Stephanie A. Roy
202 429 6278
sroy@steptoe.com

1330 Connecticut Avenue, NW
Washington, DC 20036-1795
202 429 3000 main
www.steptoe.com

Steptoe
STEPTOE & JOHNSON LLP

REDACTED – FOR PUBLIC INSPECTION

August 25, 2014

By HAND DELIVERY

William T. Lake
Chief, Media Bureau
Federal Communications Commission
445 12th Street S.W.
Washington, D.C. 20554

Re: Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Assign or Transfer Control of Licenses and Authorizations, MB Docket No. 14-57

Dear Mr. Lake:

In accordance with the *Joint Protective Order*,[1] DISH Network Corporation submits the attached redacted version of its Petition to Deny in the above-referenced proceeding. The "[[ ]]" symbols denote where Confidential Information has been redacted. The Confidential version of this filing is being simultaneously filed with the Commission and will be made available pursuant to the terms of the *Joint Protective Order*.

Please contact me with any questions.

Respectfully submitted,

Stephanie A. Roy
Counsel for DISH Network Corporation

[1] Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Transfer Control of Licenses and Authorizations, MB Docket No. 14-57, *Joint Protective Order*, DA 14-463 (Apr. 4, 2014).

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Applications of	)	MB Docket No. 14-57
	)	
Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations	)	
	)	
For Consent To Transfer Control of Licenses and Authorizations	)	

PETITION TO DENY OF DISH NETWORK CORPORATION

Pantelis Michalopoulos
Stephanie A. Roy
STEPTOE & JOHNSON LLP
1330 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 429-3000

Counsel for DISH Network Corporation

Jeffrey H. Blum, Senior Vice President
& Deputy General Counsel
Alison Minea, Director and Senior Counsel,
Regulatory Affairs
Hadass Kogan, Associate Corporate Counsel
DISH NETWORK CORPORATION
1110 Vermont Avenue, NW, Suite 750
Washington, D.C. 20005
(202) 293-0981

August 25, 2014

Table of Contents

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Applications of	)	MB Docket No. 14-57
	)	
Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations	)	
	)	
For Consent To Transfer Control of Licenses and Authorizations	)	

PETITION TO DENY OF DISH NETWORK CORPORATION

DISH Network Corporation ("DISH")[1] respectfully opposes the unprecedented consolidation that would result from the proposed merger of Comcast Corporation ("Comcast") with Time Warner Cable, Inc. ("TWC") (collectively the "Applicants").[2] Comcast and TWC fail to demonstrate that the merger would serve the public interest, and there are no conditions or divestitures that would alleviate the substantial harms posed by the merger. As a result, DISH

[1] DISH is a competitor in the multichannel video programming distributor ("MVPD") market with Comcast, TWC, and Charter Communications, Inc. ("Charter"), and is a purchaser of content both from Comcast and its NBCUniversal division. DISH is also a competitor in the online video market with Comcast, TWC, and Charter. For these and other reasons described herein, DISH is a party in interest under Section 309(d)(l) of the Communications Act. *See* 47 U.S.C. § 309(d)(l).

[2] *See* Public Notice, "Commission Seeks Comment on Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations," MB Docket No. 14-57, DA 14-986 (rel. Jul. 10, 2014).

respectfully urges the Federal Communications Commission ("FCC" or "Commission") to deny the Application[3] or designate it for a hearing.

I. INTRODUCTION AND SUMMARY

The merger would permit and motivate the combined company to hurt or destroy online video rivals through its control over the broadband pipe, passing an estimated two thirds of U.S. households. The video industry has come to depend on broadband, much more so today than the last time Comcast proposed an industry-changing merger. Over-the-top ("OTT") video has become an increasingly important complement to linear multi-channel video programming distribution ("MVPD") services. Stand-alone OTT video services, provided by online video distributors ("OTT video providers" or "OVDs"), have also become a more significant complement to linear MVPD offerings.

High-speed broadband connections are the lifeblood of these new online services, and these connections will only become more important with each passing year. The services provided by DISH and other OTT video providers optimally require a household to have actual and consistent download speeds of at least 25 Megabits per second ("Mbps"). If approved, the combined Comcast/TWC would control **50 percent** of the broadband pipes in the United States that have speeds of at least 25 Mbps. Most households will have no alternative to the combined company's high-speed broadband pipe. Some will have one alternative at best. As companies such as DISH innovate and invest to meet the growing consumer appetite for broadband-reliant video products and services, this chokehold over the broadband pipe would stifle future video competition and innovation, all to the detriment of consumers. As DISH testified to the Senate

[3] *See* Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Transfer Control of Licenses and Authorizations, Applications and Public Interest Statement, MB Docket No. 14-57 (filed Apr. 8, 2014) ("*Application*").

Commerce Committee in July, this merger would result in "too much power in the hands of too few."[4]

To damage competition and hurt consumers, the combined company would have an arsenal of weapons at its disposal:

- **Choke Points on the Comcast/TWC Broadband Network:** The combined Comcast/TWC would be able to foreclose or degrade the online video offerings of competing MVPD and OTT video providers at any of three "choke points": (1) the points of interconnection to the combined company's broadband network, in effect the "on ramp" to the Comcast/TWC network; (2) the last mile "public Internet" portion of the pipe to the consumer's home; and (3) managed or specialized service channels, which can act as super HOV-lanes and squeeze the capacity of the "public Internet" portion of the Comcast/TWC broadband pipe.

- **Discriminatory Data Caps:** The combined Comcast/TWC would be able to impose anti-competitive data caps on competing MVPD and OTT services. This could be done by exempting Comcast/TWC affiliated content from such data caps and then setting caps so low that consumers are incentivized to choose Comcast/TWC services over competing MVPD and OTT video services.

- **Programming Foreclosure:** The combined Comcast/TWC would be able to foreclose access to, or raise the prices of, its own affiliated programming to harm competing MVPD and OTT services.

- **Restriction of Third-Party Online Rights:** The combined Comcast/TWC would be able to coerce third-party content owners and programmers to withhold online rights from online video platforms, thereby stifling a crucial source of competition and innovation in the video industry.

It is true that each Applicant, and particularly Comcast, can cause some of these harms even today. It is also true that Comcast has a history of attempting to "corner the market."[5] But the Commission should reject the Applicants' invitation to rule that each company is dominant already in geographically separate fiefdoms, and that therefore the merger cannot do much more

[4] Testimony of Jeffrey H. Blum, DISH, "At a Tipping Point, Consumer Choice, Consolidation and the Future of the Video Marketplace," Senate Committee on Commerce, Science, and Transportation, 113th Congress, p.5 (Jul. 16, 2014).

[5] *The New Establishment: Brian Roberts*, Vanity Fair, p.166 (Oct. 1997) ("'We don't like to use the words, 'corner the market,' because the government watches our behavior,' Roberts says with a laugh. 'Let's just say we've been able to do things before they're in vogue.'").

harm. As DISH's expert economist – Professor David Sappington – concludes, the Commission should look past the gerrymandered local markets proposed by the Applicants. The reason is simple: a nationwide OTT service needs broad geographic penetration, at sufficient speed and with sufficient quality.

The merger would dramatically increase the incentive and ability of the combined company to use the weapons available to it in order to deny OTT video providers that broad penetration. Foreclosure would be more profitable than it is to either company pre-merger. The revenues from such behavior would be significantly greater than both companies' standalone prospects today. Among other things, the chances of permanently damaging or destroying rivals such as Netflix's and DISH's online services would be greater. The risk of losing broadband customers would be smaller because of the reduction in the ability of consumers to "benchmark" based on the performance of other cable operators. Moreover, Comcast has stronger anti-competitive incentives than TWC today, as it has more products than TWC that are threatened by OTT competition (including its NBC Universal ("NBCU") programming assets). The merger would allow Comcast to leverage the two companies' combined subscriber base in the service of these anti-competitive incentives.

Comcast will have a greater incentive to foreclose rivals from its NBCU programming. And, even more concerning, this transaction would remove a key rationale for the Commission's approval of the NBCU acquisition. To defend that acquisition, Comcast argued that it would not foreclose its competitors from popular NBC programming because it would have to share the spoils with other operators—primarily with none other than TWC. The proposed merger would allow Comcast to pocket TWC's profits, too, and create the incentive that Comcast itself said it lacked without controlling TWC.

This is not the first time that "big cable" has tried to stifle budding competition. When two cable operators, AT&T and MediaOne, sought to merge in 2000, the Justice Department required them to divest one of their two broadband access businesses. When the Primestar consortium of cable operators sought to control spectrum and orbital slots that were necessary for what was then new competition from direct broadcast satellites ("DBS"), the Justice Department sued to stop them. Of course, such behavior is not confined to the video industry. In fact, such anti-competitive acts are almost as old as the competition laws themselves. It took the Supreme Court to stop the dominant shipping lines from jointly financing "fighting ships" to kill off upstarts in the early 1900s. In order to protect consumers and preserve competition, it is imperative that the Commission demonstrate the same resolve here.

II. STANDARD OF REVIEW

Pursuant to Section 310(d) of the Communications Act ("the Act"), the Commission must determine whether the proposed transaction will serve "the public interest, convenience, and necessity."[6] This requires an evaluation of whether the transaction could result in public interest harms by substantially frustrating or impairing the objectives or implementation of the Act or related statutes, as well as an assessment of whether the transaction complies with applicable laws and regulations.[7]

---

[6] 47 U.S.C. § 310(d); *see also* Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, *Memorandum Opinion and Order*, MB Docket No. 10-56, 26 FCC Rcd. 4238, 4247 ¶ 22 (2011) ("*Comcast-NBCU Order*").

[7] *See* Applications for Consent to the Transfer of Control of Licenses, XM Satellite Radio Holdings Inc., Transferor, to Sirius Satellite Radio Inc., Transferee, *Memorandum Opinion and Order and Report and Order*, MB Docket No. 07-57, 23 FCC Rcd. 12348, 12363 ¶ 30 (2008) ("*Sirius-XM Order*"); News Corp. and DIRECTV Group, Inc., Transferors, and Liberty Media Corp., Transferee, for Authority to Transfer Control, MB Docket No. 07-18, *Memorandum Opinion and Order*, 23 FCC Rcd. 3265, 3276-77 ¶ 22 (2008) ("*Liberty Media-DIRECTV Order*"); SBC Commc'ns Inc. and AT&T Corp. Applications for Approval of Transfer of

There are three essential aspects of the Commission's standard of review relevant to this transaction: *First*, the Commission must satisfy itself that the transaction passes muster both under antitrust principles and the Commission's own broader, public interest mandate. *Second*, the Applicants must prove that the transaction will serve the public interest, convenience, and necessity. *Third*, it is not enough for the Applicants to prove that the transaction will not be harmful to competition; rather, they must prove that it would benefit competition.

A. Antitrust Principles and the Commission's Broader Public Interest Analysis

The Commission's public interest determination encompasses the "broad aims of the Communications Act,"[8] which include a "deeply rooted preference for preserving and enhancing competition in relevant markets, accelerating private-sector deployment of advanced services, [and] ensuring a diversity of information sources and services to the public."[9] As part of this comprehensive assessment, the Commission takes a close look at the proposed transaction's effect on competition. The Commission's analysis is informed by traditional antitrust principles, but not limited by them.[10] Those principles are in turn based on the Clayton Act's prohibition on

---

Control, *Memorandum Opinion and Order*, WC Docket No. 05-65, 20 FCC Rcd. 18290, 18300 ¶ 16 (2005) ("*SBC-AT&T Order*").

[8] *Comcast-NBCU Order*, 26 FCC Rcd. at 4248 ¶ 23; Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from MediaOne Group, Inc., Transferor, to AT&T Corp., Transferee, *Memorandum and Order*, CS Docket No. 99-251, 15 FCC Rcd. 9816, 9821 (2000) ("*AT&T-MediaOne Order*").

[9] *Comcast-NBCU Order*, 26 FCC Rcd. at 4248 ¶ 23.

[10] *See Comcast-NBCU Order*, 26 FCC Rcd. at 4248 ¶ 24; *see also* Jon Sallet, *FCC Transaction Review: Competition and the Public Interest*, FCC Blog (Aug. 12, 2014), *available at* http://www.fcc.gov/blog/fcc-transaction-review-competition-and-public-interest ("[T]he FCC's actions should be informed by competition principles[,] . . . [b]ut, the 'public interest' standard is not limited to purely economic outcomes.") ("Sallet Blog"); *see also Sirius-XM Order*, 23 FCC Rcd. at 12365 ¶ 32; *Liberty Media-DIRECTV Order*, 23 FCC Rcd. at 3278 ¶ 24; Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corp. for Consent to Transfer Control of Licenses and Authorizations, *Memorandum Opinion and Order*, WT Docket No. 04-323, 19 FCC Rcd. 21522, 21544-45 ¶ 42; Application of GTE Corp., Transferor, and Bell Atlantic Corp.,

transactions that substantially lessen competition or tend to create a monopoly in any line of commerce,[11] as well as the Federal Trade Commission ("FTC") Act's provision directing the FTC to stop anti-competitive practices in their incipiency.[12] The Horizontal Merger Guidelines issued jointly by the Justice Department and the FTC build upon those rules. The antitrust agencies must "interdict competitive problems in their incipiency" by identifying and preventing mergers that are likely to result in highly concentrated markets.[13] Where a merger is substantially likely to result in a significant reduction in the number of competitors and increase in market concentration, the Horizontal Merger Guidelines require applicants to demonstrate that "extraordinarily great cognizable efficiencies" exist to rebut the agency's presumption that the merger will enhance market power.[14] The antitrust agencies are not required to define potential

---

Transferee, for Consent to Transfer Control of Domestic and International Authorizations and Application to Transfer Control of a Submarine Landing License, *Memorandum Opinion and Order*, CC Docket No. 98-184, 15 FCC Rcd. 14032, 14046 ¶ 23 (2000) ("*Bell Atlantic-GTE Order*").

[11] *See* 15 U.S.C. § 18.

[12] *See id*. at § 45 ("The Commission is hereby empowered and directed to prevent [parties] . . . from using unfair methods of competition in or affecting commerce and unfair or deceptive acts or practices in or affecting commerce."); *see also F.T.C. v. Brown Shoe Co.*, 384 U.S. 316, 321-22 (1966) (*citing F.T.C. v. Motion Picture Advertising Service Co.*, 344 U.S. 392, 393-94 (1953) ("It is also clear that the Federal Trade Commission Act was designed to supplement and bolster the Sherman Act and the Clayton Act to stop in their incipiency acts and practices which, when full blown, would violate those Acts, as well as to condemn as 'unfair methods of competition' existing violations of them.")).

[13] *Horizontal Merger Guidelines*, U.S. Department of Justice and the Federal Trade Commission, § 1, p.1 (2010), *available at* http://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf ("*Horizontal Merger Guidelines*").

[14] *Id.* at § 10, p.30; *see also F.T.C. v. H.J. Heinz Co.*, 246 F.3d 708, 720-21 (D.C. Cir. 2001) ("[H]igh market concentration levels . . . require, in rebuttal, proof of extraordinary efficiencies . . . . Moreover, given the high concentration levels, the court must undertake a rigorous analysis of the kinds of efficiencies being urged by the parties in order to ensure that those 'efficiencies' represent more than mere speculation and promises about post-merger behavior.").

anti-competitive effects with certainty in order to challenge a merger as unlawful.[15] Likewise, the Non-Horizontal Merger Guidelines direct the Justice Department to scrutinize closely those vertical mergers that could decrease the number of other similarly situated firms, and increase market concentration, market share, and the difficulty of market entry.[16] In particular, the Justice Department should challenge vertical mergers that may allow the merging firms to arbitrarily inflate the prices of internal transactions, pass along those costs to consumers, and effectively preempt adjacent markets.[17]

Just as important, the Commission's public interest standard "is not limited to purely economic outcomes. It necessarily encompasses the 'broad aims of the Communications Act,' which include, among other things, a deeply rooted preference for preserving and enhancing competition in relevant markets, accelerating private-sector deployment of advanced services, [and] ensuring a diversity of information sources and services to the public."[18] On the competition front, the Commission must "be convinced that [a transaction] will enhance

[15] *See Horizontal Merger Guidelines* at § 1, p.1.

[16] *See Non-Horizontal Merger Guidelines*, U.S. Department of Justice, §§ 4 - 4.2, pp.23-24 (1984), *available at* http://www.justice.gov/atr/public/guidelines/2614.pdf.

[17] *Id.* at § 4.23, p.30 (characterizing acquisitions by a regulated utility of a supplier of its fixed or variable inputs as creating "substantial opportunities for . . . abuses.").

[18] Sallet Blog (*citing Sirius-XM Order*, 23 FCC Rcd. at 12364 ¶ 31); *see also Comcast-NBCU Order*, 26 FCC Rcd. at 4248 ¶ 24; *Liberty Media-DIRECTV Order*, 23 FCC Rcd. at 3277-78 ¶ 23; *Bell Atlantic-GTE Order*, 15 FCC Rcd. at 14046 ¶ 23; Application for Consent to Transfer of Control of Licenses from Comcast Corporation and AT&T Corp., Transferors, to AT&T Comcast Corporation, Transferee, *Memorandum Opinion and Order*, MB Docket No. 02-70, 17 FCC Rcd. 23246, 23256 ¶ 28 (2002) ("*Comcast-AT&T Order*"); AT&T Corp., British Telecommunications, plc, VLT Co. L.L.C., Violet License Co. LLC, and TNV [Bahamas] Limited Applications for Grant of Section 214 Authority, Modification of Authorizations and Assignment of Licenses in Connections with the Proposed Joint Venture Between AT&T Corp. and British Telecommunications, plc, *Memorandum Opinion and Order*, IB Docket No. 98-212, 14 FCC Rcd. 19140, 19147-48 ¶ 15 (1999) ("*AT&T Corp.-British Telecom Order*").

competition" in order to find that a merger is in the public interest.[19] Specifically, the Commission should determine "whether a transaction will enhance, rather than merely preserve, existing competition,"[20] and whether the merger will accelerate the decline of market power by dominant firms in relevant communications markets.[21]

B. Burden of Persuasion and Affirmative Finding of Competitive Benefits

The Applicants bear the burden of proving, by a preponderance of the evidence, that the proposed transaction serves the public interest[22] by demonstrating that the competitive harms that could result from the proposed transaction are outweighed by the claimed benefits.[23] Further, those benefits must be: 1) transaction specific—likely to occur as a result of the transaction but unlikely to be realized by other practical means having fewer anti-competitive effects;[24] 2)

---

[19] Applications of Ameritech Corp., Transferor, and SBC Communications Inc., Transferee, for Consent to Transfer of Control of Corporations Holding Commission Licenses and Lines, *Memorandum Opinion and Order*, CC Docket No. 98-141, 14 FCC Rcd. 14712, 14738 ¶ 49 (1999) (emphasis added) ("*Ameritech-SBC Order*") (*citing* Applications of NYNEX Corporation, Transferor, and Bell Atlantic Corporation, Transferee, for Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries, *Memorandum Opinion and Order*, 12 FCC Rcd. 19985, 19987 ¶ 2 (1997) ("*Bell Atlantic-NYNEX Order*")).

[20] *See Liberty Media-DIRECTV Order*, 23 FCC Rcd at 3278 ¶ 25*; Bell Atlantic-GTE Order*, 15 FCC Rcd. at 14047 ¶ 23*; AT&T Corp.-British Telecom. Order*, 14 FCC Rcd. at 19147-48 ¶ 15*; Comcast-AT&T Order*, 17 FCC Rcd. at 23256 ¶ 28 (emphasis added).

[21] *AT&T-MediaOne Order*, 15 FCC Rcd. at 9821 ¶ 10 (emphasis added); *see also Bell Atlantic-NYNEX Order*, 12 FCC Rcd. at 20035-36 ¶ 95.

[22] *See Comcast-NBCU Order*, 26 FCC Rcd. at 4247 ¶ 22 (*citing Sirius-XM Order*, 23 FCC Rcd. at 12364, ¶ 30; *Liberty Media-DIRECTV Order*, 23 FCC Rcd. at 3277 ¶ 22).

[23] *See* Applications of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations, *Order*, WT Docket No. 11-65, 26 FCC Rcd. 16184, 16190 ¶ 5 (2011) ("*AT&T-T-Mobile Order*").

[24] *See AT&T-T-Mobile Order*, 26 FCC Rcd. at 16247-48 ¶¶ 124-28 ("Efficiencies that can be achieved through means less harmful to competition than the proposed merger . . . cannot be considered to be true pro-competitive benefits of the merger.").

verifiable—both in likelihood and magnitude;[25] and 3) for the benefit of consumers, and not solely for the benefit of the company.[26]

The Commission calculates the magnitude of the claimed benefits and the net cost of achieving them, and then employs a "sliding scale approach," under which the Applicants' demonstration of benefits must reveal a higher degree of magnitude and likelihood than the Commission would otherwise demand where, as here, the potential harms are both substantial and likely.[27] If the Commission is unable to find that the alleged benefits do, in fact, outweigh the likely harms, or if there remain substantial and material questions of fact outstanding, the Commission must designate the application for a hearing.[28]

Here, the public interest benefits the Applicants claim are unlikely and speculative. Further, the claimed benefits do not come close to outweighing the anti-competitive effects of the transaction, and the serious damage that will be inflicted on consumers if the merger is approved. The cost of "getting it wrong" is immense. If the Commission approves the merger

[25] *See Comcast-NBCU Order*, 26 FCC Rcd. at 4330-31 ¶ 226 ("The Applicants . . . are required to provide sufficient supporting evidence to permit us to verify the likelihood and magnitude of each claimed benefit. Benefits expected to occur only in the distant future are inherently more speculative than more immediate benefits."); *see also Liberty Media-DIRECTV Order*, 23 FCC Rcd. at 3330-31 ¶ 141.

[26] *See Comcast-NBCU Order*, 26 FCC Rcd. at 4331 ¶ 226; *see also* Applications of Western Wireless Corp. and ALLTEL Corp. for Consent to Transfer Control of Licenses and Authorizations, *Memorandum Opinion and Order*, WT Docket No. 05-50, 20 FCC Rcd. 13053, 13100 ¶ 132 (2005).

[27] *See Comcast-NBCU Order*, 26 FCC Rcd. at 4331 ¶ 227; *AT&T-T-Mobile Order*, 26 FCC Rcd. at 16248 ¶ 127 and FN 362 (*citing Horizontal Merger Guidelines* § 10) ("[c]ourts generally have found proof of efficiencies to be inadequate to rebut a finding of likely competitive harm."); *see also Liberty Media-DIRECTV Order*, 23 FCC Rcd. at 3331 ¶ 141; *SBC-Ameritech Order*, 14 FCC Rcd. at 14825 ¶ 256.

[28] *See* 47 U.S.C. § 309(e); *see also Citizens for Jazz on WRVR, Inc. v. FCC*, 775 F.2d 392, 394 (D.C. Cir. 1985) ("[W]hether or not an evidentiary hearing is held, the Commission must make the ultimate determination of whether the facts establish that the 'public interest, convenience, and necessity will be served by the granting [of the application].'").

under a set of conditions purportedly designed to alleviate the harms, and those conditions fail to work (which DISH strongly believes would be the case), competition and consumers would be irreparably and permanently harmed. The risks are simply too great here, and the *only* outcome that will serve the public interest is to deny the merger or designate it for hearing.

III. SINCE COMCAST'S LAST MARKET-SHAPING MERGER, ONLINE VIDEO HAS BECOME CENTRAL TO THE OVERALL VIDEO MARKET

Since Comcast acquired NBCU nearly four years ago, the online video marketplace has expanded dramatically. To a greater extent, online video provides a robust and compelling complement to traditional pay-TV service. DISH has significantly expanded its own online video features with a suite of different broadband-powered technologies, and hopes to be in a position to continue these investments. DISH is not alone in believing that in the coming years, OTT video will become even more important as consumers expand their viewing habits beyond traditional TV platforms, and DISH is making investments to meet these changing consumer preferences.

DISH's initiatives track a broader industry trend. MVPDs increasingly offer their own online and on-demand features at the same time that companies like Netflix, Amazon, and others continue to develop compelling libraries of content for streaming and on-demand delivery. As discussed in Sections V and VI below, the proposed merger threatens the continued success of online video because the combined Comcast/TWC will have dramatically increased incentives to leverage its combined footprint to thwart this burgeoning market in an effort to protect its own competing video services.

A. DISH Has Invested Heavily in Consumer-Friendly, Broadband-Powered Video Products That Are Complementary to Its Satellite TV Packages and Crucial to Its Ability to Compete

1. DISH's Traditional Satellite TV Service is Complemented by Broadband-Powered Services in Order to Remain Competitive

DISH's satellite-TV service enjoys a long history of success in the MVPD market, and in recent years, DISH has expanded its offerings to include several types of complementary online and on-demand video features. DISH views these online video features as a critical component of its competitive MVPD service.[29] *All of these features, however, rely on a broadband Internet connection of sufficient speed and quality.*[30] The most advanced digital set-top boxes ("STBs") deployed by DISH now include a separate input for broadband.[31] In general, a subscriber must acquire broadband Internet access service from a third-party provider, such as Comcast or TWC, and connect that broadband wire into a port in the back of the STB.[32]

The broadband connection to the STB is an integral aspect of DISH's ability to compete in the pay-TV business today, not simply an additional feature.[33] Cable enables two-way communications by storing content on servers closer to the customer's home and splitting nodes within a neighborhood to facilitate on-demand and other interactive services.[34] In contrast, satellite's point-to-multipoint architecture and lack of a return path necessitate a second

[29] *See* Declaration of Roger J. Lynch, Executive Vice-President, Advanced Technologies and International Group for DISH, ¶ 6 ("Lynch Declaration") (attached hereto as Exhibit A).

[30] *Id.* ¶¶ 6-7.

[31] *Id.* ¶ 6.

[32] *Id.*

[33] *Id.* ¶ 7.

