, I explain the threat to Comcast's dominance in the delivery of video programming. I define the relevant upstream and downstream markets for assessing the merger's likely effects. I provide two measures of Comcast's market power in the supply of video programming at the local (DMA) level: (a) high market shares combined with high entry barriers, and (b) Comcast's ability to exclude rivals. Next, I describe how new and old delivery platforms threaten Comcast's dominance in the supply of MVPD service.

23. The theory of anticompetitive harm is not just theoretical; Comcast currently engages in nearly identical vertical foreclosure strategies vis-à-vis its in-region MVPD rivals, primarily at the local level. In Part II, I describe these strategies and the resulting anticompetitive effects in detail. I provide an economic framework for assessing Comcast's exclusionary conduct. Next, I document the types of exclusionary conduct that Comcast currently engages in, including (a) refusing to supply affiliated programming to rival distributors on reasonable terms, (b) denying independent programming networks' access to Comcast's subscribers, and (c) tying affiliated Internet content to the purchase of Comcast cable television service.

24. In Part III, I explain how the proposed transaction would increase Comcast's ability and incentive to engage in these anticompetitive strategies. Owning NBC's marquee network and online programming would facilitate a host of exclusionary conduct by Comcast on both a unilateral basis and on a coordinated basis with other cable operators. In particular, NBC's marquee local broadcast programming would allow Comcast to extend its market power in the ten DMAs in which NBCU has a local affiliate. And NBCU's marquee national sports programming, once moved to Versus, would allow Comcast to affect downstream competitive outcomes throughout its territories. Comcast would also have a fresh incentive to deny access to independent networks that are similarly situated to NBCU's affiliated networks, including national sports, Spanish-language, women's programming, and national news networks. Finally, NBCU's marquee Internet properties, including Hulu.com, MSNBC.com, and NBC.com, would allow Comcast to restrict access to Comcast cable subscribers, further weakening Comcast's downstream MVPD rivals and slowing the development of the Internet as a competitive platform for video delivery.

25. In Part IV, I propose remedies that the Commission should craft to protect competition in the video marketplace. To address Comcast's refusing to supply affiliated programming, including Versus and the ten O&O NBC affiliates, to rival MVPDs on reasonable terms, I propose, among other things, that Comcast should be subjected to an a-la-carte restraint that would (1) require Comcast to sell its affiliated networks on an unbundled basis to rival MVPDs, and (2) require Comcast to permit its customers to "opt out" of an affiliated network on Comcast's Standard Service tier for a rebate equal to the wholesale price of the network. I demonstrate that the a-la-carte restraint corrects the incentive problem that Comcast now faces—

namely, to choose a wholesale price for its affiliated networks in excess of the price that would be chosen by an independent network owner.

26. To address Comcast's denying access to independent programming networks, I propose, among other things, that Comcast should be compelled to carry the independent network upon the referral of a program carriage complaint by the Media Bureau to an administrative law judge, at interim terms chosen by the Media Bureau. Moreover, upon an administrative law judge's decision that Comcast has discriminated in favor of its affiliated network and that, as a result, the independent network has been unreasonably restrained in its ability to compete, Comcast should be compelled to pay damages to the independent network in the amount equal to the forgone licensing revenues since the discriminatory conduct began with interest. The Commission should also consider modifying its current program-carriage adjudication process to reflect a baseball-style arbitration.

27. Finally, to address Comcast's tying affiliated Internet content (Fancast) to the purchase of Comcast cable video and cable modem service, I propose the Commission bans all such tying arrangements, and it compels Comcast to price access to its Fancast service to customers of any MVPD and any broadband service provider on a standalone and non-discriminatory basis. To ensure that the non-discriminatory rate for Fancast that Comcast sets for non-Comcast broadband access customers is also reasonable, Comcast's video and cable modem customers should be able to "opt out" of Fancast at a savings from the cable-video/cable-modem bundle equal to the standalone rate for Fancast.

QUALIFICATIONS

28. My name is Hal J. Singer. I am a Managing Director of Navigant Economics. I am also an adjunct professor at the McDonough School of Business at Georgetown University.

My areas of economic expertise are antitrust, industrial organization, finance, and regulation. I have applied my expertise to several regulated industries, including telecommunications, video programming, insurance, and health care.

29. I have published a book chapter in *Access Pricing: Theory, Practice and Empirical Evidence* (Justus Haucap and Ralf Dewenter eds., Elsevier Press 2005) and in *Handbook of Research in Trans-Atlantic Antitrust* (Philip Marsden, ed., Edward Elgar Publishing 2006). I am also the co-author of the book *Broadband in Europe: How Brussels Can Wire the Information Society* (Kluwer/Springer Press 2005).