[34] *Id.*

connection to the STB through broadband in order to maintain the competitiveness of the DISH service.[35]

DISH's newest, state-of-the-art STB, the Hopper (as well as certain previous generations of DISH STBs) have online features that do not work without a broadband connection. Using integrated technology called "Sling," the Hopper provides a DISH subscriber with the ability to view live or recorded programming remotely on a personal computer or wireless handheld device.[36] In order for the customer to view programming remotely, the customer must have a broadband connection in the home that enables the Hopper with Sling STB to send the programming over the Internet to a remote device.[37]

The Hopper and other STBs in DISH's equipment lineup also offer Internet-delivered Video-on-Demand ("VOD"). To deliver VOD (such as television shows or movies available at any time of the customer's choosing) to the STB, DISH cannot rely solely on its satellite architecture, because there would not be enough bandwidth on the satellite beam to carry all the necessary data to serve 14 million subscribers' individual programming choices.[38] There also is not enough capacity on each individual STB to store all the movies and television shows that any given customer might want to select.[39] DISH therefore stores VOD titles on servers located throughout the U.S. and delivers the programs to the customer's STB through a broadband connection.[40] Thus, a DISH subscriber might be watching live video programming from a satellite and then select an on-demand movie or television show, which arrives to the STB

[35] *Id.*

[36] *Id.*

[37] *Id.*

[38] *Id.* ¶ 11.

[39] *Id.*

[40] *Id.*

through the broadband connection. Once again, this home broadband connection would typically be provided by a cable broadband provider such as Comcast or TWC. DISH subscribers are watching broadband-enabled VOD programming at a rapidly increasing rate, with a 100 percent increase in the 12-month period ending May 2014.[41]

DISH offers these broadband-powered online and VOD services to maintain the competitiveness of its service, reduce churn, and discourage "cord shaving" or "cord cutting"—consumers reducing their use of MVPD services or leaving them altogether.[42] Simply put, the broadband-powered elements of DISH's service ensure that it can compete more effectively in the pay-TV industry since DISH's competitors, including Comcast and TWC, all offer similar online services.[43]

Without the broadband-powered features of DISH's offerings, DISH's service would fail to meet consumers' desire for online video and fall behind cable competitors that are able to use their own infrastructure to address this need (*i.e.*, providers that use their own connection to the STB to deliver both traditional video and broadband connectivity).[44] The importance of broadband-powered functionality is necessary today and will only become more critical in the future in order for DISH to remain competitive in the pay-TV and online video industries.

2. DISH Offers an Entirely Over-the-Top Foreign-Language Programming Package That Relies on Broadband

DISH today offers a stand-alone OTT service for foreign-language consumers, called DISH World, which is growing at a significantly faster rate than the foreign-language packages

[41] *Id.* ¶ 16.

[42] *Id.* ¶ 12.

[43] *Id.*

[44] *Id.* ¶¶ 13-14.

on DISH's satellite TV service.[45] DISH World is a purely OTT service, meaning it requires a separately provisioned broadband connection.[46] Consumers may purchase a DISH World subscription without a DISH satellite TV service subscription.[47] The vast majority of DISH World subscribers view the service on a television screen using a Roku box, an Internet-connected TV, or another similar device, not a computer or handheld device.[48] DISH World subscribers spend an average of five and a half hours per day watching the service.[49] A comparison of the growth rate of DISH's foreign-language satellite subscribership versus DISH World's subscribership illustrate how OTT has become a viable means of delivering full-form video programming: DISH World represents approximately three-quarters of all new foreign-language subscriber additions at the company.[50] DISH's satellite-TV, foreign-language subscribership, by contrast, is remaining relatively level.[51]

Offering an OTT video service also permits DISH to increase its potential subscriber base. A typical pay-TV subscription requires a two-year contract at the same residence; the ability to pass a credit check; the ability to take time off work to wait for an installer to visit the home; and a lease or purchase of an STB.[52] DISH World, on the other hand, is immediately available on any Internet-enabled device as soon as the subscriber signs up and pays for the first

[45] *Id.* ¶ 20.
[46] *Id.* ¶ 21.
[47] *Id.*
[48] *Id.*
[49] *Id.*
[50] *Id.* ¶ 22.
[51] *Id.*
[52] *Id.* ¶ 23.

month of service.[53] Thus, DISH World has helped to broaden the base for DISH subscribership by offering OTT video in lieu of traditional satellite-TV programming.[54]

3. DISH Plans to Launch a New Domestic OTT Video Service

DISH also plans to launch, by the end of 2014, a new, domestic, OTT, live streaming video service that will present an alternative to traditional pay-TV subscriptions. This new OTT service will run entirely over separately provisioned high-speed broadband connections, with no satellite dish required.

At least initially, DISH will target its new OTT service to early technology adopters in the 18-34 age demographic.[55] Unlike traditional pay-TV services, it is expected that DISH's new OTT service will not require a credit check or contract—instead, consumers will be able to access the product on a pay-as-you go basis, making it ideally suited for those who do not have the means or desire to commit to a multi-year contract for pay TV.[56] Like other OTT services, viewers will be able to access the DISH OTT product through any Internet-connected device, including a tablet, computer, or smart TV.

The DISH OTT product will offer fewer channels than a traditional pay-TV package.[57] So far, DISH has announced distribution agreements for several channels owned by Disney and A+E Networks as part of this new OTT service.[58] The Disney distribution agreement will, among other things, allow DISH to distribute Disney's linear and VOD programming, including

---

[53] *Id.*

[54] *Id.*

[55] *Id.* ¶ 27.

[56] *Id.*

[57] *Id.* ¶ 24.

[58] *Id.* ¶¶ 24-26.

ESPN, ABC and the Disney Channel, via its OTT service.[59] This agreement marked the first time that any major content company granted a pay-TV partner such online video distribution rights.[60] The subsequently negotiated deal with A+E Networks will allow DISH to offer OTT-only access to certain A+E channels.[61] The new DISH OTT service, however, will be entirely dependent on subscribers' ability to access the Internet through a high-speed broadband service provided by third party providers, such as Comcast and TWC.[62]

B. As Predicted When Comcast Acquired NBCUniversal, the Online Video Market Has Become a Significant Force in the Overall Video Market

In approving Comcast's acquisition of NBCU in 2011, the Commission recognized the growing role of the Internet in the delivery of video programming. At the time, the Commission observed that "[a]lthough the amount of [online] viewing is still relatively small -- one estimate is that it makes up nine percent of all viewing -- it is clearly increasing."[63] The Commission's predictions about the ever-increasing role of the Internet in the delivery of video content proved correct: as of October 2013, 48 percent of all U.S. adults and 67 percent of those under the age of 35 watched streaming or downloaded video during a typical week, up from 45 percent and 64 percent, respectively, just six months earlier.[64] Today, consumers can access Internet-delivered video from their pay-TV providers, or take advantage of standalone streaming services. As a

[59] *Id.* ¶ 25.

[60] *Id*.

[61] *Id.* ¶ 26.

[62] *Id.* ¶ 27.

[63] *Comcast-NBCU Order* 26 FCC Rcd. at 4264 ¶ 65.

[64] *See Cross-Device Video Analysis: Engaging Consumers in a Multi-Screen World*, Experian Marketing Services, p.2 (2013), *available at* http://www.experian.com/assets/marketing-services/brochures/cross-device-video-analysis-2014.pdf ("*Experian Cross-Device Report*"). *See also* Lynch Declaration ¶¶ 29-31 ("[T]he general consensus is that OTT is emerging as the video platform of choice for consumers, particularly people under 30 years of age.").

result, now more than ever, a vibrant, competitive video market relies upon high-speed, high-capacity broadband.

1. Many MVPDs Have Chosen to Add Complementary Online Video Products to Their Lineups

DISH is not the only MVPD to recognize the importance of online video features as a complement to the traditional lineup of live, linear channels. As illustrated below in Figure 1, every major MVPD offers some kind of on-demand and/or broadband-powered video product as a complement to its traditional, linear package of channels:

Figure 1: Survey of Online Video Services Offered by Pay-TV Companies

Pay-TV Company	Online Video Service	Vertically-Integrated Broadband Providers
AT&T U-verse	Mobile TV & U-verse App; U-verse Screen Pack	✓
Cablevision	Optimum TV to GO	✓
Charter	Charter On Demand; Charter TV App	✓
Comcast	Xfinity.com/TV & Xfinity TV Go App; Xfinity Streampix	✓
DIRECTV	DIRECTV Everywhere	X
DISH	DISH Anywhere; DISH World	X
Time Warner	TWC TV	✓
Verizon	FiOS TV Online; Redbox Instant	✓

2. Standalone Online Streaming Services Have Emerged as Competitive Players in the Video Marketplace

In the years since the Commission approved the Comcast/NBCU transaction, standalone streaming video services have increased in popularity and are now widely utilized for content viewing. OTT video providers—including Netflix, Amazon, and Hulu—today serve as a

complement to traditional MVPD subscriptions. Aggressive content licensing deals, original programming, and rising subscription numbers, among other factors, demonstrate that these services are important players in the video marketplace. Indeed, more than 50 percent of U.S. broadband households now use paid OTT video services.[65]

Netflix is a prime example of the growing popularity of OTT services. In July 2014, Netflix reported over 50 million subscribers worldwide, including 36 million in the United States.[66] Netflix recently reached distribution deals with Turner Broadcasting System, Warner Brothers, and the Weinstein Company.[67] And, this year alone, Netflix garnered 31 Emmy nominations for its original shows, including *Orange Is the New Black* and *House of Cards*,[68] a sign of the company's growing investment in original content.

[65] *See More Than 50% of US Households Use Paid OTT Video Services*, Parks Associates (Mar. 21, 2014), *available at* http://www.parksassociates.com/blog/article/more-than-50--of-us-households-use-paid-ott-video-services.

[66] *See* James O'Toole, *Netflix Passes 50 Million Subscribers*, CNN (Jul. 22, 2014), *available at* http://money.cnn.com/2014/07/21/technology/netflix-subscribers/.

[67] *See e.g.* John Jannarone and Shalini Ramachadran, *Netflix Signs Streaming Deal with Time Warner*, The Wall Street Journal (Jan. 7, 2013), *available at* http://online.wsj.com/news/articles/SB10001424127887323706704578228064114490692; *Netflix's New Content Deal*, Zacks Equity Research (Jan. 16, 2013), *available at* http://www.zacks.com/stock/news/90581/Netflixs-New-Content-Deal; Amol Sharma and Ben Fritz, *Netflix Expands content Deal with Weinstein Co.*, The Wall Street Journal (Aug. 20, 2013), *available at* http://online.wsj.com/news/articles/SB10001424127887323608504579024630454686004.

[68] *See* Cecilia Kang, *Netflix Has Hits, Emmys and Subscribers. But Can It Survive Its Fight With Cable?*, The Washington Post (Jul. 10, 2014), *available at* http://www.washingtonpost.com/business/technology/netflix-has-hits-emmys-and-subscribers-but-can-it-survive-its-fight-with-cable/2014/07/10/73638bba-02c3-11e4-8572-4b1b969b6322_story.html.

But, Netflix is far from alone. By some estimates, Amazon's Instant Video service has 10 million users, with projections that this number will grow to 25 million subscribers by 2017.[69] As of March 2014, Amazon's streaming video traffic volumes reportedly increased by 94 percent over the past year.[70] Amazon also has begun to aggressively compete in the content-licensing arena. Amazon has recently struck licensing deals with A+E Networks, PBS, NBCUniversal, Scripps, CBS, and HBO—and has begun to develop a variety of original programming, including *Alpha House*, *The After*, *Bosh*, and *Wishenpoof!*.[71]

Hulu Plus also offers a subscription streaming video service, with 5 million subscribers reported as of December 2013.[72] The company boasted a 40 percent year-over-year increase in revenue in 2013. The service provides a catalog of 86,000 episodes from 2,900 TV series.[73] In a sign of projected growth, Hulu plans to double its number of original programs in the coming years to better compete directly with Netflix and Amazon.[74]

---

[69] *See* Chris Katje, *Amazon vs. Netflix: Battle to Become Streaming King Heats Up,* Variety (Aug. 2, 2013), *available at* http://variety.com/2013/biz/news/amazon-turning-svod-space-into-a-two-company-race-1200571585/.

[70] *See* Mark Fisher, *Amazon Rising – Amazon's Streaming Video Surpasses Hulu and Apple*, QWILT (Apr. 4, 2014), *available at* http://qwilt.com/amazon-rising-amazons-streaming-video-surpasses-hulu-and-apple/.

[71] *See* Justin Bachman, *Amazon Picks Six Original Series, Dumps Two*, Bloomberg Businessweek (Mar. 31, 2014), *available at* http://www.businessweek.com/articles/2014-03-31/amazon-picks-six-original-series-dumps-two.

[72] *See* Lucas Shaw, *Hulu Passes $1B in Revenue, Has 5M Hulu Plus Subscribers*, The Wrap (Dec. 18, 2013), *available at* http://www.thewrap.com/hulu-passes-1b-revenue-5m-hulu-plus-subscribers/ ("*Hulu Passes $1B in Revenue*").

[73] *See* Maggie McGrath, *Amazon and Hulu Could Slow Netflix Growth in 2014, Morgan Stanley Says*, Forbes (Jan.7, 2014), *available at* http://www.forbes.com/sites/maggiemcgrath/2014/01/07/amazon-and-hulu-could-slow-netflix-growth-in-2014-morgan-stanley-says/.

[74] *See Hulu Passes $1B in Revenue.*

The widespread adoption of these OTT services is only predicted to increase in the future. The percentage of the overall entertainment market attributable to OTT content will more than double in the coming years, from 7 percent in 2013 to 16 percent by 2017.[75] By 2017, OTT services "will most likely bring in $17.44 billion as other streaming and Internet-to-TV services become more prevalent."[76]

Consumers can choose from a variety of standalone hardware solutions to access OTT content. For example, Roku provides STBs that enable consumers to access both live and on-demand OTT content.[77] Roku offers more than 1,000 channels, including hundreds of free channels that provide, among other genres, religious, sports, family, and international programming.[78] Roku also enables access to subscription OTT services like Hulu Plus, Netflix, and Amazon Instant Video.[79] The breadth and variety of channels and services available on Roku allow viewers to access niche programming that may not have broad enough appeal to achieve distribution on traditional pay-TV platforms. Roku players connect directly to a consumer's television and rely on a user's high-speed Internet connection to deliver programming.[80] The average Roku user streams 13 hours of content per week, with 25 percent

[75] *See* Emily Wilson, *PwC Prediction: OTT Market Growth Will Double in Next Four Years,* Magnet Media Labs (Jul. 3, 2013), *available at* http://www.magnetmediafilms.com/blog/pwc-prediction-ott-market-growth-will-double-in-next-four-years/#.U8aIj7qJIZo.

[76] *Id.*

[77] *See* Lynch Declaration ¶ 32. *See also* Julian Meeks, *The Evolution of Roku 1 to Roku 3*, Street Wise Tech (Aug. 3, 2014), *available at* http://www.streetwisetech.com/2014/08/evolution-roku-1-roku-3/ ("*Roku Evolution*").

[78] *See* Lynch Declaration ¶ 32

[79] *Id*. *See also Roku Evolution*.

[80] *See* Lynch Declaration ¶ 32. *See also Meet Roku*, Roku (accessed Aug. 20, 2014), *available at* https://www.roku.com/meet-roku.

of Roku users streaming 35 hours per week.[81] Roku has sold over 8 million Roku players to consumers.[82]

The Apple TV device also has become a widely utilized option for OTT content viewing. To date, Apple has sold more than 20 million Apple TVs.[83] The device enables viewers to stream content from the iTunes Store to his or her television set.[84] Netflix, Hulu Plus, HBO Go, MLB.TV, and other online media services are also available for streaming on the Apple TV device. Apple TV relies on a high-speed broadband connection to deliver programming to a consumer's television.[85]

3. Comcast and TWC Today Provide Online Video Services and VOD Services

Like DISH and other MVPDs, Comcast and TWC supplement their linear TV packages with extensive streaming VOD catalogs. Comcast is a self-proclaimed "TV Everywhere Leader" with a library that contains more than 300,000 streaming choices, including 50 live television channels available at XfinityTV.com.[86] Comcast customers can access these services through the company's X1 and successor X2 platforms, which provide "interactive TV functionality." According to the Application, these platforms offer integrated search (across TV, Xfinity On

---

[81] Lynch Declaration ¶ 32. *See also* Dan Rayburn, *Roku Has Shipped Nearly 8 Million Devices, Average User Streams 13 Hours Per Week*, Streaming Media (Feb. 25, 2014), *available at* http://blog.streamingmedia.com/2014/02/roku-shipped-nearly-8-million-devices-average-user-streams-13-hours-per-week.html.

[82] *Id.*

[83] *See* Lynch Declaration ¶ 33. *See also* Matt Swider, *Tim Cook Touts 20 Million Apple TVs Sold, Disses Amazon's HBO Deal*, Tech Radar.TVs (Apr. 23, 2014), *available at* http://www.techradar.com/us/news/television/tim-cook-touts-20-million-apple-tv-sales-when-asked-about-amazon-fire-tv-1244744.

[84] *See* Lynch Declaration ¶ 33.

[85] *Id.*

[86] *See Application* at 76-77.

Demand, and DVR), access to the Internet and apps, cross-product integration, and an X1 remote application that allows customers to use their smart phones and tables to control their TVs.[87]

In fact, Comcast CEO Mr. Brian Roberts said that he expects streaming video trends to "remake" his company in the coming years as Americans stream more and more content, noting that people increasingly watch TV where they want it, when they want it through smartphones and other Internet-enabled devices.[88] According to Mr. Roberts, the trends in content viewing illustrate "[i]t's a whole new world."[89]

TWC also is aggressively pursuing a strategy in the OTT space, albeit not as aggressively as Comcast. TWC currently offers an online TV Everywhere service as part of its MVPD subscription with 29 live television channels and 6,500 hours of streaming video content.[90] In April 2014, TWC's CEO, Rob Marcus, acknowledged the benefits of his company's TV Everywhere platform, noting that the company "had 1 million unique users access our content on ways other than a [STB] last month."[91] TWC subscribers can also access the company's content through a wide variety of devices. For example, in 2013, Roku and TWC announced that TWC would bring its authenticated cable service—TWC TV—to the Roku box.[92] This partnership enables TWC subscribers to access more than 300 channels of live television on their Roku box,

[87] *Id.* at 79.

[88] *See* Haley Sweetland Edwards, *Meet the Internet's Most Powerful Man,* Time Magazine, p.38 (Aug. 4, 2014), *available at* http://time.com/3028041/meet-the-internets-most-powerful-man.

[89] *Id.*

[90] *See Application* at 77.

[91] Sue Marek, *Cable leaders: Authentication issues, OTT Threat are Plaguing the Industry*, FierceCable (Apr. 29, 2014), *available at* http://www.fiercecable.com/node/67976/print.

[92] *See* Chris Welch, *Time Warner's New Roku App Turns Your Streaming Device into a Cable Box*, The Verge (Jan. 7, 2013), *available at* http://www.theverge.com/2013/1/7/3842556/time-warner-cable-bringing-live-tv-to-roku.

along with more than 5,000 free and subscription-based on-demand entertainment choices from nearly 100 top networks.[93]

In addition, in April 2014, TWC became the first national cable company to reach an agreement with Fanhattan's Fan TV to distribute content. Because the Fan TV device is designed to be sold to cable customers, it aims to serve as an alternative to an MVPD-provided STB. Customers who purchase a Fan TV device pay a one-time cost for the box, with no contracts or extra fees required (beyond the cost of a pay-TV and Internet service). TWC video subscribers with a Fan TV device can access TV and VOD, along with a handful of other services: Redbox Instant, Crackle, Target Ticket, and the Rhapsody streaming music service.[94] TWC Senior Vice President and General Manager of Video, Mike Angus, called Fan TV a leap forward for the cable industry: "It's really a paradigm shift from what's in the market today," he said. "It provides new ways for our customers to discover the content we have."[95]

4. Stand-Alone OTT Subscription Services Are Growing

Today, at least "63% of consumers are streaming video or using on-demand features to watch what they want, when they want, more than once a week."[96] Streaming to devices has become a popular option for consumers: 42 percent of smartphone owners watch video on their

[93] *See* Steve Shannon, *TWC TV on Roku Now Offering Live and On-Demand Entertainment*, Roku Blog (Dec. 18, 2013), *available at* http://blog.roku.com/blog/2013/12/18/twc-tv-on-roku-now-offering-live-and-on-demand-entertainment/.

[94] Todd Spangler, *Time Warner Cable Will Market Startup's Fan TV as a Great New Way to Watch TV*, Variety (Apr. 22, 2014), *available at* http://variety.com/2014/digital/news/time-warner-cable-will-market-startups-fan-tv-as-alternative-to-its-own-set-tops-1201161027/#.

[95] *Id.*

[96] *See* Kathy Crosett, *Changing TV Viewing Habits Prompt New Media Purchase Guidelines*, AD-OLOGY Audience Scan (Sept. 12, 2013), *available at* http://www.ad-ology.com/changing-tv-viewing-habits-prompt-new-media-purchase-guidelines/#.U8ATUbqJIZo.

phones during a typical week, while 42 percent of tablet owners stream video to that device.[97] Also, 34 percent of American adults live in a home with an Internet-connected television (either via a third-party device or by direct connection through the set itself), up from 25 percent in 2012.[98]

It is no surprise, then, that the number of consumers who forego a traditional pay-TV service for customized OTT offerings also continues to grow. An estimated 6.5 percent of U.S. households (7.6 million homes) today are considered "cord-cutters" (meaning they have high-speed Internet but no cable or satellite TV service), up from 4.5 percent of households (5.1 million homes) in 2010—a relative increase of 44 percent.[99] Young adults starting out on their own for the first time may never pay for TV service: 12.4 percent of households inhabited by an adult under the age of 35 (almost twice the national average) are cord-cutters. Add subscribers with either a Netflix of Hulu account into the mix, and the share of young adult households that do not pay for MVPD service jumps to 24.3 percent.[100]

The broadband connection is not only critical to providing the ability to stream content—it has become an integral part of the overall viewing experience. Today, consumers take advantage of social networking sites to supplement their video consumption: 62 percent of viewers use social networking sites and forums while watching TV on a weekly basis, with 40 percent using these services to discuss what they are currently watching on television.[101]

---

[97] *See Experian Cross-Device Report* at 4.

[98] *Id*. at 8.

[99] *Id.* at 5.

[100] *Id.*

[101] *See TV and Video: An Analysis of Evolving Consumer Habits*, ERICSSON Consumer Lab, p. 5 (Aug. 2012), *available at* http://www.ericsson.com/res/docs/2012/consumerlab/tv_video_consumerlab_report.pdf.

The rapid rise of broadband-powered online video services has been great for consumers. In many ways, we are in the Golden Age of video. But this Golden Age risks being cut short by the proposed transaction.

IV. THE APPLICANTS' DEFINITIONS OF THE RELEVANT PRODUCT AND GEOGRAPHIC MARKETS FAIL TO CAPTURE THE SERIOUS COMPETITIVE THREAT TO THE FUTURE OF VIDEO

The Applicants attempt to minimize the harmful competitive effects of their proposed merger on OTT video competition by incorrectly defining the relevant markets.

First, contrary to the Applicants' positions, broadband products like DSL and mobile are not adequate substitutes for wired, cable broadband in terms of providing adequate speed and capacity to support a full-fledged online video viewing experience. The relevant *product* market therefore excludes such services and only includes wireline broadband access services capable of consistent, actual download speeds of 25 Mbps or more.[102] Mobile broadband services should be excluded from this market regardless of the speeds they offer due to the widespread (and growing) use of monthly data caps.

Second, the Commission should reject the Applicants' argument that there is no loss of competition since Comcast and TWC serve non-overlapping territories today. This definition of the *geographic* market as exclusively local misses the impact of a highly consolidated broadband access market on nationwide OTT video competition.

A. The Relevant Product Market Includes Only Those Services Capable of Supporting the Robust Online Video Services That Consumers Demand

The Applicants assert that they face ample competition in the market for Internet access services because the universe of cable, fiber, hybrid fiber/DSL, standard DSL, and mobile

[102] On August 25, 2014, DISH will also be filing a Highly Confidential Declaration prepared by Professor David Sappington in MB Docket No. 14-57.

solutions all offer adequate substitutes for their broadband pipe. Not so. The relevant product market should include broadband that can and consistently do deliver download speeds no less than 25 Mbps—cable and fiber-to-the-premises ("FTTP") solutions such as Verizon FiOS, and fiber-to-the-node ("FTTN") and fiber-to-the-curb ("FTTC") solutions capable of delivering MVPD services. The relevant market should ***exclude*** broadband incapable of consistently delivering that download speed—other hybrid fiber/DSL products, standard DSL, and mobile wireless solutions.[103] The Applicants would control 50 percent of that (properly defined) product market.

1. Today's Households Consuming Online Video Demand Actual Download Speeds of No Less than 25 Mbps

Not all services that are labeled as "broadband" can deliver the necessary speed and capacity to give consumers the online video experience they demand. The FCC's own broadband report confirms that consumers are increasingly demanding higher speeds, and this demand can be attributed at least in part to wanting broadband that is fast enough to enjoy online video services. In its 2014 report, *Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed Broadband Performance in the U.S.*, the Commission found that "the average subscribed [broadband] speed is now 21.2 Mbps, representing an average annualized speed increase of about 36 percent from the 15.6 Mbps average of 2012."[104] The report notes that "standard definition video is currently commonly transmitted at speeds from 1 Mbps to 2 Mbps" and that "[h]igh quality video can demand faster speeds, with full HD (1080p) demanding

[103] Hereafter, when referring to "traditional" DSL, DISH is referring to standard DSL and hybrid fiber/DSL products not capable of delivering MVPD services.

[104] *2014 Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed Broadband Performance in the U.S.*, Federal Communications Commission Office of Engineering and Technology and Consumer and Governmental Affairs Bureau, p.13 (2014), *available at* http://data.fcc.gov/download/measuring-broadband-america/2014/2014-Fixed-Measuring-Broadband-America-Report.pdf ("*2014 FCC Broadband Report*").

5 Mbps or more for a single stream."[105] Given these high performance thresholds demanded by streaming video, the Commission warns that "[c]onsumers should understand the requirements of the streaming video they want to use and ensure that their chosen broadband service tier will meet those requirements, including when multiple members of a household simultaneously want to watch streaming video on separate devices."[106]

Based on its own experience offering online video, DISH can confirm that not all services labeled "broadband" are fast enough to support an adequate online video experience, particularly where a household wants to have multiple, simultaneous streaming video services. All of the broadband-enabled features that DISH offers—Hopper, DISH Anywhere, IP VOD, DISH World, and the forthcoming domestic OTT service—rely entirely on a subscriber's ability to connect to the Internet through a high-speed, high-quality broadband connection.[107] They all require a high-speed service with sustained throughput, minimal throttling, minimum jitter, and sufficient quality of service suitable for high-definition ("HD") video.[108] In DISH's experience, large amounts of throughput are required to provide a typical household with HD video through the Internet.[109] An HD video stream requires on average 5 Mbps of data throughput; a typical household could require 15 Mbps (5 Mbps x 3 TVs) for HD video alone.[110] When added to a

---

[105] *Id.* at 17.