30. I have published scholarly articles in many economics and legal journals, including *American Economic Review Papers and Proceedings, Berkeley Technology Law Review, Canadian Journal of Law and Technology, Federal Communications Law Journal, Harvard Journal of Law and Technology, Hastings Law Journal, Journal of Business and Finance, Journal of Business Law, Journal of Competition Law and Economics, Journal of Financial Transformation, Journal of Industrial Economics, Journal of Insurance Regulation, Journal of Network Industries, Journal of Regulatory Economics, Journal of Telecommunications and High Tech Law, Review of Network Economics, Telecommunications Policy Journal, Topics in Economics Analysis and Policy,* and *Yale Journal on Regulation.*

31. Two of my articles are of particular relevance to this proceeding: "The Competitive Effects of a Cable Television Operator's Refusal to Carry DSL Advertising," *Journal of Competition Law and Economics* (Vol. 2, No. 2, pp. 301-31, 2006); and "Vertical Foreclosure in Video Programming Markets: Implications for Cable Operators," *Review of Network Economics* (Vol. 6, 2007).

32. In regulatory proceedings, I have presented economic testimony in several forums, including the FCC, the U.S. Federal Trade Commission, the Antitrust Division of the U.S. Department of Justice, the U.S. National Highway Traffic and Safety Administration, the House of Commons of Canada, the Canadian Radio-television and Telecommunications Commission, and the U.S. Congressional Budget Office. My written testimony on the effect of telecom entry on cable television prices was cited extensively by the Department of Justice in a November 2008 report titled *Voice, Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers*.[42]

33. I have served as an economic expert for the NFL Network and for MASN, which owns the television rights to live baseball games of the Baltimore Orioles and the Washington Nationals, in several carriage disputes. On June 2, 2008, the arbitrator in *MASN v. Time Warner*, Judge Daniel H. Margolis, ruled that Time Warner "did discriminate against MASN based on affiliation in not negotiating for carriage of MASN on an analog tier."[43] In his decision, Judge Margolis cited my analysis on behalf of MASN on several occasions[44] in support of his decision that MASN's offer price "accurately reflects the fair market value of the rights to carry MASN in its North Carolina television territory."[45] In its October 30, 2008 *Order on Review* rejecting Time Warner's appeal of the arbitrator's decision, the Media Bureau cited my oral testimony during Phase II in support of the proposition that "the carriage decisions of four of the largest MVPDs operating in North Carolina—that serve the overwhelming majority of non-TWC subscribers to paid television service in North Carolina—are an appropriate reference point for assessing fair

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42. Department of Justice, Voice, Video and Broadband: The Changing Competitive Landscape and Its Impact on Consumers, Nov. 17, 2008, *available at* http://www.usdoj.gov/atr/public/press_releases/2008/239479.htm.

43. *TCR Sports Broadcasting Holding, L.L.P, d/b/a Mid-Atlantic Sports Network v. Time Warner Cable Inc.*, Case No: 71-472-E-00697-07, June 2, 2008, at 22.

44. *Id.* at 19, 19 n.13, and 21.

45. *Id.* at 22.

market value."[46] A declaration that I submitted to the Media Bureau also was cited extensively in the Bureau's order designating a program carriage complaint by the National Football League for hearing.[47] I currently serve as an economic expert for the Tennis Channel in its carriage dispute with Comcast.

34. In addition to these carriage disputes, I have served as a testifying expert in several litigation matters. My experience as a testifying expert in litigation is summarized in my Curriculum Vitae, which is attached to this report.

35. Before joining Navigant Economics, I was president of Empiris LLC, an economic consulting firm based in Washington D.C. Prior to that, I worked as an economist at Criterion Economics and LECG. In addition, I have worked as an economist for the Securities and Exchange Commission and the Army Corps of Engineers.

36. I earned M.A. and Ph.D. degrees in economics from the Johns Hopkins University and a B.S. *magna cum laude* in economics from Tulane University.

37. I file this report in my individual capacity. I have no financial stake in the outcome of this case.

I. THE THREAT TO COMCAST'S DOMINANCE IN THE DELIVERY OF VIDEO PROGRAMMING

38. Comcast wields significant market power within its cable footprint in the supply of MVPD services. New and traditional delivery platforms, including DBS, fiber networks built by telephone carriers, and the Internet, threaten its power.

46. *TCR Sports Broad. Holding, L.L.P. v. Time Warner Cable Inc.*, Order on Review, DA 08-2441, ¶ 47, n.186 (MB Oct. 30, 2008).

47. *Herring Broad., Inc. v. Time Warner Cable Inc.*, et al., Mem. Op. & Hearing Designation Order, 23 FCC Rcd 14787 ¶¶ 77, 79, 81, 82, 83, 86 (2008).