[106] *Id*.

[107] *See* Lynch Declaration ¶ 62.

[108] *Id*.

[109] *Id.* ¶ 35.

[110] *Id.* ¶ 36. *See also U.S. Homes Add Even More TV Sets in 2010*, Neilson Newswire (Apr. 28, 2010), *available at* http://www.nielsen.com/us/en/insights/news/2010/u-s-homes-add-even-more-tv-sets-in-2010.html ("The average American home now has 2.93 TV sets per household, up from 2.86 sets per home in 2009, the largest year-over-year increase since 2006[.]"); *The U.S. Digital Consumer Report*, Nielson Reports (Feb. 10, 2014), *available at* http://www.nielsen.com/content/corporate/us/en/insights/reports/2014/the-us-digital-consumer-

typical household's other Internet and broadband usage habits, such as personal computers, Wi-Fi-enabled mobile devices, and "connected devices" (such as a home security system), another 5-10 Mbps of throughput may be required to avoid degrading the television viewing experience.[111] Thus, a typical household relying on the Internet to deliver all video therefore should optimally have no less than 25 Mbps in broadband connectivity.[112] This means that 25 Mbps would be the minimum *actual* (as opposed to advertised) experienced speed provided to the residence in order to sustain, for example, a robust OTT video product capable of supplanting today's traditional linear pay-TV service.[113]

And this is just today's data needs. As OVDs roll out better quality video, even faster speeds will be needed.[114] The new "4K" Ultra HD video standard allows a video device, such as a large television, computer monitor, tablet, or smartphone, to deliver four times as much detail as 1080p full HD (*i.e.*, 8 million pixels compared to 2 million pixels).[115] The development of the 4K standard remains quite fluid, but one thing is clear: 4K will require much greater data throughput than does today's HD television, even assuming continued advances in video compression technology.[116] Thus, the 25 Mbps bandwidth threshold could increase to 30, 50, or

---

report.html ("Americans now own four digital devices on average, and the average U.S. consumer spends 60 hours a week consuming content across devices. And a majority of U.S. households now own high-definition televisions (HDTVs), Internet-connected computers and smartphones.").

[111] *See* Lynch Declaration ¶ 36.

[112] *Id.*

[113] *Id.*

[114] *Id.*

[115] *Id.*

[116] *Id.*

100 Mbps in the foreseeable future.[117] A recent Akamai study found that, just *one* video stream at the current state-of-the-art quality (4K) "will demand downstream throughput of 15-20 megabits per second, minimally – *and as always, more is better*."[118] And a recent European Commission study of broadband speeds in Europe determined that broadband defined as "Next Generation Access" services should provide download speeds of at least 30 Mbps.[119]

2. DSL Is Not an Adequate Substitute for Cable Broadband

While DSL connections may be "broadband" as compared to telephone dial-up services, they cannot—and do not—compete with cable and fiber connections to the home for true high-speed broadband. The Commission itself has acknowledged that DSL service does not offer the broadband capability that is available through fiber or cable systems.[120] DSL providers advertise speeds that are below what would be necessary thresholds to support HD video on multiple TVs in a household, and even those speeds tend to be higher than the actual speed experienced by the

---

[117] *Id.*

[118] *Streaming Toward Television's Future: A Detailed Look at 4K Video and How Akamai is Making it a Reality,* Akamai Paper Topic, p.1 (Apr. 2014), *available at* http://www.akamai.com/html/awe/login.html?campaign_id=F-MC-23645&curl=/dl/whitepapers/streaming-toward-future-of-television-4k.pdf (emphasis added).

[119] *Broadband Coverage in Europe in 2012: Making Progress Towards the Coverage Objectives of the Digital Agenda,* European Commission, p.7 (2013), *available at* ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=3647; Christopher S. Yoo, *U.S. vs. European Broadband Deployment: What Do the Data Say?*, Center for Technology, Innovation, and Competition, University of Pennsylvania School of Law, p.1 (Jun. 2014) *available at* https://www.law.upenn.edu/live/files/3352-us-vs-european-broadband-deployment.

[120] *See* Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Fifteenth Report,* 28 FCC Rcd. 10496, 10535 ¶ 85 (2013) ("*Fifteenth Video Competition Report*"). While most households do have a choice between cable, DSL, and wireless broadband providers, only cable and fiber provide the speed consumers demand and OVD services require. Internet Access Services: Status as of June 2013, Federal Communications Commission: Industry Analysis and Technology Division, Wireline Competition Bureau, pp.9-10, 28 (Jun. 2014), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0625/DOC-327829A1.pdf ("2014 Internet Access Services Report").

consumer.[121] Consumers are quickly realizing they have no choice but to drop DSL and subscribe to a cable or fiber connection in order to get the broadband speeds they demand.[122] Indeed, the behavior of DISH World subscribers reflects cable broadband's superiority over DSL for purposes of consuming video. Among DISH World subscribers, cable broadband significantly over-indexes against DSL.[123] This suggests that when a broadband connection is used for HD video, cable clearly is the preferred broadband platform.[124]

This lack of competition from DSL is also borne out in the aggregate industry numbers. Most cable providers offer broadband at speeds that are many multiples faster than traditional DSL.[125] The Applicants themselves tout the superiority of their services to DSL: Comcast

[121] Lynch Declaration ¶ 38. For example, CenturyLink advertises a 12 Mbps/3 Mbps DSL service in Colorado, well below the 25 Mbps threshold. *Id*.

[122] Particularly because consumers increasingly depend on high-speed broadband for access to OTT products, consumers are quickly dropping low-speed DSL services that cannot meet their needs. *Fifteenth Video Competition Report* at 10498, 10689 ¶¶ 1-3, 311 (noting cable's increasing share of high-speed data households).

[123] Lynch Declaration ¶ 39.

[124] *Id.*

[125] Peter Svensson, *Phone Companies Lose Substantial Broadband Subscribers for First Time, as Cable Modems Thrive,* Bloomberg Business Week (Aug. 14, 2012), http://www.businessweek.com/ap/2012-08-13/phone-cos-dot-lose-broadband-subscribers-for-1st-time. AT&T and Verizon's traditional DSL services only achieve speeds of 7.7 Mbps/3.2 Mbps and 6.7 Mbps/3.4 Mbps, respectively. *AT&T DSL*, Speedtest.net, (accessed Aug. 20, 2014), *available at* http://www.speedtest.net/isp/att-dsl; *Verizon DSL*, Speedtest.net, (accessed Aug. 20, 2014), *available at* http://www.speedtest.net/isp/verizon-dsl.

boasts of speeds up to 15 times faster than DSL,[126] while TWC advertises download speeds of nearly 10 times faster than DSL.[127]

If consumers did not need these higher levels of service quality, they would not pay for them, and DSL would not be losing so much market share. Instead, for several years now, Comcast's residential broadband connections have been increasing at the expense of DSL. By 2012, Comcast accounted for a majority of new high-speed Internet subscribers, acquiring more than 400,000 new subscribers each quarter.[128] These additions continued apace throughout 2013. New broadband subscribers for Comcast and TWC represented nearly half of all new residential Internet subscriptions in the United States last year.[129] And for the first quarter of 2014 alone, Comcast and TWC added a combined 652,000 new broadband customers.[130] At the same time, DSL connections have steadily declined. Since 2012, DSL has lost an average of 2.5 million subscribers each quarter, despite AT&T U-verse gains that have offset the very steep declines in

[126] Comcast expects its DOCSIS 3.1 technology will offer speeds of 500 Mbps to 1 Gbps to "a coverage area far and wide." *White Paper: DSL vs. Cable High-Speed Internet*, Comcast Business, p.4, *available at* http://business.comcast.com/docs/default-source/white-papers/cb_dslvscable-hsi_whitepaper.pdf?sfvrsn=0; *Xfinity vs. the Competition: Xfinity vs. CenturyLink*, Comcast (accessed Aug. 20, 2014), *available at* http://www.comcast.com/comcast-xfinity-vs-centurylink.html.

[127] *See Internet Service Provider Plans*, Time Warner Cable (accessed Aug. 20, 2014), *available at* http://www.timewarnercable.com/en/internet/internet-service-plans.html.

[128] *See* SUSAN CRAWFORD, CAPTIVE AUDIENCE 65 (2013). Comcast's new broadband subscribers totaled nearly 1.3 million in 2013. *2.6 Million Added Broadband from Top Cable and Telephone Companies in 2013*, Leichtman Research Group, p.1 (Mar. 17, 2013), *available at* http://www.leichtmanresearch.com/press/031714release.pdf ("*Mar. 2013 Leichtman Research Group*").

[129] *See Mar. 2013 Leichtman Research Group* at 1.

[130] Claire Atkinson, *Time Warner Cable, Comcast Report Banner Results*, NYPost (Apr. 25, 2014), *available at* http://nypost.com/2014/04/25/time-warner-cable-comcast-report-banner-results/.

traditional DSL service.[131] AT&T and Verizon together lost more than 3 million traditional DSL subscribers in 2013.[132] If current trends continue, about 70 percent of all wired Internet access subscribers in America will be cable customers by the end of 2015 (as opposed to 50 percent today).[133]

Importantly, the migration of consumers from DSL to true high-speed broadband has continued to occur, despite the fact that DSL is much less expensive than cable broadband. If DSL and cable broadband were even remote substitutes for each other, a large number of consumers might be expected to stay with DSL, believing that the lower price makes up for the slower speed. But progressively larger numbers are not staying and are switching to cable instead, demonstrating the lack of substitutability between the two services. Consider the price differential: providers like Verizon and AT&T offer traditional DSL Internet packages for prices ranging from $29.99 to $34.95 per month.[134] In contrast, cable and fiber high-speed broadband

---

[131] *See, e.g.*, *Broadband Internet Penetration Deepens in the US; Cable Is King*, IHS Technology (Dec. 9, 2013), *available at* https://technology.ihs.com/468148/broadband-internet-penetration-deepens-in-us-cable-is-king; Om Malik, *The DSL Death March Continues*, Gigaom (Apr. 24, 2012), *available at* http://gigaom.com/2012/04/24/the-dsl-death-march-continues/ (reporting AT&T's loss of over 600,000 DSL subscribers in 1Q 2012); *Nearly 1.2 Million Add Broadband in the First Quarter of 2014*, Leichtman Research Group (May 20, 2014), *available at* http://www.leichtmanresearch.com/press/052014release.html (reporting DSL providers lost 638,000 subscribers in the first quarter of 2014 alone).

[132] Steve Donohue, *Comcast Dominates 2013 Broadband Subscriber Growth Rankings*, FierceCable (Mar. 17, 2014), *available at* http://www.fiercecable.com/story/comcast-dominates-2013-broadband-subscriber-growth-rankings/2014-03-17.

[133] SUSAN CRAWFORD, CAPTIVE AUDIENCE, at 65 (*citing* Robert C. Atkinson et al, *Broadband in America: Where It Is and Where It Is Going (According to Broadband Providers): An Update of the 2009 Report*, Originally Prepared for the Staff of the FCC's Omnibus Broadband Initiative, at 69 (2d ed. May 2011), *available at* http://www4.gsb.columbia.edu/null/download?exclusive=filemgr.download&file_id=738763).

[134] AT&T offers plans delivering speeds of 6 Mbps for $34.95 per month and Verizon offers various speeds between 1-3, 3-7, and 7-15 Mbps all for $29.99 per month. *DSL High Speed Internet*, AT&T (accessed Aug. 20, 2014), *available at* http://www.att.com/shop/internet/internet-service.html#fbid=0RoF33gXl3D; *High Speed DSL*

connections are *typically 40 to 100 percent more expensive*. The least expensive option for high-speed broadband from Comcast, for example, costs as much as $66.95 per month depending on the service area,[135] with TWC offering a similar package for about $59.99, depending on the market.[136] As Professor Sappington observes, these substantial price differences imply that a hypothetical monopoly supplier of 25 Mbps broadband service could profitably raise the price of its service significantly above cost for a non-transitory time period even in the presence of ubiquitous DSL service.[137] Consequently, DSL service is not in the same product market as 25 Mbps wireline broadband service.[138]

The reason for DSL's inability to effectively compete with cable broadband is simple: physics. Unlike cable and fiber technologies, the quality and speed of DSL is highly dependent on the length of the copper wire or "loop" from the residence to the service provider's terminating electronic equipment, or "hub."[139] In order to achieve higher speeds (or throughput) of data, engineers transmit data at the highest frequencies DSL can handle. But at these higher

---

Internet Plans, Verizon (accessed Aug. 20, 2014), *available at* http://www.verizon.com/home/highspeedinternet/high-speed-internet-plans/

[135] The "Performance" plan offers download speeds up to 25 Mbps, with 10 GB of storage, and ranges in price from $42.95-$66.95 depending on the service area and other services to which the customer subscribes. *Shop: Products, Faster Internet, Performance, Details and Restrictions*, Comcast (accessed Aug. 20, 2014), *available at* http://www.comcast.com/internet-service.html.

[136] The "Extreme" plan matches Xfinity's data storage offering of 10 GB, and offers advertised speeds of up to 30 Mbps. *Internet Plans*, Time Warner Cable (accessed Aug. 1, 2014), *available at* http://www.cabletv.com/time-warner/internet.

[137] *See* Professor David Sappington, The Anticompetitive Effects of the Proposed Merger of Comcast and Time Warner Cable, ¶ 18 ("Sappington Declaration") (attached hereto as Exhibit B).

[138] *Id.* ¶ 19.

[139] *2014 Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed Broadband Performance in the U.S.*, Federal Communications Commission: Office of Engineering and Technology and Consumer and Governmental Affairs Bureau, p.14 (2014), *available at* http://data.fcc.gov/download/measuring-broadband-america/2014/2014-Fixed-Measuring-Broadband-America-Report.pdf ("*2014 FCC Broadband Report*").

frequencies the signal weakens; this effect is directly related to the distance from the central hub that the signal must travel.[140] In other words, in certain configurations, DSL may be able to achieve relatively high speeds, but it can only deliver those speeds to a minority of households. Not surprisingly, the Commission recently reported that only 0.3 percent of DSL connections offer speeds of 25 Mbps or higher.[141]

Even if the industry were to transition wholesale to next generation DSL products in hopes of offering a true substitute for cable broadband, substantial capital investments by DSL providers would be required to shorten the copper loops.[142] The Commission itself has noted that DSL speeds vary widely, and that "the reason for this may be that DSL, unlike cable and fiber technologies, is strongly dependent upon the length of the copper wire (or 'loop') from the residence to the service provider's terminating electronic equipment, such that obtaining higher data speeds would require companies to make significant capital investments across a market area to shorten the copper loops."[143] Companies like Comcast only have to replace electronics to

---

[140] Lynch Declaration ¶ 39.

[141] *Susan Crawford: Responding to Distorted Op-Eds Published by the New York Times*, Roosevelt Institute (accessed Aug. 20, 2014), *available at* http://rooseveltinstitute.org/susan-crawford-responding-distorted-op-eds-published-new-york-times ("*Roosevelt Crawford*"). Only 8 percent of DSL connections in the United States transmit at a speed of even 10 megabits per second—70 percent of cable modem service travels that fast. Edward Wyatt, *Internet Choice Will Be Crucial Battlefield in Big Cable Merger*, The New York Times (Apr. 7, 2014), *available at* http://www.nytimes.com/2014/04/08/business/in-scrutiny-of-cable-merger-internet-choice-will-be-crucial-battlefield.html?_r=1. Customers still reliant on DSL, particularly in rural areas, cannot receive broadband meeting the benchmark required to ensure "advanced telecommunications capability." Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, *Eighth Broadband Progress Report*, 27 FCC Rcd. 10342, 10404 ¶ 141 FN 355 (2012) (*citing* Eric Mack, *Bringing Broadband to the Boonies, Part 2: DSL's Dark Side,* CNET (Mar. 27, 2012), *available at* http://news.cnet.com/8301-17938_105-57401255/bringing-broadband-to-the-boonies-part-2-dsls-dark-side/?part=rss&tag=feed&subj=).

[142] *See* Roosevelt Crawford; *2014 FCC Broadband Report* at 14.

[143] *2014 FCC Broadband Report* at 14.

shift the existing network to the next DOCSIS standard and achieve multi-gigabit speeds,[144] while DSL providers have to install completely new network infrastructure in order to compete with the speeds previously offered by cable providers.[145]

Comcast and TWC try to obscure the inadequacy of DSL as a substitute for cable broadband by citing to DSL growth statistics that are not only misleading, but outright false. The Applicants state that DSL growth from 2008 through 2012 averaged 25 percent annually.[146] To support this proposition, the Applicants cite to FCC data focused *exclusively* on the growth in DSL connections that offer at least 3 Mbps downstream speeds. These connections, which grew from just over 5 million in 2008 to more than 16 million in 2013, reflect almost in their entirety the growth of AT&T's U-verse product. U-verse uses a hybrid fiber/copper solution to provide broadband connections, some of which are capable of supporting MVPD services and offer a closer alternative than DSL to pure fiber and cable solutions. While U-verse saw growth,

---

[144] *See* Jeff Baumgartner, *TWC Tosses Hat into L.A.'s 1-Gig Ring*, Multichannel News (Jul. 18, 2014), *available at* http://www.multichannel.com/news/technology/twc-tosses-hat-la-s-1-gig-ring/382610 (discussing TWC's "future deployment plans for DOCSIS 3.1, an emerging CableLabs specification that will be capable of supporting multi-gigabit capacities – up to 10 Gbps in the downstream, and at least 1 Gbps in the upstream"); *Newsroom: CenturyLink Expands its Gigabit Service to 16 Cities, Delivering Broadband Speeds up to 1 Gigabit Per Second*, CenturyLink (Aug. 5, 2014), *available at* http://news.centurylink.com/news/centurylink-expands-its-gigabit-service-to-16-cities-delivering-broadband-speeds-up-to-1-gigabit-per-second (building out FTTP services to achieve the speeds offered by competing cable providers); Teresa Mastrangelo, *North America Telcos Facing Uphill Broadband Struggle*, Broadbandtrends (Mar. 4, 2013), *available at* http://broadbandtrends.com/blog1/2013/03/04/north-america-telcos-facing-uphill-broadband-struggle/.

[145] SUSAN CRAWFORD, CAPTIVE AUDIENCE at 78-79 (explaining why fiber, not DSL, is the only service truly in competition with cable broadband service, and noting that Comcast only faces competition from Verizon's FiOS in less than 20 percent of its territory: "[d]igital technology now provides the key differentiator on the high-speed Internet side of Comcast's business, where its future growth and dominance lie.").

[146] Testimony of David L. Cohen, Comcast, "At a Tipping Point: Consumer Choice, Consolidation and the Future Video Marketplace," Senate Committee on Commerce, Science, and Transportation, 113th Congress, pp.7-8 (July 16, 2014).

traditional DSL offered by the vast majority of telcos across the country *declined* by more than 10 million connections over the same period.[147]

3. Mobile Broadband Is Not an Adequate Substitute for Cable Broadband

The Applicants also claim that mobile broadband is an adequate substitute for cable, arguing that "[a]s wireless data speeds continue to increase substantially with the deployment of advanced technology—including 4G LTE, LTE-Advanced, and beyond—mobile broadband service is increasingly competing with wireline broadband."[148] First, not even Comcast itself appears to hold a strong conviction that mobile broadband should be included in the relevant market. The Applicants' assertion would seem to be belied by the Congressional testimony of Comcast's Executive Vice President, Mr. David Cohen, who admitted: "I do not think wireless is a perfect substitute for wireline."[149] Second, even where mobile wireless broadband services do achieve speeds of 25 Mbps, the data caps that typically are imposed for such services prevent a residential family from relying on them to meet even a fraction of its video needs.[150] Being able to stream Netflix movies to a phone or tablet over a wireless network may be a nice feature for an individual user once or twice a month. But to the extent that a family of four wishes to utilize broadband-powered online video services for all of its video consumption needs, mobile broadband is inadequate due to both data caps and capacity limitations. As Gizmodo recently reported:

---

[147] *2014 Internet Access Services Report*, at 23, 25, Tables 5, 7.

[148] *Application* at 141.

[149] Oral Statement of David L. Cohen, Comcast, "At a Tipping Point: Consumer Choice, Consolidation and the Future Video Marketplace," Senate Committee On Commerce, Science, and Transportation, 113th Cong. (July 16, 2014).

[150] Lynch Declaration ¶ 41.

> Streaming in 1080p on Netflix takes up 4.7GB/hour. So a regular one-hour episode of something debiting less than 5GB from your allotment is no big deal. However, with 4K, you've got quadruple the pixel count, so you're burning through 18.8GB/hour. Even if you're streaming with the new h.265 codec—which cuts the bit rate by about half, but still hasn't found its way into many consumer products—you're still looking at 7GB/hour. But you're not watching just one episode, are you? Of course not! You're binging on House of Cards, watching the whole series if not in one weekend then certainly in one month. That's 639 minutes of top-quality TV, which in 4K tallies up to 75GB if you're using the latest and greatest codec, and nearly 200GB if not. That means, best case scenario, a quarter of your cap—a third, if you're a U-Verse customer with a 250GB cap—spent on one television show. Throw in a normal month's internet usage, and you're toast.[151]

4. Cable Operators, and the Applicants Themselves, Concede the Inadequacy of Lower Speed Internet Access

A cut-off of 25 Mbps minimum download speed for OTT video services ought not to be a controversial proposition. Even the Applicants implicitly concede the inadequacy of lower speeds when they tout the expansion of 25 Mbps/5 Mbps service to TWC subscribers who are "currently on the 15 Mbps/1 Mbps tier" as one of the biggest benefits of the proposed merger.[152] In a related vein, Liberty Media's chairman, Mr. John Malone, has noted that "other than in the FiOS area, cable's pretty much a monopoly."[153] For his part, Comcast's chairman and CEO, Mr. Brian Roberts, has conceded that Comcast has "one competitor" in its broadband business.[154]

---

[151] *See* Leslie Horn, *You Can Burn Through Your Entire Broadband Data Cap in One Long Weekend*, Gizmodo (Feb. 18, 2014), *available at* http://gizmodo.com/you-can-burn-through-your-entire-broadband-data-cap-in-1524579598.

[152] *Application* at 34. Indeed, Comcast is "philosophically committed to making the investments necessary to ensure that its network is not only robust for today's needs but capable of evolving to meet tomorrow's consumer and business demand" with over one-third of Comcast customers on speed tiers of 50 Mbps/10 Mbps or more. *Id.* at 31.

[153] Sappington Declaration ¶ 17, *citing* Liberty Media, *Transcript of the Liberty Media Corporation Quarterly Earnings Conference Call, Q1 2011* (May 6, 2011).

[154] *Id.* ¶ 17, *citing* Thomson Reuters, CMCSA - Comcast Corporation at Morgan Stanley Technology, Media & Telecom Conference, StreetEvents Transcript (March 2, 2011).

5. Comcast Would Control 50 Percent of the Appropriately Defined Product Market and Would Enjoy Terminating Monopoly Status to Boot

In sum, cable and fiber-based broadband are the only types of Internet access service capable of offering speeds of at least 25 Mbps consistently.[155] Thus, if the merger is approved, the combined Comcast/TWC entity would not only pass almost two thirds of U.S. households,[156] but would control ***50 percent*** of the high-speed, high capacity U.S. residential broadband connections.[157] Even at a more conservative threshold of 10 Mbps or faster as the relevant product market for broadband, Comcast/TWC would command more than ***42 percent*** of the market.[158] And, even at the abysmally low 3 Mbps cut-off proposed by Applicants, the merger would still result in the combined company controlling ***35.5 percent*** of the market,[159] which by itself would be sufficient to raise serious competitive concerns.

In fact, even the 50 percent number understates the competitive effects of the transaction because of an important phenomenon: the "terminating monopoly" characteristic of high-speed access service. Even in the limited cases where consumers have a true broadband alternative to

---

[155] *See* Lynch Declaration ¶ 37.

[156] *See* Meg James, *CEO Brian Roberts Bulks Up Comcast for the Future,* Los Angeles Times (Jun. 28, 2014), *available at* http://www.latimes.com/entertainment/envelope/cotown/la-et-ct-comcast-brian-roberts-20140629-story.html#page=1.

[157] *See* Sappington Declaration ¶ 20; Mark Cooper, *Buyer and Bottleneck Market Power Make Comcast-Time Warner Merger "Unapprovable,"* Consumer Federation of America, p.6 (2014), *available at* http://consumerfed.org/pdfs/CFA-Comcast-TW-Merger-Analysis.pdf; *Application* at 9, 14, Exhibit 6. *See also* Haley Sweetland Edwards, *Meet the Internet's Most Powerful Man*, TIME MAGAZINE, p. 38 (Jul. 24, 2014)("If the deal goes through …. [Comcast/TWC] will own, by conservative estimates, 35% of the nation's broadband Internet connections… If you narrow the definition of broadband to include only those connections that would allow a family to watch and record several high-definition videos simultaneously, the same way they'd use a TV, [Comcast/TWC's] share of the market could stretch above 60%.").

[158] Sappington Declaration ¶ 20 FN 29.

[159] *See* Letter from Kathryn A. Zachem, Comcast, Catherine Bohigian, Charter, and Steve Teplitz, TWC, to Marlene H. Dortch, FCC, MB Docket No. 14-57, at 5 (Jun. 27, 2014).

Comcast or TWC, they are reluctant to change suppliers due to substantial switching costs. Consumers may incur significant costs in switching broadband providers because of early termination fees, the inconvenience of installation and set-up, the need to pay deposits, possible difficulty returning the former broadband provider's equipment, the cost of replacing incompatible customer-owned equipment, the risk of temporarily losing service, and having to learn how to use a new service, among other reasons.[160] In the Commission's words, "broadband providers have the ability to act as gatekeepers" because a subscriber's provider "is typically an edge provider's only option for reaching a particular end user" and the broadband provider is "capable of blocking, degrading, or favoring any Internet traffic that flows to or from a particular subscriber."[161]

B. The Applicants' Exclusive Focus on Local Markets Fails to Capture Broadband as a Critical Input to Rival Nationwide Video Products

The Applicants' proposed geographic market definitions seem manipulated to produce a conclusion that the merger does not have anti-competitive effects in any relevant market, despite expanding the broadband bottleneck of one company to 50 percent of the nation's high-speed broadband connections. The Applicants claim that each company serves "distinct geographic areas" and "competes in its respective footprint,"[162] and that local market share is "the only

[160] Sappington Declaration ¶ 38, *citing* Preserving the Open Internet, *Report and Order*, 25 FCC Rcd. 17905, 17924-25 ¶ 34 (2010) ("*Open Internet Order*"), *aff'd in part, vacated and remanded in part sub nom., Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014).

[161] *Open Internet Order*, 25 FCC Rcd. at 17919, 17935 ¶¶ 24, 50.

[162] *Application* at 1; *see also* Joint Written Statement of David L. Cohen and Arthur T. Minson, "The Impact of the Comcast-Time Warner Cable Merger on American Consumers," Senate Committee on the Judiciary, 113th Congress, p.3 (April 9, 2014) ("Comcast and TWC *do not compete for customers in any market* – either for broadband, video, or voice services . . . . Comcast and TWC serve separate and distinct geographic areas.").

geographic market of any relevance to the core services at issue here."[163] In particular, the Applicants assert that the merger will not reduce consumer choice in the Internet access service or Internet interconnection markets because "Comcast and TWC provide broadband services in different geographic areas."[164] In the words of Comcast's David Cohen, "if you want to buy broadband in New York, in Philadelphia, in Los Angeles, and San Francisco, you don't have a choice today between Comcast and Time Warner Cable. You only have one choice . . . which is whichever one of those companies is in your market, you can buy from them. And after this transaction, there's not going to be any reduction in choice in the broadband market in any market in America."[165]

Essentially, the Applicants are saying that their broadband position is so dominant already that the merger should be approved because it could not make their position more dominant. As explained below, this argument is inconsistent with a large body of Commission and antitrust case law, and fails to acknowledge that the merger threatens to withhold a critical input (unimpeded broadband access for consumers) from Comcast and TWC's video competitors.

---

[163] *Application* at 4. "The FCC's standard for whether two providers of broadband, video, or voice compete is whether they offer service to the same customers—the same standard reflected in the DOJ's and FTC's Horizontal Merger Guidelines. Consistent with this standard, as noted above, the Commission has concluded that the relevant market for each of these services is local." *Id.* at 138.

[164] *Id*. at 1.

[165] Oral Testimony of David L. Cohen, "At a Tipping Point: Consumer Choice, Consolidation and the Future Video Marketplace," Senate Committee on Commerce, Science, and Transportation, 113th Congress (July 16, 2014), *available at* http://www.commerce.senate.gov/public/index.cfm?p=Hearings&ContentRecord_id=b6ff2efd-1203-4b0e-87d5-87edccb63e4d.

1. The FCC and Antitrust Precedents Support Evaluating the Impact of Combining the Comcast and TWC Footprints on the National Market for Online Video

The Commission must look beyond the Applicants' statement that the transaction does not produce competitive harm because Comcast and TWC "do not compete in any relevant market" today.[166] Precedent from the video industry and other markets makes it clear that this statement misses the critical point that consolidation of the geographic footprint of two cable broadband providers will have an impact on online video services that operate at the national level. Therefore, it is not surprising that in similar circumstances, the antitrust agencies have rejected an exclusively local focus in favor of a broader, national prism.

- ***AT&T/MediaOne***

This is not the first time that the Commission and the Justice Department have considered a factual configuration similar to that presented by the Comcast/TWC merger. Both agencies evaluated an attempted combination of two *non-overlapping* broadband access providers in connection with the *AT&T/MediaOne* transaction.[167] As a result of its acquisition of MediaOne, AT&T would have owned substantial interests in both Excite@Home and RoadRunner, the two largest Internet Service Providers ("ISPs") used by cable companies to distribute broadband content and services.[168] Together the two companies accounted for approximately 40 percent of

[166] *Application* at 127.

[167] *See AT&T-MediaOne Order* 15 FCC Rcd. at 9816. In *AT&T/MediaOne*, AT&T—a large cable system operator—sought to acquire MediaOne, another large operator of cable systems. AT&T was one of three cable owners (along with Comcast and Cox) of Excite@Home, then the largest residential broadband service provider in the country. Excite@Home had exclusive rights to provide residential broadband services over the systems of its three cable owners. At the time, AT&T owned a majority of the voting interest in Excite@Home. MediaOne, for its part, owned a roughly one-third interest in RoadRunner, then the second largest residential broadband service provider after Excite@Home. Like Excite@Home, RoadRunner had exclusive rights to provide broadband over the systems of its two cable parents, MediaOne and Time Warner.

[168] *Id.* at 9864-65 ¶ 110.

residential broadband subscribers and had last-mile facilities reaching nearly 63 percent of homes passed by cable nationwide. As discussed above, the combined Comcast/TWC will account for 50 percent of high-speed broadband connections, and will pass almost two thirds of households in the United States.

Even though the Commission found it premature to conclude that the *AT&T/MediaOne* transaction posed a sufficient threat to competition in the distribution of broadband Internet content,[169] the Justice Department did not, and required the merged entity to divest its interest in RoadRunner.[170] The Justice Department determined that allowing AT&T to acquire a substantial share in RoadRunner would likely result in anti-competitive harm in the *national market for broadband content distribution*. The Department's analysis was focused on the transaction's likely impact on that market; importantly, it did not even touch upon any actual or potential competition between Excite@Home and RoadRunner for the provision of broadband service to cable operators. Nor did the complaint allege competitive overlaps between Excite@Home and RoadRunner with respect to end users in particular local residential broadband markets.

Instead, the Justice Department's competitive concerns were concentrated solely on the increased market power that AT&T would be able to exercise post-merger in a national market for broadband content distribution, and over those firms whose services required broadband-level speeds, such as the delivery of high quality, streaming video to consumers.[171] In particular, the complaint emphasized that AT&T would have increased market power over broadband content

[169] *Id.* at 9871 ¶ 123.

[170] Final Judgment, *United States v. AT&T*, No. 1:00-cv-01176 (D.D.C. Sept. 27, 2000); *see also* Competitive Impact Statement, *United States v. AT&T*, No. 1:00-cv-01176 (D.D.C. 2000).

[171] Complaint, *United States v. AT&T*, No. 1:00-cv-01176, p.8 ¶ 22 (D.D.C. May 26, 2000).

providers "with national distribution in mind, largely in order to maximize the potential number of consumers they will reach."[172]

The Justice Department concluded that, by enabling AT&T to potentially withhold the distribution of broadband content from a proportionately larger set of residential broadband customers, the transaction would have resulted in AT&T having "substantially increased leverage in dealing with broadband content providers, which it could use to extract more favorable terms for such services."[173] In addition to using its increased leverage to extract higher prices for content distribution services, the complaint emphasized that AT&T could use its increased market power to foreclose content providers through its power to "promote or retard the success of individual [services]" favored by AT&T:

> AT&T could profit from the creation and exercise of such market power either through direct ownership of a favored [service], or by obtaining payments from favored [services] in exchange for favorable treatment by [its broadband service]. By exploiting its 'gatekeeper' position in the residential broadband market AT&T could make it less profitable for unaffiliated or disfavored [services] to invest in the creation of attractive broadband content, and thereby reduce the quantity and quality of content available.[174]

Moreover, the complaint found that AT&T could exercise this market power because broadband content providers depended on effective and efficient data delivery to provide an attractive viewing experience for their users, and the efficient distribution of content could "heavily influence their success or failure."[175] The ability of broadband providers to disfavor particular broadband content providers in the physical distribution of their services therefore was a powerful source of leverage.

---

[172] *Id.* at 9 ¶ 23.

[173] *Id.* at 12 ¶ 33.

[174] *Id.* at 12 ¶ 34.

[175] *Id.* at 11 ¶ 28.

Here, Comcast's proposed acquisition of TWC poses many of the same concerns identified by the Justice Department in *AT&T/MediaOne*, but only worse. Unlike AT&T fourteen years ago, Comcast has its own online video product to sell. Consequently, Comcast has greater incentive to foreclose or otherwise disadvantage rival video services. Comcast's proposed merger also takes place with significantly *greater* levels of cable system consolidation than was the case in 2000 (and complete rather than partial ownership in broadband Internet service, in contrast with *AT&T/MediaOne*). Furthermore, this merger carries more profound risks of anti-competitive harm, given the increasing importance of online video in the intervening fourteen years.[176] Today, online video offerings require broad geographic distribution. As discussed in Sections VII and VIII below, both Comcast and TWC have linear and online video businesses today, and will have the incentive to thwart competition from other video players. Regardless of the local markets in which Comcast and TWC provide residential broadband service, the fact remains that any online video service that requires broad geographic distribution will have to deal with the combined company. And the merger would give the combined company dramatically larger scale in provisioning broadband connections on which online video relies. The success or failure of an online video service would rely on whether it is able to reach its end users over a broadband network dominated by a single company.

- ***Primestar***

This is not the first time that Comcast has tried to shut out emerging competition to its video distribution business by seeking to control a key input to that competition. Then, as now,

[176] In its *Fourteenth Video Competition Report*, the FCC acknowledged the importance of OVDs by devoting an entire new category to online video. It noted that Internet-based distribution of video had already "undergone dramatic transformation," and was "evolving from a niche service into a thriving industry." Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Fourteenth Report*, 27 FCC Rcd. 8610, 8720, 8734 ¶¶ 237, 276 (2012).

Comcast argued that it should be allowed to join forces with other cable systems on the theory that cable already had market power, and thus things could not become much worse. The instant transaction is a virtual facsimile of the *Primestar* transaction, which was stopped by the Department of Justice in 1998.[177] The Commission should reject this transaction for the same reasons the Justice Department stopped *Primestar*.

Back in 1998, the competitive threat facing the cable industry was satellite television. Primestar, a joint venture of the five largest cable operators, including Comcast, sought to curtail that competition by purchasing the rights to the 110° W.L. orbital slot—one of only three high-powered satellite television slots from which a provider could serve the entire United States.[178] But the Justice Department blocked the transaction, finding that the acquisition would place control over a key competitive input in the hands of the dominant cable operators, giving them the ability to foreclose use of that input to challenge their market power.[179] Sixteen years later, Comcast is taking a page from its old *Primestar* playbook, and is once again trying to forestall competition by controlling a key competitive input. This time, however, it is not an orbital slot at issue, but the high-speed broadband pipes into consumers' homes. Here, Comcast seeks to

[177] *See* Complaint, *United States v. Primestar, Inc.*, 1:98-cv-01193 (D.D.C. May 12, 1998) ("*Primestar Complaint*"). Primestar abandoned the transaction five months later. *See* Statement Regarding Primestar Abandoning Deal to Acquire News Corp/MCI's Direct Broadcast Satellite Assets, Department of Justice (1998), *available at* http://www.justice.gov/atr/public/press_releases/1998/1988.htm.

[178] Primestar was a partnership formed in 1990 as a joint venture involving Time Warner, Inc.; Tele-Communications., Inc.; Comcast Corporation; Cox Communications, Inc.; US West/Media One; and Primestar's satellite provider, GE American Communications, Inc. *See Primestar Complaint* at 7 ¶ 13. Pursuant to the terms of the proposed transaction, News Corporation/MCI agreed to transfer authorization to operate 28 satellite transponders at the 110° West Longitude ("WL") orbital slot, along with two high-power DBS satellites that were under construction, to Primestar. *Id*. at 10 ¶ 26.

[179] *Id.* at 31 ¶ 95.

control a large enough national share of those connections to forestall what is (in Comcast's own words) a "competitive cage match" with online video distributors.[180]

The *Primestar* case and Comcast's proposed acquisition of TWC are eerily similar. Critically, the asset proposed for acquisition in the 1998 transaction represented a necessary input to an emerging competitor—satellite television. Indeed, the Justice Department observed that control over the 110° W.L. orbital slot was necessary for the expansion of satellite television, and that control over the slot would be a "potent weapon" in the hands of cable operators.[181] The Justice Department recognized this weapon as "unique" because it represented the only means through which new entrants could offer competition to incumbent operations. Today, access to the consumers at the end of the cable providers' high-speed broadband pipes is the lifeblood of OTT video providers, and the ability to block or impede consumer access to OTT services represents a weapon capable of dealing a death blow to any OTT video provider. Like the importance of a satellite slot to satellite TV providers sixteen years ago, today, the cable broadband pipe is often the only avenue through which OTT video providers can offer their service to consumers.

Then, as now, the transaction threatened to curtail emerging competition to dominant, incumbent video distributors. The Justice Department observed that "[h]igh power DBS represents the most serious competitive threat the cable industry has ever faced"—because high-power DBS service beamed from a single point could reach the entire continental United States—and was the best hope for consumers who sought alternatives to their entrenched local cable provider.[182] The Justice Department emphasized that the defendant cable companies

[180] *Application* at 27.

[181] *Primestar Complaint* at 26, 31 ¶¶ 77, 93.

[182] *Id.* at 25 ¶ 70.

recognized the magnitude of the competitive threat posed by high-powered DBS and sought to "nip it in the bud," to protect their dominance and monopoly profits for years to come.[183] Today, as the Commission acknowledges, online video offerings present a "serious competitive threat" to the cable industry.[184]

The *Primestar* case is important here for one more reason: it further highlights the inadequacy of conduct restrictions. The complaint against Primestar came just a few years after the United States, along with 45 state attorneys general, filed actions against Primestar and its members, including Comcast, alleging that Primestar and its partners had "conspired to restrain competition by blocking other firms from entering the DBS business."[185] These actions resulted in both federal and state consent decrees that sought to regulate and discipline the behavior of Primestar and its cable operator participants.[186] But the conduct restrictions evidently did not work. Primestar needed to cease operations. This is what the Justice Department's 1998 complaint ultimately accomplished.[187]

- ***Omnicare***

The need to consider a national market, despite the local characteristics of a service provided by the proposed merger parties, has manifested itself in other industries too. *Omnicare, Inc.* is instructive.[188] There, the FTC challenged Omnicare's proposed acquisition of

---

[183] *Id*. at 3.

[184] *See supra* 177; *see also Open Internet Order*, 25 FCC Rcd. at 17916 ¶ 22.

[185] *Primestar Complaint* at 15 ¶ 38.

[186] *Id.*

[187] Primestar was ultimately acquired by DIRECTV. *See* Geraldine Fabrikant, *DirecTV to Buy A Major Rival for $1.8 Billion*, The New York Times (Jan. 23, 1999), *available at* http://www.nytimes.com/1999/01/23/business/directv-to-buy-a-major-rival-for-1.8-billion.html.

[188] Complaint, *In the Matter of Omnicare, Inc.*, FTC Docket No. 9352 (Jan. 27, 2012) ("*Omnicare Complaint*").

PharMerica, its largest rival in the market for long-term care pharmacy ("LTC") services provided to Part D sponsors for their skilled nursing facilities ("SNFs") beneficiaries.[189] Each of the two parties already enjoyed *exclusive* contractual relationships with a large number of SNFs across the country. Competition for the business of each SNF for the duration of the contract would *not* be reduced simply because there was none already. But the FTC still found that:

> The combined firm would have unparalleled power in its negotiations with Part D sponsors. Already a 'should have,' Omnicare's post-Acquisition market share will almost certainly make it a 'must have' . . . . This will significantly increase Omnicare's bargaining leverage because Omnicare's threats to terminate the Part D sponsor if it refuses to agree to Omnicare's contractual demands will represent an unacceptable risk.[190]

That merger thus shares an important characteristic with this transaction: the merging parties already had a lock on their territories (each SNF), and arguably would not further enhance that power if the relevant market were defined narrowly. But the FTC did not so limit its analysis. Rather, the FTC focused on the combined company's increased leverage over Part D sponsors. Here, too, a combined Comcast/TWC will have unparalleled power over online video providers due to its significant broadband footprint and pronounced incentive to employ this power in an anti-competitive fashion.

- ***Fighting Ships***

Another example of the need for broad geographic market analysis dates back to the early 1900s: the notorious "fighting ship" practices of the shipping conferences. To protect the profits from transoceanic transport, dominant shipping lines joined forces to set agreed rates and

[189] LTC pharmacies primarily serve the prescription medication needs of SNFs, which serve a majority of the beneficiaries of Medicare Part D Plan nationwide. Sponsors of Part D plans are required to provide "convenient access" to LTCs for their beneficiaries residing in SNFs. *Omnicare Complaint* at 2 ¶¶ 2-3.

[190] *Id.* at 3 ¶ 7.

allocate amongst themselves the various profitable shipping routes between North America and points eastward.[191] The conferences worked to discourage upstart competitors using a variety of means,[192] including rate structures designed to ensure loyalty by the shippers of goods themselves and the use of the so-called "fighting steamers"—ships designated to serve routes in which a non-conference competitor was trying to compete.[193] These ships were dispatched with cut-rate prices designed to drive the upstart out of business.[194]

The Supreme Court addressed the use of fighting ships by the shipping conferences in 1917, holding that the "employment of 'fighting ships' to kill off competing vessels" violated the Sherman Act.[195] The shipping conferences contended that other shippers were free to use alternate routes, and that the purpose of the collaboration was to achieve "regularity of service, with steadiness of rates."[196] The Court rejected this argument, finding that the predatory practices adopted by the conference were "intended to prevent competition," and stating that the firms had a "duty to compete, not combine."[197]

---

[191] Comm. on the Merchant Marine and Fisheries on Steamship Agreements and Affiliations in the American Foreign and Domestic Trade Under H. Res 587, H.R. Doc. No. 805 (63d Sess. 1914) ("*Alexander Report*"). Four groups of lines carried approximately half of the over 2,000,000 passengers immigrating to America in 1912. *Id.* at 21-23.

[192] *Id.* at 46.

[193] *Id.* at 45-46.

[194] *Id.* at 46. Congress recognized the need to protect competitors from these practices, and commissioned an investigation which produced the Alexander Report, in which the Committee on the Merchant Marine and Fisheries recommended government oversight of conference agreements and prohibition of fighting ships practices. *Id.* at 423. Ultimately, Congress created the United States Shipping Board under the Shipping Act of 1916, which prohibited the use of fighting ships among other anti-competitive behaviors. Shipping Act, 1916, ch. 451, § 14, Pub. L. No. 260 (current version at 46 U.S.C. § 842 (2002)).

[195] *Thomsen v. Cayser*, 243 U.S. 66, 87 (1917).

[196] *Id.*

[197] *Id.* 85, 87 ("And it finds no justification in the fact that defendants' 'contributions to trade and commerce' might 'have been withheld.' This can be said of any of the enterprises of capital, and

Notably, the anti-competitive conduct of the shipping conferences might have been above antitrust reproach if the Court's analysis had been focused on the narrow local markets, as the Applicants suggest here: each shipping conference already dominated its own routes, and might have been able to freely combine with other shipping conferences to kill off nascent competitors under a route-by-route analysis.[198] The Supreme Court instead analyzed the effect on competition in the trans-Atlantic shipping market as a *whole*, and the impact of the defendants' practices on the companies in America seeking to reach or transport customers across the ocean,[199] to which defendants had effectively blocked access.[200]

* * *

In sum, Commission and antitrust precedent support analyzing this transaction using a national broadband market, recognizing its implications for competitors requiring a broad geographic footprint, and looking past the Applicants' proposed geographic limitations.

2. The Merger Threatens to allow Comcast and TWC to Withhold a Critical Input from Competitors

This merger has serious anti-competitive implications even under the Applicants' local market theory. Comcast and TWC today face increasing competition from OTT video providers in each and every local market. To be viable, each OTT video provider needs broad geographic penetration at sufficient speeds and with sufficient quality to deliver its service. The combined

---

has been urged before to exempt them from regulation even when engaged in business which is of public concern.").

[198] *Alexander Report* at 21-25.

[199] *Thomsen*, 243 U.S. at 86-87 (considering competition among shipping companies that previously competed or would have begun competing in the market for trans-Atlantic shipping, regardless of the specific routes they used: "nor can we say the success of the trade required a constraint upon shippers or the employment of 'fighting ships' to kill off competing vessels which . . . used the free and unfixed courses of the seas . . . to break in upon defendants' monopoly.").

[200] *Id.* at 74-75.

entity, with its expanded reach, can withhold this vital input from its competitors with much greater ease than each standing alone, irreparably damaging their rivals' ability to compete in each local market.

In arguing that Comcast and TWC do not serve overlapping service footprints today, the Applicants fail to account for the fact that online video providers like Netflix, Amazon, Hulu, and DISH's future OTT service will be offered on a *nationwide* basis (anywhere that sufficient Internet access is available). Online video offerings require broad geographic penetration at speeds and quality sufficient to sustain long-form video, and—increasingly—live and HD, long-form video. This has several implications. To be viable against the combined entity in each and every local franchise area, an OTT video provider will need a critical mass of consumers. But, the combined entity will be able to give or take away these consumers by using its control over high-speed broadband connections.

In addition, today, an OTT video provider still has alternatives to reach consumers even when it is dealt a blow due to misconduct by one gatekeeper. Today, pre-merger, Comcast could block DISH's OTT video in Philadelphia and Chicago, but DISH could still survive if its service was offered unimpeded in the TWC-dominated markets of New York, Los Angeles, and Dallas.[201] In this example, DISH's inability to reach Comcast high-speed broadband subscribers would be a serious blow, to be sure. But it would likely not be lethal. Alternatively, if TWC decided to engage in similar anti-competitive conduct, that, too, would likely be survivable because of the availability of unimpeded service in other large markets, including those in Comcast's present operating territory.[202]

[201] *See* Lynch Declaration ¶¶ 51-52.

[202] *Id.*

In Professor Sappington's view, "the nationwide market for the residential distribution of high-speed broadband content" is a relevant market for analyzing the proposed merger.[203] Professor Sappington explains:

> Presently, if an OVD is unable to secure access to Comcast's high-speed broadband subscribers, the OVD can attempt to reach the broadband subscribers of TWC and other ISPs. Similarly, if the OVD cannot secure access to TWC's subscribers, it can attempt to reach the subscribers of Comcast and the other ISPs. The OVD may be able to operate profitably under either of these arrangements. However, if the proposed merger is approved, failure to secure access to the high-speed broadband subscribers of the combined Comcast-TWC leaves access to the broadband subscribers of other ISPs as the OVD's only option. This option may not permit the OVD to operate profitably if the combined subscriber base of the other ISPs is sufficiently small.[204]

The Commission recognizes the threat of foreclosure for OTT video providers—a threat that this merger would dramatically magnify.[205] The Commission has observed that broadband providers—often the same entities that also provide MVPD services—"have incentives to interfere with the operation of third-party Internet-based services that compete with the providers' revenue-generating . . . pay-television services."[206] The Commission has further pointed to the recognition by broadband providers such as AT&T and TWC that OTT video providers compete directly with their own "core video subscription service."[207]

---

[203] Sappington Declaration at ¶ 25.

[204] *Id.* ¶ 24.

[205] *See Comcast-NBCU Order*, 26 FCC Rcd. at 4263 ¶ 62 ("We impose a set of measures carefully tailored to safeguard against [Comcast's incentive and ability to hinder competition from online video distributors.]").

[206] *Open Internet Order*, 25 FCC Rcd. at 17916 ¶ 22.

[207] *Id.* at 17916 ¶ 22.

V. EACH APPLICANT HAS, AND THE COMBINED COMPANY WILL HAVE ON A LARGER SCALE, THE ABILITY TO HARM BROADBAND-RELIANT COMPETING VIDEO PRODUCTS

Each of Comcast and TWC has, and the combined company will have, a formidable arsenal of weapons at its disposal to thwart the competitiveness of rival video providers, including DISH's core satellite service and OTT services. These weapons enable a motivated company to harm competitors' online video offerings that travel over its broadband pipe in a variety of ways.

First, a combined Comcast/TWC will be able to degrade the quality of DISH's various broadband-powered online video services (and those of other OTT video providers) by exercising leverage at three Internet "choke points" to disadvantage DISH's video traffic traveling on the Comcast/TWC network en route to the end user.

Second, Comcast/TWC will have the ability to undermine the competitiveness of DISH's online video offerings by imposing discriminatory data caps that divert consumers towards Comcast/TWC's own affiliated video services.

Third, the merged entity will have the ability to withhold its own NBCUniversal and other affiliated content from DISH, including the important feature of online access to that content.

Fourth, because of its newly enlarged leverage with programmers, Comcast/TWC will be able to coerce third-party content owners and programmers not to grant online rights to DISH and other competing OTT video providers.

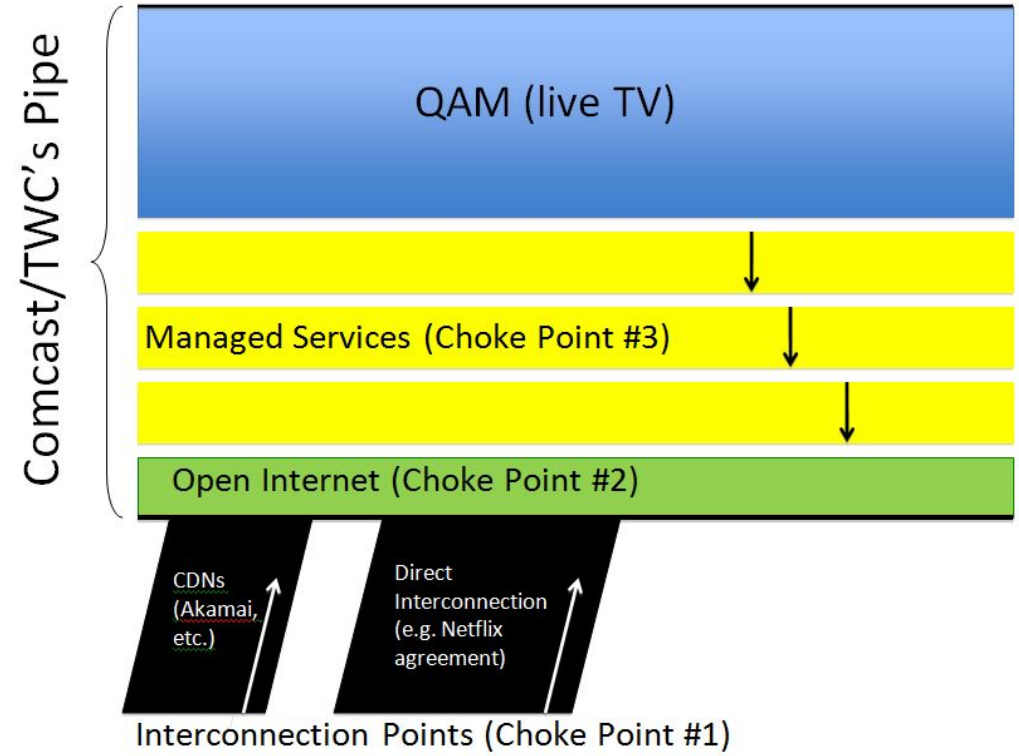
A. The Merged Comcast/TWC Will Have the Ability to Disadvantage Rivals' Online Video Content at Three "Choke Points" on the Broadband Pipe

Comcast and TWC propose to consolidate their broadband footprints so as to achieve unprecedented control over the broadband pipe into the home. Comcast/TWC's broadband pipe

would have three "choke points" where the combined entity would have the technical ability to harm online video traffic. First, Comcast/TWC could impose discriminatory peering and interconnection terms on online video traffic from other unaffiliated MVPDs and OVDs, resulting in poorer service quality and/or outrageous fees in order to prevent reductions in service quality. Second, Comcast/TWC will be able to degrade the traffic from competing OVDs on the public Internet portion of Comcast/TWC's broadband pipe. Third, Comcast/TWC would be able to reduce the quality of service for online video traveling on the Comcast/TWC network by "starving" the public Internet portion of the last-mile portion of the broadband pipe in order to increase capacity for its own vertically integrated "managed services."

The three choke points are illustrated in Figure 2 below and are explained in further detail:

Figure 2: The Three Choke Points



Choke Point # 1: Interconnection Point

Choke Point #1 is the interconnection point, where competitors' video services would enter the Comcast/TWC broadband pipe. The interconnection choke point is best described as the "on-ramp" to the companies' broadband highway.[208] No data can enter Comcast/TWC's broadband highway without passing through Choke Point #1. Comcast/TWC would control this critical point of interconnection, as the combined company could close ports or refuse to open enough ports to allow competing content onto the "public Internet."[209] Comcast/TWC would be the sole gatekeeper of Choke Point #1.[210]

Comcast/TWC's control over Choke Point #1 would give it two capabilities that it could use to harm competitors' online video content entering their network. *First*, Comcast/TWC would have the ability to impact the end user's online video experience by imposing technical measures like limiting the number of ports through which that data can pass, in addition to other measures that would manipulate the capacity at the point where third party content first interconnects with the last-mile broadband network.[211] In other words, the combined company would be able to degrade the performance of DISH's broadband-powered services by slowing it down *before* it reaches the last mile to the end user. *Second,* because Comcast/TWC can manipulate how competitors' online video traffic enters its network, the combined entity will have the ability to charge unreasonable prices to competitors in order to prevent service problems

[208] *See* Lynch Declaration ¶ 5.

[209] *Id.*

[210] *Id.*

[211] *Id.* ¶ 68.

from occurring.[212] Among other things, this would raise the costs for their rivals and hurt consumers.

- ***Manipulating Capacity at the Interconnection Point***

As explained in Section III, DISH provides an array of broadband-powered online video services, many of which rely upon delivery of DISH's content into the home, traveling over the wireline broadband Internet access network provided by companies like Comcast and TWC. Today, DISH contracts with third parties in order to accomplish the delivery of its online video services to subscribers, many of whom use Comcast or TWC for their Internet access service. DISH, for example, has commercial agreements with Level 3 for long-haul transport of DISH online video content across the public Internet.[213] Once Level 3 transports DISH video content closer to the requesting end user, DISH has agreements with a variety of different third party Content Delivery Networks ("CDNs") for connectivity to the subscriber's broadband ISP.[214] Online video providers, such as DISH, use CDNs to optimize the delivery of content to create a better user experience.[215] That connection point—CDN to ISP—requires an agreement between the two providers, which can take the form of a peering or interconnection agreement between the CDN and the ISP.[216]

---

[212] *Id.*

[213] *Id.* ¶ 66.

[214] *Id.* ¶ 65.

[215] *See, e.g., CDN: Content Delivery Network*, Level 3 (accessed August 20, 2014), *available at* http://www.level3.com/en/products-and-services/data-and-internet/cdn-content-delivery-network/ ("Level 3's global Content Delivery Network (CDN) supports some of the world's largest video, software and web properties. The Level 3® Network is connected with direct, private connections to almost every major ISP and Telco, which allows traffic to flow directly to end users without traversing public peering points.").

[216] Agreements between CDNs and ISPs can take several forms:

How DISH's long-haul transport providers and CDNs are treated by ISPs like Comcast and TWC has a tremendous impact on the quality of service that DISH subscribers experience. Unfortunately, Comcast/TWC would have the ability to reduce the performance of DISH's services by, for example, refusing to install a sufficient number of network data ports for the CDNs that DISH uses to deliver traffic.[217] By reducing the number of ports allocated to a given CDN, Comcast/TWC will be able to produce a slow-down in data rates,[218] which will in turn cause buffering, pixilation, and degraded image quality for a customer trying to enjoy a streaming video service. Netflix has said that this is precisely what it experienced earlier this year:

> Comcast is limiting the capacity of connections between its network and other networks, unless the network agrees to pay Comcast for access. This congestion causes delays when traffic enters Comcast's network through the settlement—free connections. Consumers experience these delays as slow page loads, poor streaming quality, and frequent streaming pauses.[219]

The Applicants claim that they lack the ability to selectively degrade traffic from a particular content source, saying that "it is a misconception that Comcast or TWC serves as a 'gatekeeper' controlling access to its own last mile" and that "edge providers have multiple

---

(a) *peering*: the ISP and the CDN agree to exchange traffic without charging one another and agree generally to a proportion of traffic sent from one party compared to that sent by the other;

(b) *paid peering*: the same as above but with compensation typically paid by the CDN to the ISP; or

(c) *interconnection*: essentially the same as paid peering except that payment terms tend to be at higher rates. *See* Lynch Declaration ¶ 65.

[217] *Id.* ¶¶ 68-69.

[218] *Id.* ¶ 68.

[219] *See* Letter from Christopher Libertelli, Netflix, Inc., to the Honorable Senator Al Franken, at 1 (Apr. 23, 2014), *available at* http://www.franken.senate.gov/files/letter/140424NetflixResponse.pdf.

avenues for reaching Comcast's broadband subscribers, undermining Comcast's ability to deny access or degrade service to such providers . . . .."[220] This is incorrect.[221] Broadband access providers like Comcast can "target[] edge provider traffic directly (through, for example, port-blocking for targeted applications)" or can "target[] providers . . . with whom they exchange traffic, allowing their ports to congest and refusing to augment capacity unless the provider pays the ISP a toll."[222]

- ***Charging Unreasonable Prices to Prevent Interconnection-Related Problems***

Because of the technical ability to manipulate the "on-ramp" to their network for DISH and other online video platforms, Comcast/TWC will also have the ability to charge unreasonable prices so that slow-downs will not happen.[223] A combined Comcast/TWC will be able to use its chokehold at the point of interconnection to require OVDs to enter into similar deals as the one Netflix apparently made, where an OVD has to pay money in order to provide Comcast/TWC's end users with a good video experience.

Choke Point # 2: The "Last Mile" to the End User

Choke Point #2 is the broadband connection to the consumer. This is often called the "public Internet" or the "last mile" connection. Picture this as the right-lane of the companies' broadband highway.[224]

Today, both the Comcast and TWC broadband networks have the technical capability to discriminate against certain Internet Protocol packets using deep packet inspection, jitter, port-

[220] *Application* at 159.

[221] *See* Lynch Declaration ¶ 67-69.

[222] *See* Letter from Joseph C. Cavender, Level 3 Communications, to Marlene H. Dortch, FCC, GN Docket Nos. 14-28 and 09-191, at 2 (Apr. 24, 2014).

[223] *See* Lynch Declaration ¶ 68.

[224] *Id.* ¶ 5.

blocking, and other means.[225] The communication protocols used on the Internet describe how packets contain source and destination addresses; source addresses can usually be linked to a specific website or a specific video service, such as DISH World or DISH's forthcoming domestic OTT service.[226] With the information available from inspecting and analyzing their customers' communications, a combined Comcast/TWC could easily choose to speed up or delay certain packets over others, and thus, certain streams of content or certain applications over others.[227]

For all DISH subscribers with broadband-enabled STBs, Comcast/TWC also would have the ability to block or degrade DISH broadband-powered STB features in the home, such as Internet-delivered VOD to the STB.[228] Comcast/TWC could accomplish such blocking and degradation through inspection of Media Access Control ("MAC") addresses[229] for hardware devices. Comcast/TWC could also discriminate against Sling or DISH IP VOD by port-blocking, and inspecting protocol type, message headers, or payload type.[230]

Choke Point # 3: Managed Services

Choke Point #3 is any managed or specialized service channels on Comcast/TWC's broadband pipe, which can act as high-speed lanes and squeeze the capacity of the public Internet portion of the pipe.[231]

---

[225] *Id.* ¶ 70.

[226] *Id.*

[227] *Id.*

[228] *Id.*

[229] *Id.*

[230] *Id.* ¶ 5.

[231] *Id.* ¶¶ 71-72.

If one thinks of the broadband pipe as an eight-lane highway, it is easy to see how the "public Internet" lane could become gridlocked if seven of the lanes are dedicated to high-speed priority lanes.[232] Some of these lanes could contain so-called "managed services," which in essence would mean preferential treatment for the data packets directed into the managed services category, probably Comcast/TWC's own proprietary services or those of paying Comcast/TWC customers.[233] Comcast/TWC, as the network operator, would be the sole arbiter of which lane may proceed, and at what speed.[234]

Applicants' "Net Neutrality" Commitment Does Not Address Choke Points # 1 & # 3

The availability of Choke Points # 1 and # 3 to the Applicants is particularly important as it highlights the sheer inadequacy of the Applicants' so-called "net neutrality" commitment. The net neutrality conditions to which the Applications propose to submit do not apply to interconnection (Choke Point #1) or managed services (Choke Point #3).[235] Even if net neutrality protections[236] are respected on the public Internet portion of the pipe (Choke Point #2), they would provide no relief at all if that portion of the pipe is reduced to a trickle in order to make room for more of Comcast/TWC's preferred managed services, or if Comcast/TWC decide to degrade competing video content at the point of interconnection.

[232] *Id.* ¶ 5.

[233] *Id.* ¶ 71.

[234] *Id.*

[235] *See Open Internet Order*, 25 FCC Rcd. at 17908 ¶ 7 (stating the Commission will "closely monitor . . . specialized services," but not subject such services to the Open Internet rules); *Application* at 59.

[236] *See generally Open Internet Order*, 25 FCC Rcd. 17905.

B. Comcast/TWC Will Have the Ability to Undermine Rivals' Video Offerings Through Discriminatory Data Caps

Comcast/TWC will also have the ability to impose restrictive data caps for data that travels over the public Internet portion of its pipe, while exempting any Comcast/TWC online services from those caps. If DISH online video services are subject to a low monthly data cap, this could depress consumer interest in accessing those services, while at the same time driving consumers to use Comcast services because they are exempted from the data cap. As noted above in Section IV.A.1, HD Internet video requires a significant amount of bandwidth.[237] If Comcast/TWC were to impose data caps ranging from 250-300 Gigabytes per month, such a cap would be well below what would be required to provide one household TV with enough data to support its online video consumption, neatly disposing of the competitive threat posed by other OTT services.[238] Moreover, Comcast/TWC could establish a policy whereby subscribers' use of the Comcast proprietary online video services, such as Xfinity, would not count towards the data cap, thus encouraging use of the Comcast/TWC proprietary service and discouraging use of competing OTT services.[239]

[237] Assume that a 5 Mbps data rate is needed to watch HD video delivered through the Internet, and assume a typical household TV is viewed 6 hours a day. *See* Lynch Declaration ¶ 73. This would translate into about 405 Gigabytes of data (5 Mbps = 2.25 Gigabytes used per hour; 2.25 Gigabytes x 6 hours x 30 days = 405 Gigabytes/month). *Id.*

[238] *See* Lynch Declaration ¶ 74.

[239] *Id*. Comcast can already avoid the use of OTT data to offer the same on-demand content that DISH must provide using the public Internet through QAM channels or managed IP services outside of the public Internet. *See* Jeff Baumgartner, *Comcast Serves Up a Taste of 4K*, Multichannel News (Feb. 21, 2014), *available at* http://www.multichannel.com/news/content/comcast-serves-taste-4k/356120 ("Comcast showed two examples of 4K/Ultra HD video-on-demand clips running on its QAM video network," which "absorbed about the same space required for a regular HD channel.").

C. The Combined Company Will Have the Ability to Foreclose Rivals from Affiliated Programming

Both Comcast and TWC possess another powerful weapon: their owned and affiliated content. Comcast controls all of the NBCU content it obtained in its previous merger, in addition to its powerful regional sports franchises in Philadelphia, Washington, DC, New York, New England, Chicago, Houston, and California.[240] TWC, for its part, controls the SportsNet and SportsNet LA channels, which command significant audiences in the southern California market, and has a significant interest in SportsNet New York, which broadcasts the New York Mets games.[241] Combined, the merged company will control both national "must-have" programming (in the NBCU assets) and key regional programming in eight of the largest video markets in the country, all of which it could withhold from rival MVPDs and OTT video providers.

D. Comcast/TWC Will Be Able to Pressure Third Party Programmers to Withhold Online Rights from Rivals

As noted above, DISH had to negotiate to acquire online video rights from Disney and A+E for its forthcoming domestic OTT service.[242] In order to offer a compelling package of channels for its OTT-only product, DISH will need to negotiate additional online rights with other programmers. With its heft as the largest cable operator, Comcast can demand both the most robust OTT rights for itself *and* restrictions on the rights that third party programmers make available to rival video providers. In fact, DISH already has experienced difficulties in obtaining certain OTT rights from third party programmers due to restrictive contractual limitations

[240] *See Comcast Sports Net*, Comcast Corporation (accessed Aug. 20, 2014), *available at* www.comcastsportsnet.com.

[241] *See Time Warner Cable SportsNet*, Time Warner Cable (accessed Aug. 20, 2014), *available at* http://www.twcsportsnet.com/; *SNY: SportsNet New York*, Time Warner Cable (accessed Aug. 20, 2014), *available at* http://www.twcmedia.com/TWC/CT/Network.aspx?id=3223.

imposed by Comcast on such programmers.[243] As explained in Section VII below, Comcast/TWC would have an even greater ability to impose such restrictions post-merger.

VI. EACH APPLICANT HAS, AND THE COMBINED COMPANY WILL HAVE ON A LARGER SCALE, THE INCENTIVE TO FORECLOSE RIVAL OTT VIDEO SERVICES

As discussed above,[244] Comcast and TWC are facing increased competition from OTT video providers as consumers show ever-increasing interest in video programming delivered over the Internet.[245] The increasing popularity of online video is only expected to continue in the future, provided the viewing experience of consumers is not compromised by any diminished quality of the underlying broadband service.[246] These incentives have not escaped the attention of the Commission or the Justice Department.[247] As the Justice Department has observed, Comcast is highly cognizant of the growing popularity of OTT services: "Many internal

---

[242] *See* Lynch Declaration ¶¶ 24-26.

[243] *Id.* ¶ 76.

[244] *See supra* Section III.

[245] *See* Sappington Declaration ¶ 28-29 (citing data showing increasing OVD adoption, accelerated rates of "cord-cutting").

[246] *Id.*

[247] For example, the Commission has noted that, "[b]y interfering with the transmission of third parties' Internet-based services or raising the cost of online delivery for particular edge providers, telephone and cable companies can make those services less attractive to subscribers in comparison to their own offerings." *Open Internet Order*, 25 FCC Rcd. at 17918 ¶ 22. Similarly, the DOJ has observed that "an inherent conflict exists between Comcast's provision of broadband services to its customers, who may use this service to view video programming provided by OVDs, and its desire to continue to sell them MVPD services." Competitive Impact Statement, United States v. Comcast Corp., General Electric Co., NBC Universal, Inc., 1:11-cv-00106, at 11 (D.D.C. Jan. 18, 2011).

documents reflect Comcast's assessment that [OTT video providers] are growing quickly and pose a competitive threat to traditional forms of video programming distribution."[248]

A. Comcast and TWC Have a Particularly Strong Incentive to Discriminate Against DISH's OTT Services

Just as DISH views "cord cutters" as a potential threat to its core satellite TV business and therefore has tried to improve its ability to serve consumers with online video products, [249] the combined Comcast/TWC will view OTT video providers, like Netflix, Amazon and DISH as competitive threats to the combined companies' core pay-TV service. But DISH's OTT services are *particularly* vulnerable to blocking and discrimination on the broadband pipe because they can entirely replace traditional pay-TV services.[250] If Comcast/TWC degraded the quality of a Netflix or Amazon subscriber, the customer could, at least, continue watching her cable TV service for linear video, such as sports, news, or broadcast network programming.[251] Today, the DISH World consumer ideally subscribes to a residential broadband service and then turns to the online-only DISH World service for nearly all of her television-viewing needs. This poses a substantial competitive threat to Comcast and TWC and presents a particularly attractive target for Comcast/TWC to degrade if this merger is consummated.[252] In addition, as stated above in Section III.A.1, online video functionality helps DISH to stem its MVPD customers' churn to competing services, making DISH an enticing target for that reason as well.[253]

---

[248] U.S. Department of Justice, "Competitive Impact Statement," submitted to the United States District Court for the District of Columbia in United States of America et al. v. Comcast Corp., General Electric Co., NBC Universal, Inc., Case 1:11-cv-00106, at 19 (Jan. 18, 2011).

[249] *See* Lynch Declaration ¶ 12.

[250] *Id* ¶ 54.

[251] *Id.* ¶ 55.

[252] *Id*.

[253] *See* Sappington Declaration ¶ 31.

A combined Comcast/TWC would therefore have an acute incentive to thwart the quality of DISH OTT services such as DISH World and the forthcoming domestic OTT service, which will include Disney and A+E programming.[254] This would have a substantial negative impact on DISH's ability to serve its customers and impose competitive pressure on Comcast.[255] Comcast/TWC could sufficiently degrade DISH's OTT service using, for example, one of the three "choke points" described above so that the consumer would be more easily persuaded to drop the DISH service in favor of the Comcast-provided linear video programming service.[256]

B. Comcast Has Previously Shown a Propensity to Discriminate When Given the Opportunity

The Applicants want the Commission to believe that they will not act on their incentive and ability to shut out video competitors by leveraging their control over broadband connections in an anti-competitive fashion. But too much is at stake here to "trust" the Applicants' claims of benevolence. In this regard, past is prologue. As Comcast's history shows, it has had no apparent qualms about engaging in anti-competitive conduct when the opportunity has arisen. There is little doubt that Comcast will do so again when foreclosure is even more profitable than today, and when its ability to engage in successful foreclosure is dramatically enlarged.

Specifically, Comcast's conduct with regard to its regional sports network ("RSN"), Comcast SportsNet Philadelphia ("CSN Philadelphia") is instructive. For over a decade, Comcast withheld CSN Philadelphia from its key competitors. After Comcast acquired interests in three of the four major Philadelphia-area professional sports franchises, Comcast replaced what were then two different RSNs carrying the local teams' games with a single RSN, CSN

[254] *See* Lynch Declaration ¶ 55.

[255] *Id.*

[256] *Id.*

Philadelphia.[257] At the same time, Comcast made another significant change. It took the programming that had previously been delivered by satellite—and therefore subject to the Commission's program access rules—and began to deliver that programming, as well as all new programming, terrestrially.[258] At that time, the Commission's rules only required that cable programming affiliated with an MVPD and delivered *by satellite* to cable headends be made available to other MVPDs on nondiscriminatory terms.[259] As a result of the switch, the programming formerly distributed by satellite no longer fell under the Commission's specific program access prohibition on discrimination.[260]

After the switch, Comcast licensed CSN Philadelphia to itself and other terrestrial MVPDs in the greater Philadelphia region (which were of negligible size at the time and with whom Comcast generally did not compete on any type of scale). But Comcast refused to license the network for carriage on either DISH or DIRECTV, the only two competitors capable of offering Comcast widespread competition across its service area.[261] In a letter to DISH, Comcast stated that CSN Philadelphia would not be made available to "any satellite-delivered service in the Philadelphia market."[262] Of course, terrestrial distribution did not preclude Comcast from making CSN Philadelphia available to DISH and DIRECTV at the time. It only removed the legal requirement for Comcast to do so.

---

[257] *See* EchoStar Commc'ns Corp. v. Comcast Corp., *Memorandum Opinion and Order*, 14 FCC Rcd. 2089, 2092-93 ¶¶ 8-9 (1999), *aff'd*, DirecTV, Inc. v. Comcast Corp., *Memorandum Opinion and Order*, 15 FCC Rcd. 22802 (2000), *aff'd*, *EchoStar Commc'ns Corp. v. FCC*, 292 F.3d 749 (D.C. Cir. 2002).

[258] *Id.* at 2093 ¶ 10.

[259] *Id.* at 2092 ¶ 8.

[260] *Id.* at 2102 ¶ 26.

[261] *Id.* at 2093 ¶ 10.

[262] *Id.* (referencing Letter from Philip Weinberg, General Counsel, Comcast-Spectacor to Michael Schwimmer, Vice President—Programming, EchoStar (Jan. 7, 1998)).

Comcast was not shy about the motivation behind this move. Shortly after switching to an all-terrestrial distribution system for CSN Philadelphia, Comcast's then-president, Brian Roberts, was interviewed by *Vanity Fair* magazine. As the magazine reports:

> Comcast's purchase of the Philadelphia Flyers, 76ers, and [American Hockey League] Phantoms inspired the company to start a regional sports network, which debuts this month as a basic cable-service channel. The question now is whether Roberts can capitalize on an apparent loophole in the 1996 Telecommunications Act in order to lock up the Philly area's sports programming**. "We don't like to use the words, 'corner the market,' because the government watches our behavior," Roberts says with a laugh. "Let's just say we've been able to do things before they're in vogue."**[263]

In short, as soon as it acquired the means to do so, Comcast seized an opportunity to shut its satellite competitors out of the Philadelphia market. And the foreclosure was crowned with success. Without access to programming for the town's major sports teams, DISH and DIRECTV were never able to penetrate the Philadelphia market to the same extent as other, substantially similar markets. In fact, the Commission found that "DBS penetration in Philadelphia is well below the 18 percent national penetration rate."[264] Consistent with that finding, an analysis conducted by the Commission in 2006 "concluded that Comcast's withholding of the terrestrially delivered Comcast SportsNet Philadelphia RSN from DBS operators caused the percentage of television households subscribing to DBS in Philadelphia to be 40 percent lower than what it otherwise would have been."[265]

---

[263] *The New Establishment: Brian Roberts*, Vanity Fair, 166 (Oct. 1997) (emphasis added).

[264] Implementation of the Cable Television Consumer Protection and Competition Act of 1992, *Report and Order*, CS Docket No. 01-290, 17 FCC Rcd. 12124, 12139 ¶ 33, FN.107 (2002).

[265] Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements, *First Report and Order*, MB Docket No. 07-198, 25 FCC Rcd. 746, 767 ¶ 32 (2010).

Comcast's continued intransigence in refusing to license CSN Philadelphia spurred the Commission to reevaluate its program access rules in the late 2000s. It was not until 2010, when the Commission ruled that exclusive contracts for terrestrially delivered programming could constitute "unfair acts" under Section 628(b) of the Communications Act,[266] and Comcast needed the Commission to rule favorably on its proposed joint venture with NBCU, that Comcast offered to entertain licensing discussions with satellite providers. But by then, the damage had been done.

VII. THE MERGED COMCAST/TWC WOULD HAVE FAR STRONGER ECONOMIC INCENTIVES AND ABILITIES TO DISCRIMINATE AGAINST RIVALS THAN DOES EITHER COMPANY PRE-MERGER

The Applicants try to dismiss competitive concerns about the transaction based on the fact that each, and particularly Comcast, has significant power already.[267] The Commission should reject this effort outright. In fact, the proposed merger would increase dramatically the new Comcast's incentive and ability to use the formidable weapons identified above to impede competition. That increase would be merger-specific, for a number of reasons. Among other things, the combined company would reap greater revenue from foreclosure than could either company standing alone, by exploiting nationwide OTT video providers' need for critical mass. While each of Comcast and TWC could today seriously injure an OTT video provider by withholding high-speed broadband access to a substantial share of that provider's customers, the combined company would likely be able to deliver a debilitating or lethal blow. Moreover, Comcast has stronger incentives to foreclose OTT video providers today than does TWC, and will be able to leverage the increased subscriber base in the anti-competitive service of these

[266] *Id.* at 783-84 ¶¶ 50-53; 47 U.S.C. § 548(b).

[267] *See, e.g.*, *Application* at 148 ("[T]he increase in Comcast's subscriber base is unlikely to have a meaningful impact on its bargaining power. With 22 million customers, Comcast is a significant MVPD in programming negotiations.").

incentives. Furthermore, far from keeping pace with the expected revenues, the costs of foreclosure would likely decrease. In other words, the new Comcast would reap greater profit, at less cost, than either entity standing alone.

Specifically, Professor Sappington explains that, by increasing Comcast's potential and actual customer base, the proposed merger would increase Comcast's incentive to sabotage OVDs in at least two respects.[268] *First*, the merger would increase the financial gain that Comcast could secure by reducing the perceived quality of rival video products, thereby increasing the relative attraction of Comcast's own video offerings.[269] *Second*, the merger would increase the value of uncompromised access to Comcast's broadband subscribers, and thereby increase the amount OVDs will effectively pay Comcast for such access.[270]

A. The Merger Would Increase Comcast's Financial Gain from Impeding the Delivery of Selected Packets and Withholding Key Programming

Professor Sappington opines that the financial gain Comcast secures by degrading the quality of rival video services becomes more pronounced as the geographic regions in which Comcast is authorized to compete for viewers expands.[271] The potential benefit becomes particularly pronounced as Comcast becomes authorized to operate in major, highly-populated, metropolitan areas such as New York and Los Angeles.[272] The proposed transaction would substantially increase Comcast's actual and potential subscriber base in many geographic regions, including New York and Los Angeles.[273] The proposed transaction would thereby

[268] *See* Sappington Declaration ¶ 46.

[269] *Id.*

[270] *Id.*

[271] *Id.* ¶ 47.

[272] *Id.*

[273] *Id.*

substantially increase Comcast's financial incentive to degrade the perceived quality of rival MVPD and OVD video services.[274]

Professor Sappington goes on to explain that a combined Comcast/TWC could anticipate a more pronounced financial return from sabotaging OVDs than would Comcast and TWC separately because of its essential status for any OTT video provider.[275] Unlike Comcast and TWC individually, the combined entity may have the potential to preclude the profitable operation of an OVD.[276] By compelling a rival OVD to cease operations, the combined Comcast/TWC can better ensure the continued patronage of its own MVPD subscribers and perhaps attract some of the defunct OVD's former customers.[277] Furthermore, in settings where Comcast withholds some of its extensive programming assets from rivals and sacrifices potential licensing revenue by doing so, this "investment" in rival sabotage generates a larger financial return for Comcast when the sabotage helps Comcast secure, retain, or charge higher prices to a larger group of subscribers.[278]

B. The Merger Would Increase Comcast's Financial Gain from Establishing a Credible Threat to Sabotage OTT Video Providers

Professor Sappington explains that Comcast's privileged position as the gatekeeper to many broadband customers enables it to extract from an OVD a fraction of the incremental profit the OVD derives from uncompromised access to Comcast's broadband customers.[279] This

[274] *Id*.

[275] *Id.* ¶ 48.

[276] *Id*.

[277] *Id*.

[278] *Id*.

[279] *Id* ¶ 49.

incremental profit increases with the number of broadband customers that Comcast serves.[280] In particular, once an ISP controls access to a sufficiently large fraction of high-speed broadband subscribers, the access the ISP controls becomes essential for the economic viability of the OVD product.[281]

By substantially expanding Comcast's control over access to high-speed broadband subscribers, the proposed transaction would substantially increase the incremental value of uncompromised access to Comcast's broadband customers.[282] The merger would thereby substantially increase the amount an OVD will pay for uncompromised access if it believes failure to pay the fee will result in compromised access. Consequently, the proposed transaction would increase Comcast's incentive to develop a credible threat to impose compromised access on OVDs in order to extract greater concessions from them for uncompromised access.[283]

As it relates specifically to DISH, Comcast/TWC will have the incentive to demand that DISH pay unreasonable fees to interconnect directly with Comcast/TWC's network, or could demand unreasonable fees for enhanced performance from the CDNs with whom DISH contracts in order to ensure adequate delivery of DISH's video content to the requesting end user. Because Comcast/TWC will control 50 percent of the high-speed broadband pipes as a result of this merger, DISH may have no choice but to pay whatever Comcast/TWC demands in order to survive. As explained above,[284] DISH plans to offer a new OTT service at a lower cost than traditional pay-TV service. Comcast/TWC will have the ability and a strong incentive to

[280] *Id.*

[281] *Id.*

[282] *Id.* ¶ 50.

[283] *Id.*

[284] *See supra* Section III.

dramatically raise the cost of doing business for DISH, which could prevent DISH from being able to offer competitive prices to the consumer and possibly threaten the success of the entire effort. As Professor Sappington notes, Comcast/TWC's ability to extract conditions or fees from DISH "would likely reduce the earnings that [DISH] can secure in the marketplace and thereby reduce [its] incentive to invest in developing innovative, compelling video services."[285]

Indeed, Comcast/TWC will be able to engage in anti-competitive behavior in very subtle ways that may escape regulatory scrutiny. As Professor Sappington observes, once Comcast/TWC establishes a reputation for foreclosing OTT video providers that do not capitulate to its demands, Comcast/TWC will be able to extract concessions for uncompromised access simply by threatening to impose compromised access if the OTT video provider in question fails to accede to Comcast's demands.[286] No actual sabotage is required if the OTT video provider is convinced that the sabotage will be implemented if it does not comply with Comcast/TWC's mandates.[287]

C. Comcast Would Export Its Stronger Anti-competitive Incentive to TWC's Regions

This increased incentive for sabotage is merger-specific for yet another reason: Comcast controls and offers a more extensive array of video services that compete with OTT services than does TWC.[288] OTT video providers threaten the extensive NBCU programming assets controlled by Comcast.[289] Consequently, as Professor Sappington observes, if Comcast is permitted to merge with TWC, the combined company (which will inherit the full array of

[285] Sappington Declaration ¶ 60.

[286] *Id.* ¶ 84.

[287] *Id*.

[288] *Id.* ¶ 51.

[289] *Id*.

Comcast's programming assets and online video services) will have a greater incentive than TWC presently does to sabotage rival OTT services in the present TWC service territory.[290]

D. The Costs of Foreclosure Would Decrease or Not "Scale" Up

Not only would the combined entity's anticipated revenues from foreclosure eclipse those of both companies standing alone, but at least some of the costs of the foreclosure would actually decrease. As Professor Sappington explains, diversion from Comcast to another broadband service would be even more unlikely than today because of limited benchmarking ability.[291] Today, a Comcast subscriber with a meaningful choice among high-speed broadband suppliers might consider switching ISPs after learning (from an acquaintance, perhaps) that uncompromised popular OVD programming is available on neighboring TWC systems.[292] But, the merger would eliminate this opportunity for learning, and thereby increase Comcast's incentive for sabotage by reducing the associated cost.[293]

Reputational cost is another case in point. The Applicants attempt to argue that foreclosure is unprofitable because it would compromise the user's experience with Comcast/TWC's broadband service and tarnish the combined company's image, thereby

[290] *Id.*

[291] *Id.* ¶ 52.

[292] *Id.*

[293] *Id.*

inducing many of its customers to select alternative suppliers of broadband services.[294] But in fact, the merger would make reputational risk comparatively less of a restraint. Comcast would likely expect anti-competitive foreclosure of rival video services to be greeted with roughly the same amount of negative publicity, whether it has 20 million or 30 million broadband subscribers. In other words, as Professor Sappington explains, much of the reputation cost does not scale with the merger.[295] Because consumers in the combined entity's footprint "have little or no meaningful choice among ISPs," any reputational harm that results from the sabotage is "unlikely to increase with its expanded scale as rapidly as Comcast's potential financial benefits from sabotage increase with the scale of its operations."[296]

E. Foreclosure Would Be Harder to Detect

In a related vein, Professor Sappington has determined that the merger would make Comcast/TWC's sabotage of rivals more difficult to detect and deter. A broadband ISP's sabotage of a particular OTT video provider often can be detected in part by comparing the OVD's experiences across different broadband ISPs. For example, if an OTT video provider regularly experiences serious problems accessing the broadband customers of one particular ISP, but never experiences corresponding problems with any other ISP, then one might reasonably question whether the first ISP might be intentionally limiting the OVD's access to its broadband

---

[294] *See Application* at Exhibit 6: Declaration of Mark A. Israel at 58 ¶ 83 asserting that "to prevent a particular edge provider's content from reaching its network, Comcast would potentially have to close off a substantial portion of the links into its network (including links to peers and CDNs). In doing so, Comcast would potentially deny its customers access to a substantial amount of content, thus significantly harming its broadband offering and inducing consumers to downgrade their broadband service or switch to other broadband options due to the loss of valuable content." Comcast further contends that "edge providers have multiple avenues for reaching Comcast's broadband subscribers, undermining Comcast's ability to deny access or degrade service to such providers" *Application* at 159.

[295] Sappington Declaration ¶ 52 n.58.

[296] *Id.*

customers. Because the proposed merger would reduce the number of broadband ISPs that are available to serve as benchmarks when assessing the legitimacy of Comcast's actions, the extent and nature of Comcast/TWC's sabotage may become more difficult to detect, prosecute, and deter.[297]

VIII. THE MERGER WOULD ELIMINATE ANY POTENTIAL OTT COMPETITION BETWEEN COMCAST AND TWC

The Commission should also consider the competitive harm that Comcast/TWC may inflict on the overall video market by eliminating TWC as a potential national OTT video competitor. Contrary to the Application's claims, TWC has a track record of innovating in the OTT space that will be diminished by the merger. As described in Section III.B.3 above, TWC has invested in a variety of partnerships supporting consumers to access the company's content through a number of OTT devices. As discussed above in Section III.B.2, these include a partnership with Roku that enables TWC customers to stream hundreds of live channels and access extensive on demand features. In addition, in April 2014, TWC became the first national cable company to reach an agreement with Fanhattan's Fan TV to distribute content through Fan TV's Internet-connected STB.[298]

Comcast's proposed acquisition threatens TWC's continued partnerships with innovative OTT devices because of Comcast's propensity to favor its own X1 player. For example, Comcast currently does not offer access to its content on third party players like the Roku, citing

[297] *Id.* ¶¶ 69-72. Professor Sappington also opines that by reducing the number of independent broadband suppliers, the proposed merger could facilitate informal supplier agreement about policies that effectively discipline "non-compliant" OVDs. Symmetric adoption of such policies can hinder regulatory efforts to detect OVD sabotage by further limiting useful benchmark comparisons. *Id.*

[298] *See* Lynch Declaration ¶ 58.

technical integration and customer service limitations.[299] As a result, it is unclear whether Roku owners with TWC subscriptions will still be able to access TWC's streaming services post-merger.[300] Similarly, the future of the TWC/Fan TV partnership is uncertain: "Even Gilles BianRosa, Fan TV's CEO, says he doesn't know how long Fan TV will still be supported by Time Warner if the merger goes through. 'You'll have to ask Comcast,' he says."[301]

Comcast's acquisition of TWC has also reportedly stalled talks between Apple and TWC.[302] In early 2014, reports indicated that Apple was negotiating with TWC to add video content to a planned upcoming release of a new Apple TV STB.[303] However, the pending transaction makes it "harder for Apple to negotiate a favorable deal for AppleTV given that Comcast has its own [STB], the X1, and would likely be uninterested in ceding any part of the Internet TV market over to a competitor."[304] Similarly, Netflix's attempt to bring its streaming

[299] *See* Timothy Stenovec, *Comcast-Time Warner Cable Deal May be Bad News for Roku Owners*, HuffPost Tech (Mar. 11, 2014), *available at* http://www.huffingtonpost.com/2014/03/11/comcast-time-warner-roku_n_4936989.html.

[300] *Id.* In response to questions about the continued accessibility of TWC content through the Roku player, TWC spokesman Rich Ruggiero explained that "[i]t's too early to speculate about specifics like platforms or apps." *Id.*

[301] Casey Newton, *Fan TV's New Set-Top-Box Will Connect With Time Warner Cable*, The Verge (Apr. 22, 2014), *available at* http://www.theverge.com/2014/4/22/5639826/fan-tvs-new-set-top-box-will-connect-with-time-warner-cable.

[302] *See* Connie Guglielmo, *Why the Apple TV Sequel, Expected in 2014, May Now Face A Tricky Debut*, Forbes (Feb. 13, 2014), *available at* http://www.forbes.com/sites/connieguglielmo/2014/02/13/why-the-appletv-sequel-expected-in-2014-may-now-face-a-tricky-debut/?partner=yahootix ("*Forbes: Apple TV Sequel*").

[303] *See* Adam Satariano and Edmund Lee, *Apple Said to Plan TV Box Amid Time Warner Cable Talks*, Bloomberg (Feb. 12, 2014), *available at* http://www.bloomberg.com/news/2014-02-12/apple-said-to-plan-new-set-top-box-amid-time-warner-cable-talks.html.

[304] *Forbes: Apple TV Sequel*.

video service to TWC STBs has also apparently been halted by the instant transaction.[305] While the two companies were in talks earlier this year, reports indicate that now "[t]he discussions are unlikely to progress before [TWC's] $45.2 billion acquisition by Comcast Corp. (CMCSA) is completed" noting that "Comcast, which isn't as far along in its own talks with Netflix, is focused on increasing film downloads and rentals with its new X1 [STB] platform."[306]

Comcast, too, has developed and deployed its own OTT distribution platform, with an extensive online library and live streaming TV channels.[307] Currently, the accessibility of Comcast's content on the X1 and successor platforms is limited to the scope of Comcast's footprint, but DISH is unaware of any technical reason why content availability cannot extend nationwide (though contractual restraints may artificially limit the service footprint).[308] The same is true for TWC—its many online video services have been limited to its cable footprint today but, again, there is no technical reason for such a limitation.[309] DISH believes that both Comcast and TWC are developing these OTT service offerings independently, and both appear to be in a position to launch full-fledged nationwide OTT services akin to DISH's forthcoming

[305] *See* Cliff Edwards and Edumund Lee, *Netflix Talks for Time Warner Cable Carriage Said to Slow*, Bloomberg (Feb. 18, 2014), *available at* http://www.bloomberg.com/news/2014-02-17/netflix-talks-for-time-warner-cable-carriage-said-to-slow.html.

[306] *Id.*

[307] *See* Lynch Declaration ¶ 57. Comcast provides an online library that contains more than 300,000 streaming choices, including 50 live television channels available at XfinityTV.com. Comcast customers can access these services through the company's X1 and successor X2 platforms, which provide customers with "interactive TV functionality" that rely on a broadband connection. These platforms offer integrated search (across TV, Xfinity On Demand, and DVR), access to the Internet and apps, cross-product integration (including access to voicemail from the TV), and an X1 remote application that allows customers to use their smart phones and tables to control their TVs. *See Application* at 77-79.

[308] *See* Lynch Declaration ¶ 57.

[309] *Id.* ¶ 58.

domestic OTT service.[310] In this potential scenario, even subscribers to other broadband networks could access the Comcast or TWC OTT services.[311]

If Comcast and TWC are indeed on independent trajectories toward offering nationally distributed OTT services outside their respective cable footprints, then TWC would one day compete head-to-head with Comcast. From the consumer's standpoint, this would be a positive. If the merger is approved, however, the combined companies would offer only a single OTT service, or perhaps forego altogether launching a nationwide OTT service, thus depriving consumers of important competitive choices.[312]

Moreover, as stand-alone companies providing nationwide OTT services, both Comcast and TWC would have an incentive not to degrade (or at least less of an incentive to degrade) other OTT services that are affiliated with broadband access providers for fear of retribution on the aggrieved broadband operator's network.[313] This will not be the case when the companies combine. The significant market share in residential broadband held by the merged company would enable it to discriminate with impunity against competing OTT services. Thus, the merger not only would deprive consumers of competition in the OTT space by eliminating a potential provider and reducing the competitiveness of others, it would reduce the incentive of each company standing alone to avoid discriminatory behavior.[314]

Professor Sappington agrees, and explains that the economic incentives for each company launching their own OTT services are significantly altered by the merger. He opines that "[i]n

[310] *Id.* ¶ 59.

[311] *Id*.

[312] *Id.*; Sappington Declaration ¶ 76.

[313] *See* Lynch Declaration ¶ 60.

[314] *Id*.

light of the growing popularity of [OTT] services and the fact that complementary [OTT] services can reduce the churn of MVPD customers, TWC likely has substantial incentive to develop [OTT] services and market them in Comcast's cable territories."[315] In fact, the merger may not only snuff out the possibility of TWC innovating into OTT services outside its cable footprint, it may stop Comcast from undertaking such an endeavor itself: Professor Sappington explains that a "single, combined entity would have less incentive than two independent entities to develop and market a high quality [OTT] service."[316] If TWC were operating on its own and still faced Comcast as a competitor, TWC would certainly explore launching OTT services and targeting them to broadband subscribers in Comcast's home cable territory in an effort to cut into Comcast's cable TV subscriber base.[317] In contrast, after merging with Comcast, TWC would be "deeply concerned about the loss of MVPD customers in the present Comcast cable territories" and this would "reduce TWC's incentive to develop and launch a successful [OTT] service. For analogous reasons, the merger also would reduce Comcast's incentive to develop and market [OTT] services."[318]

IX. THE MERGER WOULD SUBSTANTIALLY INCREASE PROGRAMMING FORECLOSURE RISKS AND RAISE THE COSTS OF PROGRAMMING FOR COMPETITORS

A. The Merger Would Make it Profitable for Comcast/TWC to Withhold Its Own Affiliated Programming from Competitors

Making key programming available on less favorable terms and conditions can also force rival OTT services and MVPDs to increase the prices they charge to their subscribers, and thereby increase the relative attractiveness of Comcast/TWC's video services. In the case where

[315] Sappington Declaration ¶ 73 (citation omitted).

[316] *Id.* ¶ 75.

[317] *Id.* ¶¶ 73-76.

[318] *Id.* ¶ 75.

Comcast actually withholds programming content from rivals and sacrifices potential licensing revenue by doing so, this "investment" in rival foreclosure generates a larger financial return for Comcast when the sabotage helps Comcast secure, retain, or charge higher prices to a larger group of subscribers.[319]

To substantiate the fear of anti-competitive foreclosure from the proposed merger, one need look no further than Comcast's own assertions in the NBCU merger proceeding. To defend that acquisition, Comcast argued that it would not foreclose its competitors from popular NBCU programming because it would have to share the spoils with other operators, and primarily with one other such operator: TWC. Comcast's economists for that transaction, Professors Mark Israel and Michael Katz, opined that because many key Designated Market Areas ("DMAs") included third party cable operators, Comcast could expect to scoop up only a fraction of any subscribers diverted from the foreclosed competitor.[320] In fact, Professors Katz and Israel highlighted New York City, Los Angles, and Dallas as markets that showed the folly of implementing a foreclosure strategy.[321] In the words of Comcast's economists:

> Comcast has a limited geographic footprint, both in terms of the DMAs in which it has a presence and the fraction of homes passed within a given DMA. In many of the relevant geographic areas, Comcast lacks even the potential to capture all of the subscribers who would choose to switch away from a rival MVPD following foreclosure. As one clear example, suppose hypothetically that the joint venture were to deny DirecTV the right to retransmit programming from the NBC O&O station in the New York City DMA. Following this action, DirecTV subscribers throughout the New York DMA would lose access to the O&O's programming on

[319] *Id.* ¶¶ 47-48.

[320] *See* Letter from Michael H. Hammer, Comcast, to Marlene H. Dortch, FCC, MB Docket No. 10-56, Enclosure: Mark Israel and Michael L. Katz, *Application of the Commission Staff Model of Vertical Foreclosure to the Proposed Comcast-NBCU Transaction*, 27-31 ¶¶ 49-55 (Mar. 5, 2010).

[321] *Id.* at 27-28 ¶ 50.

> DirecTV and, thus, would potentially switch to another MVPD to obtain this access. However, Comcast Cable would not be an option for most consumers in the New York DMA. Comcast has only a limited geographic footprint within the New York DMA and is simply not available to the majority of consumers. Hence, for the majority of consumers, the joint venture would suffer the costs of foreclosure (the lost advertising revenue and retransmission consent fees) without having even the possibility of enjoying the benefits of foreclosure for the majority of consumers in the DMA. In other words, Comcast could at best capture a small subset of the rival MVPD subscribers induced to switch, so that the primary effect of the sacrifice of NBC profits would be to benefit other MVPDs, including other cable providers.[322]

But the proposed merger would eliminate those prior restraints on Comcast. Of course, TWC was (and is) the third party competitor whose acquisition of subscribers in New York, Los Angeles, and Dallas would have made Comcast's foreclosure strategy unprofitable in those markets. TWC holds the Manhattan cable franchise and is the leading cable operator in the New York DMA, a DMA where NBCU has an owned and operated ("O&O") local broadcast station. TWC is also the leading cable operator for both the Los Angeles and Dallas DMAs, again markets where NBCU has an O&O local broadcast station. TWC also operates important RSNs, SportsNet and SportsNet LA, in the southern California market.

Significantly, the Applicants do not explain why Comcast's prior rationale is not fatal for its current public interest analysis. Professors Israel and Katz appear not to have been asked to replicate their analysis from 2010.[323] Instead, Professor Israel opines on broadband competition, and Professor Katz is absent from the proceeding altogether. The Commission should use the Israel/Katz diversion model from 2010 and adapt it to reflect the acquisition of TWC in order to estimate this merger's likely programming foreclosure effects.

---

[322] *Id*.

[323] *Cf. Application* at Exhibit 5: Gregory Rosston and Michael Topper, *An Economic Analysis of the Proposed Comcast-Time Warner Cable Transaction* at 63-88 ¶¶ 162-235.

B. The Merger Would Foreclose Access to Third Party Online Rights and Raise Other MVPDs' Third Party Programming Costs

As explained in Section V.D., the merger also would give Comcast/TWC significant additional leverage when negotiating online rights with third party programmers. In particular, the combined Comcast/TWC—with its much greater scale than any other pay-TV provider—would also possess even more leverage than the two companies have now to: (a) acquire the most robust OTT distribution rights from third-party programmers in order to increase the appeal of its own video platform; and (b) restrict the ability of third-party programmers to grant online rights to competing OTT services, like DISH's.[324]

Professor Sappington explains that when Comcast's subscriber base increases to include former TWC subscribers, Comcast "could employ its increased bargaining power to encourage programmers to withhold their programming from [OTT providers] and rival MVPDs or make the programming available to these rivals only on relatively unfavorable terms and conditions."[325] This strategy would directly benefit Comcast/TWC because, by restricting the quality and variety of programming available on rival OTT video providers' platforms, Comcast/TWC will be able to charge higher prices for its services, to the detriment of consumers and competition.[326]

In addition to encouraging the merged company to withhold the programming that it controls from competitors, the merger may raise the costs of Comcast/TWC's competitors in another important way. Comcast/TWC will likely be able to extract concessions from large, third party programmers and those programmers will, in turn, seek to recoup costs from smaller

[324] *See* Lynch Declaration ¶ 76.

[325] Sappington Declaration ¶ 63.

[326] *Id.*

MVPDs. Today, Comcast's position as a buyer of third party programming is significant. After the merger, Comcast/TWC's position would be unprecedented, with the merged entity controlling access to 30 million television households, which is approximately one third of total MVPD households in the United States.[327] This will make Comcast/TWC a "must have" distributor for even the largest third party sellers of programming.

There is no doubt that the large programming conglomerates enjoy significant clout in their negotiations with MVPDs. But with the new Comcast, the conglomerates would encounter an entity that will be at least their equal, probably even stronger than they are, and certainly much stronger than any other MVPD. The Applicants try to dismiss the import of this buying power increase by pointing out that Comcast and TWC do not compete for subscribers today, and that Comcast has plenty of power already.[328] The problem faced by programmers, however, will not be that they now have two paths to the same consumer, and post-merger they will have one. Rather, the problem is that they will have one less path to accumulating the number of viewing households they desire. The resulting increase puts Comcast/TWC in a vastly different

[327] See Letter from Kathryn A. Zachem, Comcast Corp and Steven Teplitz, Time Warner Cable Inc., to Marlene H. Dortch, FCC, MB Docket No. 14-57, p. 3 (Jun. 5, 2014) (stating after the merger and divestiture transactions the combined company will serve approximately 29 percent of MVPD subscribers nationwide). DIRECTV, the second-largest MVPD at 20.2 million subscribers, currently trails Comcast's subscribership by just over 1.6 million subscribers, but that figure will grow dramatically to over 29 million post-transaction. *DIRECTV Announces Second Quarter 2014 Results*, DIRECTV, p. 4 (Jul. 31, 2014), *available at* http://investor.directv.com/files/doc_news/earnings_releases/2014/Press%20Release%206.30.14%20-%20FINAL.pdf. DISH, the third-largest MVPD at 14.1 million subscribers, will have fewer than half the subscribers of the resulting behemoth. *Quarterly Report (Form 10-Q)*, DISH Network Corporation, p. 4 (Aug. 6, 2014), *available at* http://dish.client.shareholder.com/secfiling.cfm?filingID=1104659-14-57137.

[328] *See Application* at 147.

and improved bargaining position than Comcast enjoys today, and poses a very real concern for third party programmers.[329]

The combined Comcast/TWC's leverage over programmers may squeeze their margins, as Comcast/TWC uses its control over access to almost one-third of the nation's MVPD households to push down the prices it pays for programming. This is a standard monopsony effect. Nobel Laureate Professor Paul Krugman specifically predicted it for this transaction.[330] But this accumulation of buying power may also have an additional effect: squeezing the balloon at one end will cause it to inflate at the other. Facing decreasing revenues from Comcast/TWC, the programmers may then turn to smaller MVPDs and demand even steeper price increases in an effort to recoup their lost margins. If they do not, they will not make the revenue growth that analysts and investors expect.

This potential price shifting is likely to be compounded by what would be a post-merger strengthening of Comcast's already powerful ability to negotiate Most Favored Nation ("MFN")

[329] *See* David Gelles, *With a Bigger Comcast May Come More Deals*, The New York Times, (Feb. 14, 2014), *available at* http://dealbook.nytimes.com/2014/02/14/a-bigger-comcast-may-beget-more-deals/?ref=business ("'There is a sense of worry among content providers,' said Michael Nathanson, partner at Moffett-Nathanson Research, which specializes in media analysis. 'They'll never say it publicly, because Comcast is their biggest partner and there is no reason to go out and get people riled up. But privately there is concern.'").

[330] *See* Paul Krugman, *Monopsony Begets Monopoly, and Vice Versa*, The New York Times Blog (Feb. 15, 2014), *available at* http://krugman.blogs.nytimes.com/2014/02/15/monoposony-begets-monopoly-and-vice-versa/ ("Comcast's size gives it monopsony as well as monopoly power – it is able to extract far more favorable deals from content providers than smaller rivals. And if it's allowed to acquire Time Warner, it will be even more advantaged"); Horizontal Merger Guidelines § 12 (explaining "[m]ergers of competing buyers can enhance market power on the buying side of the market" and if suppliers do not have numerous attractive outlets for their goods, "the Agencies may conclude the merger of competing buyers is likely to lessen competition in a manner harmful to sellers"). At 29 percent, this transaction will give Comcast the size that has been found sufficient to undertake the kind of anti-competitive monopsonistic actions that must be guarded against. *See* In the Matter of Toys "R" Us, *Opinion*, FTC Docket No. 9278, pp. 1-6, 69-72 (Oct. 14, 1998) (finding that a firm with approximately 20 percent of the national purchasing power and about 30 percent of the market share in the localities it serves gives it the market power necessary to "induce [sellers] to bend to its will").

protections in its programming agreements.[331] The larger the market player, the greater its ability to extract such protections in its agreements. It already appears that Comcast may use this transaction to pursue a strategy of placing "MFN plus" provisions in its contracts (an MFN plus clause guarantees a price that is some amount below the next best price the programmer provides any other MVPD).[332] The results of these types of clauses for rival MVPDS may be even higher programming prices and the inability to compete on a level playing field.

X. BEHAVIORAL CONDITIONS HAVE FAILED IN THE PAST AND NO CONDITIONS WOULD REMEDY THE SERIOUS COMPETITIVE HARMS POSED BY THE PROPOSED MERGER

A. Behavioral Conditions Are Often Easy to Misinterpret and Difficult to Enforce

In addition to claiming that there are hardly any anti-competitive effects from the transaction in need of a remedy in the first place, the Applicants argue that such effects will be cured by simply extending to the merged entity the various behavioral conditions and commitments originally made by Comcast to garner approval for its acquisition of NBCU.[333] Those conditions, however, are wholly inadequate to alleviate the harms that will be caused if this merger is approved. Nor are there additional conditions or divestitures that could alleviate these harms, particularly with respect to Comcast/TWC's incentive and ability to use the three "choke points" on its broadband pipe to stifle competing OTT services.

---

[331] *See* Anousha Sakoui, *Lions Gate's Burns Criticizes Most-Favored Nation Deals*, Bloomberg.com (Apr. 30, 2014), http://www.bloomberg.com/news/2014-04-30/lions-gate-s-burns-criticizes-most-favored-nation-deals.html.

[332] *See* Testimony of Allen P. Grunes, "Competition in the Video and Broadband Markets: The Proposed Merger between Comcast and Time Warner Cable," House Committee on the Judiciary, Subcommittee on Regulatory Reform, Commercial and Antitrust Law 113th Congress (May 8, 2014) ("The Antitrust Division has challenged the use of so-called 'most favored nation-plus' ('MFN-plus') pricing by dominant firms in the recent past. Again, this is not a novel theory and the facts presented in this merger suggest that it is an issue here as well.").

[333] *See Application* at 106-20.

While conduct conditions may be an adequate cure for certain, limited anti-competitive effects, their value becomes more questionable as the anti-competitive effects of a transaction increase. Some academic scholars believe that such remedies fail to achieve their goals of remediating anti-competitive incentives. In fact, a recent retrospective study of merger outcomes suggests that post-merger price increases are more likely to persist in the face of behavioral conditions, as compared to when structural remedies are employed.[334] In light of such concerns, both the Justice Department and the FTC prefer structural relief and disfavor behavioral remedies in the context of horizontal mergers.[335] The Supreme Court has endorsed this preference as the "most effective" way to address the competitive implications of certain mergers.[336] Conditions relating to broadband networks are of particularly doubtful effect, due to the challenges inherent in policing practices that can cause the performance of such a network to deteriorate.[337] Professor Sappington agrees, noting that regulatory rules such as the 2010 Open

[334] *See* John Kwoka, *Does Merger Control Work? A Retrospective on U.S. Enforcement Actions and Merger Outcomes*, 78 ANTITRUST L. J. 640 (2013).

[335] *See Antitrust Division Policy Guide to Merger Remedies*, Department of Justice, p. 5 (June 2011) ("the Division will pursue a divestiture remedy in the vast majority of cases involving horizontal mergers"); *Statement of the Bureau of Competition of the Federal Trade Commission, Negotiating Merger Remedies*, Federal Trade Commission, p. 4 (Jan. 2012) (anti-competitive horizontal mergers are most often remedied by a divestiture).

[336] *United States v. E.I. du Pont de Nemours & Co*., 366 U.S. 316, 326 (1961).

[337] The MCI/Worldcom broadband condition is a case in point. There MCI was required to divest its Internet backbone and retail services business as a condition of its acquisition by Worldcom, and sold that business to Cable & Wireless as a result. See Applications for Transfer of Control of MCI Communications Corp. to WorldCom, Inc., *Memorandum Opinion and Order*, 13 FCC Rcd. 18025, 18027, 18110-11 ¶¶ 1, 151 (1998); *see also* DOJ, Press Release, "Justice Department Clears WorldCom/MCI Merger After MCI Agrees to Sell its Internet Business" (Jul. 15, 1998). But Cable & Wireless later filed suit against MCI, alleging that MCI had "failed to effectively transfer MCI's Internet customer[] base, impeded Cable & Wireless's ability to operate the Internet business and targeted former MCI Internet customers . . . ." *See Business: The Company File; Internet Deal in Court*, BBC Online Network (Apr. 1, 1999), *available at* http://news.bbc.co.uk/2/hi/business/309475.stm; *see also* Peter S. Goodman, *MCI to Settle British Firm's Suit*, Washington Post, E02 (Mar. 2, 2000) (noting that Cable & Wireless

Internet rules "typically are unable to achieve their goals when relevant incentives are fundamentally misaligned, as they would be in the present instance if the merger were approved."[338] Professor Sappington also observes that regulatory requirements "typically cannot preclude undesirable behavior when industry suppliers anticipate substantial financial gain from such behavior."[339] And, he cautions, "it is extremely difficult, if not impossible, to anticipate all relevant forms of undesirable behavior that might arise and to specify detailed, comprehensive rules that will preclude such behavior."[340]

If conditions may be beneficial for a merger with limited anti-competitive effects, and questionable for a merger with pervasive ones, they are demonstrably insufficient here. This is an unusual case where there is no need to speculate about the future. Since the Applicants request the extension to the proposed transaction of preexisting conditions, the Commission can and should look at the record, which demonstrates that these conditions have been unsuccessful at constraining Comcast's behavior.

Consider two successful claimants under the Comcast/NBCU merger conditions: Bloomberg and Project Concord. Even though both ultimately prevailed in enforcing merger conditions designed to protect unaffiliated programmers and distributors, the process for each took close to *3 years* and *1.5 years*, respectively, from start to finish, in part due to Comcast's forceful advocacy, which included arguments that the conditions should be construed narrowly

---

alleged that MCI "effectively sabotaged its old business by withholding critical service staff and denying access to billing records"). The dispute ultimately ended when MCI settled with Cable & Wireless for $200 million in March 2000. See Rebecca Blumenstein, *MCI WorldCom to Pay Cable & Wireless $200 Million to Settle Internet Dispute*, Wall Street Journal (Mar. 2, 2000), *available at* http://online.wsj.com/news/articles/SB951922751787792103.

[338] Sappington Declaration ¶ 80.

[339] *Id.* ¶ 81.

[340] *Id.*

and that broad interpretations are unconstitutional.[341] These delays are particularly troubling for a number of reasons. *First*, they consumed a large portion of the total condition lifetime of 7 years. *Second*, this type of delay is especially prejudicial in light of the dangers of temporary foreclosure—reinstatement of the access that the competitor did not have for an extended period of time does little or nothing to undo the harm incurred during the period of foreclosure. Three years is a long time for a dynamic market to continue to evolve while an independent news channel is relegated to unfavorable channel placement, and 17 months is close to eternity for a nascent OTT video provider that lacks access to "must have" programming.[342] *Third*, the expense and duration of the dispute resolution process may well have served as a deterrent for other similarly aggrieved parties to resort to that process, and will likely serve as such a deterrent in the future.

B. Comcast Fought the News "Neighborhooding" Condition in the NBCU Merger for Nearly Three Years

The so-called news "neighborhooding" condition imposed in the Comcast/NBCU merger proceeding was simple—certainly simpler than the broadband related conditions also imposed in that proceeding: "If Comcast now or in the future carries news and/or business news channels in a neighborhood, defined as placing a significant number or percentage of news and/or business news channels substantially adjacent to one another in a system's channel lineup, Comcast must carry all independent news and business news channels in that neighborhood."[343]

---

[341] This is in addition to costing hundreds—if not thousands—of hours of personnel and attorney time.

[342] The Commission has found that temporary foreclosure can result in loss of market share for periods of time long in excess of the period of foreclosure itself. *See, e.g.*, General Motors Corp. and Hughes Electronics Corp. and News Corp. For Authority to Transfer Control, *Memorandum Opinion and Order*, 19 FCC Rcd. 473, 546 ¶ 159 (2004).

[343] *Comcast-NBUC Order*, 26 FCC Rcd. at 4358: Appendix A (2011).

This condition was intended to address concerns that Comcast would favor its own NBCU programming over that of NBCU's competitors, including Bloomberg Television ("Bloomberg"). Bloomberg is a 24-hour business and financial news television network that competes against CNBC and MSNBC, both news channels that were part of the NBCU portfolio that Comcast acquired in the Comcast/NBCU transaction. As the Commission recognized in the *Comcast/NBCU Merger Order*, "Bloomberg [] is likely a close substitute for Comcast-NBCU's CNBC and CNBC world networks."[344]

When Bloomberg asked Comcast in March 2011 to be included in the news neighborhoods on certain Comcast headends, it began what would turn out to be a nearly three-year ordeal. That endeavor involved several months of failed commercial negotiations, a complaint to the Media Bureau and a subsequent ruling by staff,[345] fact-finding efforts by the parties and a further clarification order by staff,[346] review by the full Commission after both parties filed applications for review of the staff orders,[347] and finally appeals to the U.S. Court of Appeals for the D.C. Circuit (again by both parties, as each were unhappy with some aspect of the full Commission order).[348]

In the end, the apparent simplicity of the news neighborhooding condition proved elusive. Comcast challenged the meaning and permissible scope of almost every phrase in the condition,

---

[344] *Id.* at 4286-87 ¶ 119.

[345] *See* Bloomberg L.P. v. Comcast Cable Communications, *Memorandum Opinion and Order*, 27 FCC Rcd. 4891 (2012) ("*Bloomberg Bureau Order*").

[346] *See* Bloomberg L.P. v. Comcast Cable Communications, *Memorandum Opinion and Order*, 27 FCC Rcd. 9488 (2012) ("*Bloomberg Clarification Order*").

[347] *See* Bloomberg L.P. v. Comcast Cable Communications, *Memorandum Opinion and Order*, 28 FCC Rcd. 14346 (2013) ("*Bloomberg Commission Order*").

[348] *See* Complaint, Bloomberg L.P. v. FCC, No. 13-3788 (2d. Cir. Oct. 7, 2013); Complaint, Comcast Cable Communications, LLC v. FCC, No. 13-4407 (2d. Cir. Nov. 8, 2013).

including whether the condition applied to news neighborhoods existing at the time of the merger (the Commission ruled that it did),[349] whether a clustering of four news channels was adequate to form a neighborhood (the Commission found that it was), and whether the obligation applies to all news neighborhoods, or only one neighborhood on systems with multiple neighborhoods (the Commission found that SD and HD neighborhoods are distinct).[350] Notably, Comcast even asserted that the staff's interpretation of the condition was a violation of its First Amendment right to exercise editorial discretion, an assertion that the Commission rejected.[351]

Ultimately, Bloomberg and Comcast came to an agreement on carriage conditions amenable to both parties and withdrew their appeals to the court.[352] But this agreement came more than three years into a merger condition that was slated to last for a total of seven. And throughout this time, Bloomberg lacked the channel placement that the condition was meant to ensure.

C. Comcast Has Attempted to Avoid the Online Video Program Access Conditions Imposed in the NBCU Merger

The Project Concord case demonstrates even more starkly the futility of using the Comcast/NBCU conditions to cure Comcast's anti-competitive behavior. Project Concord did not even survive to avail itself of its success at enforcing the Comcast/NBCU benchmarking condition.

The benchmarking condition requires Comcast/NBCU to provide, among other things, "a Qualified OVD with Online Video Programming that is comparable to the Online Video

[349] *Bloomberg Commission Order*, 28 FCC Rcd. 14360-61 ¶¶ 30-31.

[350] *Id.* at 14346 ¶ 1.

[351] *Id.* at 14350-51 ¶ 7.

[352] *See* Bloomberg L.P. & Comcast Cable Communications, LLC, *Stipulation of Voluntary Dismissal of Consolidated Appeals with Prejudice*, Nos. 13-3788, 13-4407 (2d Cir. Mar. 25, 2014).

Programming the OVD has received from a qualifying peer programmer.[353] If discussions between NBCU and the OVD fail to produce an acceptable agreement pursuant to this condition, then the OVD can avail itself of arbitration under the *Comcast/NBCU Order*.[354] And if either party disagrees with the decision of the arbitrator, it can appeal the decision to the Commission.[355]

Project Concord was a nascent OVD service that sought to provide first-run movies and same-season television shows to viewers on a VOD and subscription basis. After signing a deal to distribute content from a third party studio, Project Concord sought to use its agreement with that studio to get NBCU to sign a similar distribution deal with Project Concord pursuant to the benchmarking condition.[356] But NBCU disagreed that Project Concord was a qualified OVD eligible to assert the benchmark condition and refused to engage in substantive commercial discussions with the OVD.[357]

Project Concord was forced to request arbitration under the benchmarking condition.[358] In that proceeding, Comcast argued that Project Concord was ineligible to assert rights under the benchmark condition, and further disagreed with Project Concord as to what constituted the scope of comparable programming, to what extent NBCU could assert a contractual impediment defense to making such programming available, and what the actual, if any, terms of carriage

---

[353] *See* Project Concord v. NBCUniversal Media, LLC, *Order on Review*, 27 FCC Rcd 15109, 15111 ¶ 2 (2012) ("*Project Concord Order*").

[354] *Id.* at 15112-13 ¶¶ 3-5.

[355] *Id.*

[356] *Id*. at 15114 ¶ 8.

[357] *See* Project Concord, Inc., *Opposition to NBCUniversal Media Petition for De Novo Review*, at 5-6 (filed Aug. 10, 2012) ("*Project Concord Opposition*"), *filed in Project Concord v. NBCUniversal Media, LLC, Order on Review*, 27 FCC Rcd. 15109 (2012).

[358] *Id.*; *see also Project Concord Order*, 27 FCC Rcd. at 15114 ¶ 8.

would be.[359] In light of the breadth of the issues Comcast raised, the arbitration had to take place in two stages and involved voluminous discovery.[360] Ultimately, eight months after Project Concord filed for arbitration, the arbitrator decided for Project Concord on every substantive issue.[361] NBCU immediately sought *de novo* review of the arbitrator's decision with the Media Bureau.[362] Five months later, and a full 17 months after Project Concord sought to access NBCU programming, the Media Bureau issued its order on review. While the Media Bureau agreed with NBCU that certain contractual limitations worked to excuse NBCU from making some programming available in certain contexts,[363] the Bureau rejected NBCU's contention that films less than one year from their theatrical release date were outside the scope of "comparable programming" under the condition. The Bureau found "nothing in the *Comcast/NBCU Order* or the record of the proceeding to support" to support NBCU's contention.[364] But by the time the Media Bureau's order was released, Project Concord had apparently ceased to exist as a going concern.

D. Comcast Honored the Standalone Broadband Condition Only After an FCC Consent Decree

Not only have third parties had to bring claims against Comcast for failing to abide by the Comcast/NBCU merger conditions, but the Commission has initiated investigations into Comcast's conduct after complaints of noncompliance by consumers. For example, in approving Comcast's acquisition of NBCU, the Commission recognized that post-merger, Comcast's ability

[359] *Project Concord Order*, 27 FCC Rcd. at 15114 ¶ 9.

[360] *Id.*

[361] *Id.* at 15115-16 ¶¶ 10-11.

[362] *Id.* at 15117 ¶ 13.

[363] *Id.* at 15117-18 ¶¶ 14-15.

[364] *Id.* at 15120-21 ¶ 20.

to harm competition by bundling MVPD and broadband services would be enhanced.[365] The Commission identified concerns with Comcast's post-transaction incentives to require customers interested in purchasing Comcast broadband services to also purchase other bundled services from the company, to the detriment of competing video providers. The Commission explained: "Comcast could, for example, hinder competition from DBS and OVD providers, both of which provide video over a third-party's broadband network, by requiring a cable subscription in order to receive broadband services or by charging an excessive price for standalone broadband services."[366] To potentially remedy this threat to competition, the Commission imposed a condition requiring Comcast to provide, at a minimum, standalone broadband service "of at least 6 Mbps down at a price no greater than $49.95 for three years."[367] Among other justifications, the Commission reasoned that a standalone broadband requirement would be minimally disruptive to Comcast, given that the company already offered such an option.[368]

Pursuant to the condition, Comcast began offering a 6 Mbps down/$49.95 per month standalone broadband service package (known as "Performance Starter") in February 2011. However, "[i]n the weeks following Comcast's launch of the Performance Starter service pursuant to the *Comcast-NBCU Order*, the Bureau received information raising potential concerns about the extent of Comcast's compliance with the Condition."[369] The Commission initiated an investigation relating to Comcast's compliance.[370] After considering the

[365] *See Comcast/NBCU Order*, 26 FCC Rcd at 4278-49 ¶¶ 101-103.

[366] *Id.* at 4279 ¶ 102.

[367] *Id*. at 4362-63, Appendix A at D.

[368] *Id*. at 4279 ¶ 103.

[369] *See* In the Matter of Comcast Corporation, *Order*, 27 FCC Rcd. 6983, 6987 ¶ 5 (2012).

[370] *Id*. Specifically, the Commission investigated the following: "whether all Customer Service Representatives were providing information concerning the Performance Starter service in

"requirements and objectives of the Condition, the information submitted by Comcast, its efforts to comply with the Condition, and its full cooperation with the Investigation," the Commission nevertheless "continued to have concerns regarding the extent of Comcast's compliance with the Condition."[371] Thereafter, the Enforcement Bureau entered into a Consent Decree with Comcast that required the company to continue to offer its "Performance Starter" service until February 21, 2015—an additional year beyond the requirement imposed by the *Comcast/NBCU Order*. In a sign of the significant nature of the investigation and outcome, the Commission explained that "[t]his is the first consent decree in FCC history extending a merger condition."[372] But for the Commission's intervention, Comcast may well have failed entirely to honor the condition's intent. And it took nearly a year and a half to resolve the investigation, during which time consumers were harmed.

E. Conditions to Protect Online Video Would Be Too Complex to Design and Enforce

Recent developments regarding the question of who is responsible for Internet congestion and degradation in performance of online video should give the Commission serious doubt about whether behavioral conditions could ever be sufficient to address subtle and complex technical questions. A significant recent example is Netflix's fight with Comcast over interconnection issues. During the first half of 2014, Netflix engaged in a high-profile dispute with Comcast

---

responding to consumers inquiring about Internet service options; whether Comcast had omitted the Performance Starter service on some Rate Cards distributed after the initiation of that service; and whether Comcast's website readily enabled existing (as opposed to new) customers to find information about the Performance Starter service." *Id.*

[371] *Id.* at 6989 ¶ 10.

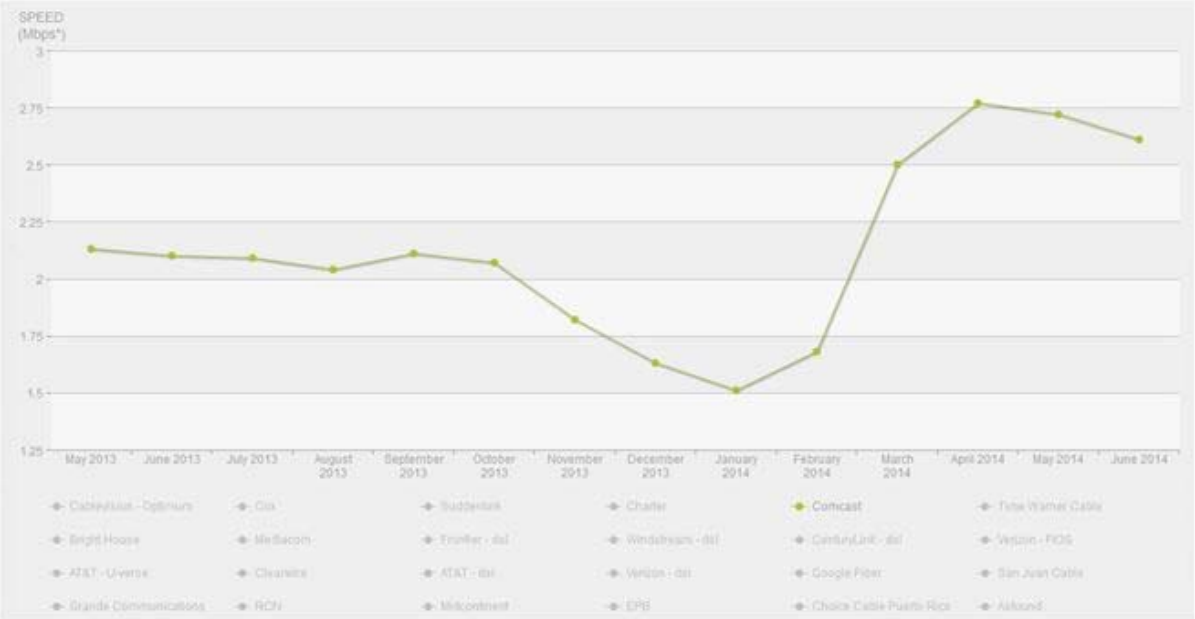
[372] *See FCC Resolves Investigation of Comcast-NBCU Broadband-Related Merger Conditions; Ensures Consumer Access to Reasonably Priced Broadband Internet Service*, Federal Communications Commission, p.2 (June 2012), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-314879A1.pdf.

regarding an alleged drop in performance in Netflix services to Comcast's broadband customers. According to the Netflix, "Netflix agreed to pay Comcast for direct interconnection to reverse an unacceptable decline in our members' video experience on the Comcast network. These members were experiencing poor streaming quality because Comcast allowed its links to Internet transit providers like Level 3, XO, Cogent, and Tata to clog up, slowing delivery of movies and TV shows to Netflix users."[373] Comcast, for its part, claims that "Netflix approached us for this direct connection between Netflix and Comcast, cutting out the wholesalers with whom Netflix had traditionally contracted and paid for transit" and that "[t]his arrangement was thus about Netflix exercising its market power to extract a more favorable arrangement directly from Comcast than what Netflix had been paying for through third party providers."[374] Although some aspects of the dispute are confidential, Netflix's website provides a graphic indicating that it experienced a steep decline in speeds in late 2013/early 2014, followed by a sharp increase in streaming speeds after changing how it interconnects with Comcast, as depicted below in Figure 3:

[373] *The Case Against ISP Tolls*, Netflix Blog (Apr. 24, 2014), *available at* http://blog.netflix.com/2014/04/the-case-against-isp-tolls.html.

[374] *See* Jennifer Khoury, *Comcast Response to Netflix's Opposition to Time Warner Cable Transaction*, Comcast Voices (Apr. 21, 2014), *available at* http://corporate.comcast.com/comcast-voices/comcast-response-to-netflixs-opposition-to-time-warner-cable-transaction.

Figure 3:



SOURCE: Netflix, USA ISP Speed Index Results Graph, Date Range May 2013-June 2014, *available at* http://ispspeedindex.netflix.com/results/usa/graph.

Similarly, press coverage indicates that Netflix customers on Comcast *after* the deal experienced an average streaming speed of 2.5 Mbps compared to 1.15 Mbps average in the month before the deal, a 65 percent increase.[375]

Given the complexity of this interconnection issue, for example, there is severe doubt whether the Commission could construct any conditions of sufficient clarity and wide enough scope that they would alleviate the harm Comcast/TWC could inflict on competing OTT video providers. And even if the conditions were perfectly drafted, nothing prevents Comcast/TWC from delaying resolution of the dispute, while it continues to engage in the anti-competitive conduct at issue. Professor Sappington explains that "[e]ven the most comprehensive and artfully crafted regulatory rules can take time and resources to implement and enforce" and

[375] Chris Welch, *Netflix streaming speeds on Comcast jump 65 percent after controversial deal*, The Verge (Apr. 14, 2014), *available at* http://www.theverge.com/2014/4/14/5613280/netflix-streaming-speeds-on-comcast-65-percent-faster.

"these rules can fail to secure desired industry behavior and so can fail to adequately protect consumers."[376] Regulatory behavioral conditions typically take considerable time to enforce, because regulators must gather requisite information and carefully consider the conflicting claims of relevant parties, as would clearly be the case should the Commission ever have to investigate an interconnection dispute between Comcast and an OTT video provider.[377] The result: "consumers can be harmed for extended periods of time even in the presence of rules that eventually limit undesirable behavior by suppliers like Comcast."[378]

Comcast/TWC, even in the presence of behavioral conditions designed to counteract its incentive to harm competing OTT services, will still have the incentive to inflict such harms. Indeed, Comcast's dispute with Netflix arose at a time when Comcast was subject to the Open Internet rules and during a period when the company otherwise had a strong incentive to forego its anti-competitive instincts because of the pending TWC transaction.[379] Comcast/TWC will know that competitive damage can be accomplished just during the time it takes to settle a dispute. And even where an OTT video provider believes it has a good chance of proving that Comcast/TWC violated a behavioral condition, the delay and expense required to challenge Comcast's actions could induce the OTT video provider to forego the challenge at all.[380] Professor Sappington notes that "reluctance to challenge even highly undesirable behavior is particularly likely when the rules do not promise compensatory rewards to parties that

[376] Sappington Declaration ¶ 85.

[377] *Id.* ¶¶ 86-89.

[378] *Id.* ¶ 86.

[379] *Id.* ¶ 78.

[380] *Id.* ¶ 83.

successfully challenge the undesirable behavior."[381] And if one OTT video provider has a poor experience in adjudicating a dispute with Comcast/TWC, it may discourage other aggrieved OTT video providers from bringing their own cases. Professor Sappington's predicts that "[w]hen [OTT video providers] feel powerless to contest Comcast's actions, they will have limited ability to impose meaningful competitive discipline on Comcast."[382]

Therefore, even if the FCC and Justice Department were to impose strict behavioral conditions intended to protect OTT video providers, Comcast/TWC would have significant incentives to fight hard against any attempts to enforce them, to delay settlement, and deter OTT video providers from actually availing themselves of the relief the government tries to offer. Professor Sappington ultimately concludes that "it is important to avoid increasing Comcast's incentive (and ability) to engage in sabotage that would reduce competition and stifle industry innovation" and that blocking the merger altogether will serve this purpose.[383]

XI. CONCLUSION

For the foregoing reasons, the Commission should deny the Application or designate it for a hearing.

[381] *Id.*

[382] *Id.* ¶ 87.

[383] *Id.* ¶ 89.

Respectfully submitted,

_____/s/_____

Jeffrey H. Blum, Senior Vice President
& Deputy General Counsel
Alison Minea, Director and Senior Counsel,
Regulatory Affairs
Hadass Kogan, Associate Corporate Counsel
DISH NETWORK CORPORATION
1110 Vermont Avenue, NW, Suite 750
Washington, D.C. 20005
(202) 293-0981

Pantelis Michalopoulos
Stephanie A. Roy
STEPTOE & JOHNSON LLP
1330 Connecticut Avenue, N.W.
Washington, D.C. 20036
(202) 429-3000

Counsel for DISH Network Corporation

August 25, 2014

DECLARATION

I declare under penalty of perjury that the facts contained within the foregoing Petition to Deny and its appended material, except for those facts for which official notice may be taken and those that other parties have submitted to the Federal Communications Commission confidentially under the protection of the *Protective Orders* in MB Docket No. 14-57, are true and correct to the best of my information, knowledge and belief.

Executed on August 25, 2014.

Jeffrey H. Blum
Senior Vice President & Deputy General Counsel
DISH Network Corporation

EXHIBIT A:
DECLARATION OF ROGER J. LYNCH

DECLARATION OF ROGER J. LYNCH

I, Roger J. Lynch, being over 18 years of age, swear and affirm as follows:

1. I make this declaration based upon personal knowledge, information, and belief, and in support of the submission of DISH Network Corporation ("DISH") to the Federal Communications Commission ("FCC") in connection with the FCC's review of Comcast Corporation's ("Comcast's") proposed acquisition of Time Warner Cable ("TWC").

2. I am currently Executive Vice President, Advanced Technologies and International Group for DISH. Prior to joining DISH, I served as Chairman and CEO of Video Networks International, Ltd., an IPTV company in the United Kingdom that delivered live and on-demand television over its own Digital Subscriber Line ("DSL") network. Prior to that, I was President and CEO of Chello Broadband, a cable broadband Internet Service Provider ("ISP") with operations in ten countries across Europe.

3. Based on my years of experience as a senior executive in both the broadband access and online content industries, I believe that the proposed merger of Comcast and TWC would cause significant and irreparable harm to emerging competitive online video products and services, as well as the performance of traditional satellite television service, ultimately reducing competition and choice for consumers. I also believe that no set of conditions or divestures can alleviate these harms.

4. In this declaration, I will explain why broadband connectivity not only is an integral aspect of a competitive satellite TV service, but critical to the development of over-the-top ("OTT") video services, a rapidly growing segment of the video industry and a necessary component to maintaining DISH's competitiveness. I also will explain why a combined Comcast/TWC will be able to thwart the competitiveness of DISH's core satellite service and emerging OTT services in order to enhance its own revenues, to a greater extent than either

Comcast or TWC would be able to do today. The combined firm, among other things, would be able to harm competition and consumers by: 1) slowing down online content using its broadband pipe; 2) imposing anti-competitive data caps; 3) foreclosing access to Comcast's NBCUniversal ("NBCU") content; and 4) restricting the ability of third parties to grant digital rights to competing pay-TV and OTT video providers. And, as explained below, the combined firm will have a greater incentive than today to wield those capabilities.

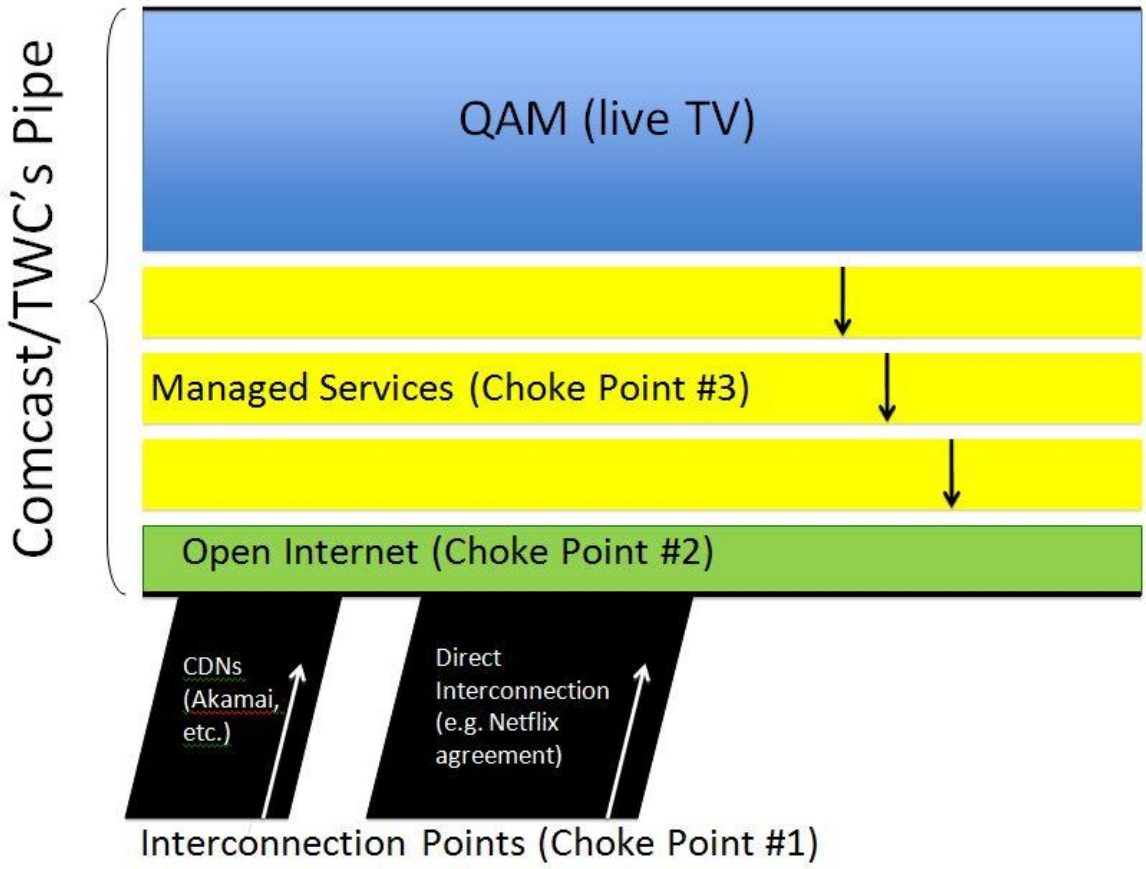
5. The three "choke points" on the Comcast/TWC pipe. *See illustration below.* The combined Comcast/TWC would be able to use at least three choke points in its broadband pipe to harm competing video services like those provided by DISH:

- Choke Point #1 is the interconnection point, where competitors' video services would enter the Comcast/TWC broadband pipe. The interconnection choke point is best described as the "on-ramp" to the companies' broadband highway. Comcast/TWC would control this critical point of interconnection, as it can close ports or refuse to open enough ports to allow competing content onto the "public Internet." No data can enter Comcast/TWC's broadband highway without passing through Choke Point #1. Comcast/TWC would be the sole gatekeeper of Choke Point #1.

- Choke Point #2 is the broadband connection to the consumer. This is often called the "public Internet" or the "last mile" connection. Picture this as the right-lane of the companies' broadband highway.

- Choke Point #3 is any managed or specialized service channels on the companies' broadband pipe, which can act as high-speed lanes and squeeze the capacity of the public Internet portion of the pipe. Picture this as the "HOV" lane of the companies' broadband highway, with traffic restricted to only Comcast/TWC data (either its own or that of a preferred third party willing to pay the toll). Comcast/TWC's own services may enjoy the fast lane, while DISH's and all other competitors' data may get squeezed onto the ever more crowded "public Internet" lane. If one thinks of the companies' broadband pipe as an eight-lane highway, it is easy to see how the "public Internet" lane could become gridlocked if seven of the lanes are designated as high-speed managed services lanes.

Each of the above three choke points provides the ability for a combined Comcast/TWC to downgrade the online video offerings of its competitors, all to the detriment of consumers.



6. Online video is a critical component of a competitive multichannel video programming distributor ("MVPD") service. To understand the significance of the three broadband choke points described above and the impact that a merged Comcast/TWC would have on the competitiveness of the video industry, one must appreciate the degree to which DISH relies on the ability of its subscribers to access a broadband connection to the Internet. DISH has a proven record as a disruptor in the video industry, spurring its larger rivals to innovate and compete. DISH's leading role in technological innovation, such as developing satellite spot beams to allow local broadcast station carriage on satellite TV, and its marketing innovations, such as offering no up-front cost set-top-box ("STB") leasing offers, have established us not only as an industry leader but as a catalyst for industry-wide innovation. Today, in a pay-TV industry dominated by "wireline" cable and telephone company providers,

DISH maintains its competitiveness by increasingly investing more heavily in broadband-enabled online video services. The most advanced digital STBs deployed by DISH now include a separate input for broadband. The subscriber typically must acquire the broadband service from a third party ISP, such as Comcast or TWC, and connect that broadband wire into a port in the back of the DISH STB.

7. The broadband connection to the STB is an integral aspect of DISH's ability to compete in the pay-TV business today, not simply an additional feature. Cable enables two-way communications by storing content on servers closer to the customer's home and splitting nodes within a neighborhood to facilitate on-demand and other interactive services. In contrast, satellite's point-to-multipoint architecture and lack of a return path necessitates a second connection to the STB via broadband in order to maintain the competitiveness of the DISH service. This is reflected in the following broadband-enabled features offered by DISH:

8. Hopper with Sling. The award-winning DISH Hopper STB with integrated Sling technology seamlessly integrates broadband-enabled elements with linear programming delivered via satellite. About [[ ]] of all Hopper with Sling STBs are broadband-enabled. Subscribers can set their DVR and view their home television on a remote device using the Sling functionality powered by a broadband connection to the STB. The broadband connection allows the customer to send data from the STB via the Internet (such as when a subscriber sets her DVR to record a show) and to receive data from the STB (such as when a subscriber views live or recorded programming *remotely* on a personal computer or mobile device). Without a broadband connection to the Hopper with Sling, this functionality simply will not work.

9. The Hopper with Sling also provides recommendations to customers to help them discover content. As in the case of Sling, interactive features like these cannot be supported by a

point-to-multipoint direct broadcast satellite architecture; they require the two-way, broadband connectivity provided by a customer's third-party ISP.

10. DISH Anywhere. DISH Anywhere is a service that DISH offers to its subscribers. It is provided through a web site (www.dishanywhere.com) and mobile applications, and gives customers the ability to access thousands of on-demand movies and TV shows. These shows are streamed directly from DISH's servers, similar to how Netflix delivers movies and TV shows to its customers. Customers who have a Sling-enabled Hopper can also use DISH Anywhere to access live and recorded TV shows anywhere directly from the DVR residing in their home, through their home broadband connection. Again, these interactive features cannot be supported by a point-to-multipoint direct broadcast satellite architecture; they require the two-way, Internet connectivity that is most often provided by a customer's third-party ISP.

11. IP Video-on-Demand ("VOD"). Cable operators offer increasingly robust video libraries on-demand and use those offerings to attract and retain subscribers. In order to remain competitive, DISH must offer the same type of service, such as TV shows or movies available at any time of the customer's choosing. However, DISH cannot rely solely on its satellite platform to do so; there is not enough bandwidth on the satellite beam to carry all of the necessary data to serve on demand the individual programming choices of DISH's 14 million subscribers. There also is not enough storage capacity on each individual DVR to store all of the possible movies and television shows any given customer might want to select. DISH therefore caches VOD titles on servers located throughout the United States and delivers the files to the customer's STB via a broadband connection. Thus, a DISH subscriber might be watching live video programming via satellite and then select an on-demand video or television show, which arrives at the STB via the subscriber's broadband connection. Once again, a critical functionality of

DISH's service that enables the company to compete relies entirely on the customer's third-party ISP provider, not DISH's fleet of satellites and uplink centers.

12. As the above examples demonstrate, our competitors offer services that we must match or exceed using broadband connectivity or online video services. This trend is expanding beyond the traditional pay-TV features, such as VOD, and into the emerging realm of OTT services. Our pay-TV competitors have introduced complementary online video services as part of their pay-TV package in order to reduce churn, attract new subscribers, and maintain market share. These include: Comcast's Fancast Xfinity; TWC's TWCTV; AT&T U-Verse's AT&T Entertainment; Cablevision's PC to TV Media Relay; DirecTV's DirecTV on DEMAND; and Verizon's FiOS TV Online. With the exception of DirecTV, all of these competitors use their own, proprietary terrestrial broadband networks in whole, or in part, to deliver their online video products to subscribers. Comcast, for example, uses its own network to deliver the Xfinity product, which essentially is an OTT service that is delivered solely to users of the Comcast network. Subscribers to FiOS TV Online use either their FiOS connectivity at home or another broadband provider elsewhere. DISH does not have its own residential wireline broadband network. Again, DISH must rely on the customer's ability to connect the STB to a third-party ISP.

13. Internal data compiled by the business units I oversee and other businesses within DISH demonstrate that the DISH broadband-enabled services are a critical input to maintaining our competitiveness, not simply endearing features ancillary to our core satellite product. The broadband-enabled services play a direct role in reducing subscriber churn to other pay-TV providers and maintaining the competitiveness of the DISH satellite service.

14. For example, the DISH Anywhere features appear to dramatically reduce churn. Subscribers who never use the DISH Anywhere applications on mobile and other Internet-

connected devices have [[ ]] churn rate as subscribers who use DISH Anywhere four or more days per month.

15. The total number of households among DISH's subscriber base using DISH Anywhere is increasing at a rapid rate. Usage doubled in 2010 and again in 2011. For 2014, current trends suggest a 50 percent increase in DISH Anywhere usage for the year. These figures suggest that the broadband-enabled DISH Anywhere service enhances the competitiveness of DISH's core service by addressing consumers' demand for online video. Without the broadband-enabled DISH Anywhere service, DISH's satellite TV service would fail to meet consumers' desire for online video. DISH would therefore fall behind cable competitors who are able to use their own infrastructure to address this need (*i.e.*, use their own connection to the STB to provide both traditional video and broadband connectivity).

16. DISH subscribers are using broadband-enabled IP VOD programming at a rapidly increasing rate. IP VOD viewing increased over 100 percent in the 12-month period ending May 2014.

17. All of these data points and trends not only reflect the importance of broadband-enabled functionality to maintaining the competitiveness of DISH's services, but also the extent to which such services are even more important to consumers than we had anticipated just a few years ago. The aforementioned data greatly exceeds the increased importance of broadband-enabled functionality I predicted in my declaration accompanying DISH's opposition to the Comcast/NBCU merger submitted in June of 2010. In that Declaration, I stated that, due to DISH's reliance on IP VOD to the STB, DISH "cannot be competitive with cable operators in the future if DISH Network customers do not have a reliable, open broadband connection to their

set-top boxes."[1] That reliance on a broadband connection is even more important today than it was four years ago, given the tens of thousands of programming hours cable operators have made available on their VOD services.

18. I also stated that the "…amount of content consumers are viewing on demand is increasing dramatically," and cited a 38 percent increase in such viewing over a two-year period.[2] This trend has not only continued as I said it would, but has accelerated to an even greater degree than I had predicted.

19. Nothing suggests that a reversal of this trend is imminent. I believe that the importance of broadband-enabled functionality to maintaining the competitiveness of DISH will continue to increase unabated over the next decade.

20. OTT video. OTT video is becoming a significant force in the overall video industry. We see an increasingly challenging path for stand-alone satellite TV to maintain competitiveness and market share, and as a result, we are investing heavily in OTT video services. Providing OTT services is distinguishable from the need to have broadband-enabled services with DISH STBs, as described above. Investing in OTT reflects our belief that consumers, especially the younger generation, increasingly wish to consume video via broadband on any device, at any time, without being tethered to a STB. Thus, DISH launched a stand-alone OTT service for foreign language consumers, called DISH World. DISH World is growing at a much faster rate than the traditional foreign language service on DISH's satellite service, underscoring our belief that OTT is the future of pay-TV.

[1] Declaration of Roger J. Lynch, Petition to Deny of DISH Network L.L.C. and EchoStar Corporation, MB Docket No. 10-56, ¶ 8 (June 21, 2010).

[2] *Id.*

21. DISH World. Foreign language programming has been a particularly important niche for DISH since the early years of the company's history. Satellite historically could aggregate a national audience, such that a foreign language population, while small in number in any given locality, still would add up to a sizable enough population nationally to justify carriage of a niche foreign language channel. This is how foreign language channels helped to build DISH's subscriber base. The same is holding true for Internet-only distributed services. DISH World is a separately offered, Internet-only foreign language video programming service. Consumers may purchase a DISH World subscription without a DISH satellite-TV service subscription. DISH World, as a purely OTT service, requires a separately provisioned broadband connection. The vast majority of DISH World viewing (over [[ ]]) is on a television screen using Roku, Samsung, or other similar device, not a computer or handheld device. As an indicator of how consumers increasingly will want to supplant their current pay-TV service with OTT, DISH World subscribers spend an average of five and a half hours per day watching the service, roughly the same number of hours a typical American consumer views television on a traditional pay-TV service. This underscores the degree to which DISH World, an OTT service, functions like a traditional pay-TV service to the consumer, and how consumer behavior portends the increased use of OTT.

22. The growth rates of DISH's foreign language satellite subscribership and DISH World's subscribership further illustrate how OTT has become a viable alternative to traditional linear pay-TV service. DISH World represents approximately three-quarters of all new foreign-language subscriber gross additions at the company. DISH's satellite foreign language subscribership, by contrast, is remaining relatively level. The OTT service growth outpaces that of DISH's traditional satellite TV service.

23. OTT brings video to a wider audience than does traditional pay-TV. Not all video consumers are best served by a traditional pay-TV product. For example, a typical pay-TV subscription requires: a two-year contract at the same residence; the ability to pass a credit check; a several-hour window when the customer waits at home for a technician to arrive and complete the installation; and a leased or purchased STB. DISH World, however, is immediately available on any Internet-enabled device, as soon as the subscriber signs up and pays for the first month of service. Thus, DISH World has helped to broaden the base for DISH subscribership by offering OTT video in lieu of satellite-TV programming.

24. New domestic OTT service. The DISH World infrastructure will serve as the launching pad for DISH's broader, domestic OTT service. DISH is responding to general consumer demand for OTT video services by launching a stand-alone, online video product in partnership with Disney, A+E Networks, and other companies that will allow for a smaller package of channels and an OTT-only option for new subscribers.

25. In March 2014, DISH and Disney announced a distribution agreement that, among other things, will allow DISH to distribute Disney's linear and VOD programming, including ESPN, ABC and the Disney Channel, via an OTT service, marking the first time that any major content company granted a U.S. pay-TV partner such online video distribution rights.

26. On August 5, 2014, DISH and A+E Networks announced a distribution agreement (similar to the Disney agreement) that will allow DISH to distribute A+E's linear and VOD programming via an OTT service.

27. Just like the Hopper with Sling, DISH Anywhere, IP VOD, and DISH World examples, the new DISH OTT service will be entirely dependent on subscribers' ability to access the Internet via a high-speed high-capacity broadband service provided by a third party ISP, such as Comcast and TWC. At least initially, DISH will target its new OTT service to early

technology adopters in the 18-34 years of age demographic. Unlike traditional pay-TV services, DISH's new OTT service will not require a credit check or contract. Instead, consumers will be able to access the product on a pay-as-you go basis, making it ideally suited for those who do not have the means or desire to commit to a multi-year contract for pay-TV.

28. The DISH/Disney and DISH/A+E OTT agreements reflect a larger trend in the video industry generally, as pure online video distribution takes on an increasingly important role.

29. The percentage of video consumed online, including via smart phones, tablets, computers, and Internet-enabled TVs, is increasing year over year and represents a sizable proportion of overall video consumption. The video industry is experiencing and will continue to experience the most growth in OTT video, as DISH is experiencing with DISH World compared to the DISH's satellite foreign language service.

30. My belief that OTT increasingly will be consumers' preferred mode of receiving video stems not only from our internal data regarding DISH World and other, widely available information, but also from my observations of industry trends. I work directly with content providers and equipment vendors; the general consensus is that OTT is emerging as the video platform of choice for consumers, particularly people under 30 years of age. Moreover, the prevalence of high-quality video content online demonstrates the maturation of OTT as a sophisticated video distribution platform. Netflix has over 50 million subscribers worldwide, including 36 million in the United States,[3] and Amazon Instant Video has 10 million subscribers by some estimates, with projections that this number will grow to 25 million subscribers by

[3] *See* James O'Toole, *Netflix Passes 50 Million Subscribers*, CNN (Jul. 22, 2014), *available at* http://money.cnn.com/2014/07/21/technology/netflix-subscribers/.

2017.[4] As of March 2014, Amazon's traffic volumes had reportedly increased by 94 percent over the past year.[5] Netflix and Amazon also have substantial enough online video distribution that they can invest directly in original content creation, such as the successful Netflix series, "House of Cards."[6]

31. It is worth noting that Netflix originally entered the video streaming business through a deal with Starz Entertainment. When Disney objected to having its Starz-licensed content distributed online through Netflix, Disney ultimately did a deal directly with Netflix.[7] There will be a major shift in the programming distribution industry in 2016, when Disney will no longer distribute movies on television in the first video distribution "window" but instead will do the first video distribution through Netflix.[8] This underscores the degree to which OTT providers have become a significant presence in the video industry.

32. Roku. Roku provides STBs that enable consumers to access both live and on-demand OTT content. Roku provides more than 1,000 channels, including hundreds of free channels that provide religious, sports, family, and international programming, among other

[4] *See* Chris Katje, *Amazon vs. Netflix: Battle to Become Streaming King Heats Up,* Variety (Aug. 2, 2013), *available at* http://variety.com/2013/biz/news/amazon-turning-svod-space-into-a-two-company-race-1200571585/.

[5] *See* Mark Fisher, *Amazon Rising – Amazon's Streaming Video Surpasses Hulu and Apple*, QWILT (Apr. 4, 2014), *available at* http://qwilt.com/amazon-rising-amazons-streaming-video-surpasses-hulu-and-apple/.

[6] *See* Cecilia Kang, *Netflix Has Hits, Emmys and Subscribers. But Can It Survive Its Fight With Cable?*, The Washington Post (Jul. 10, 2014), *available at* http://www.washingtonpost.com/business/technology/netflix-has-hits-emmys-and-subscribers-but-can-it-survive-its-fight-with-cable/2014/07/10/73638bba-02c3-11e4-8572-4b1b969b6322_story.html.

[7] *See* Ben Fritz and Joe Flint, *Netflix takes Disney pay-TV rights from Starz,* LA Times (Dec. 4, 2012), *available at* http://articles.latimes.com/2012/dec/04/entertainment/la-et-ct-netflix-takes-disney-pay-tv-rights-from-starz-20121204.

[8] Ryan Lawler, *Netflix Strikes Streaming Deal With Disney, Gains Exclusive Access To New Titles Beginning In 2016*, Tech Crunch (Dec. 4, 2012), *available at* http://techcrunch.com/2012/12/04/netflix-disney/.

genres.[9] Roku also offers subscription service channels like Hulu Plus, Netflix, and Amazon Instant Video.[10] There are no recurring fees or monthly subscription fees necessary to utilize the Roku service (though users seeking to stream subscription channels over the Roku must independently subscribe to those services). Roku players connect directly to a consumer's television and rely on a user's high-speed broadband connection to deliver programming. The average Roku player streams 13 hours of content per week, with 25 percent of Roku players streaming 35 hours per week.[11] Roku has sold over 8 million Roku devices to consumers.[12]

33. Apple TV. The Apple TV device enables viewers to stream content from the iTunes Store to their television sets. Netflix, Hulu Plus, HBO Go, MLB.TV, and a handful of other online media services are also available for streaming on the Apple TV.[13] The Apple TV relies on a high-speed broadband connection to deliver programming to a consumer's television. Apple has sold over 20 million Apple TVs.[14]

34. A combined Comcast/TWC would be able to thwart the competitiveness of DISH's core satellite service and emerging OTT services in order to enhance its own revenues. It would do so to a greater extent than either Comcast or TWC can today.

---

[9] *See* Roku, *Meet Roku* (accessed Aug. 20, 2014), *available at* https://www.roku.com/meet-roku.

[10] *See* Julian Meeks, *The Evolution of Roku 1 to Roku 3*, Street Wise Tech (Aug. 3, 2014), *available at* http://www.streetwisetech.com/2014/08/evolution-roku-1-roku-3/.

[11] *See* Dan Rayburn, *Roku Has Shipped Nearly 8 Million Devices, Average User Streams 13 Hours Per Week*, Streaming Media (Feb. 25, 2014), *available at* http://blog.streamingmedia.com/2014/02/roku-shipped-nearly-8-million-devices-average-user-streams-13-hours-per-week.html.

[12] *Id.*

[13] Matthew Moskovciak, *A Great Streaming Box, Especially for Apple Fans*, CNET (Mar. 16, 2012), *available at* http://www.cnet.com/products/apple-tv-2012/.

[14] *See* Matt Swider, *Tim Cook Touts 20 Million Apple TVs Sold, Disses Amazon's HBO Deal*, Tech Radar.TVs (Apr. 23, 2014), *available at* http://www.techradar.com/us/news/television/tim-cook-touts-20-million-apple-tv-sales-when-asked-about-amazon-fire-tv-1244744.

35. Data required for OTT. One of the primary reasons why a combined Comcast/TWC would have a greater incentive and ability to thwart competition from DISH and other broadband-enabled video competitors would be the extremely high concentration of the fastest residential broadband connections under one company's control. Comcast/TWC would be the main gatekeeper to broadband-enabled video nationwide and in key local areas. Large amounts of throughput are required to provide a typical household with high-definition ("HD") video via the Internet. To calculate how much broadband capacity is needed to support the ultimate replacement of traditional pay-TV service with an all-OTT product, I use as a baseline the current television viewing and Internet usage habits of the typical American household.

36. We assume that there will be, on average, three televisions in a household that could be in use simultaneously. An HD video stream requires on average 5 Mbps of data throughput, so a typical household could require 15 Mbps (5 Mbps x 3 TVs) for video alone. When we add a typical household's other Internet and broadband usage habits, such as personal computers, Wi-Fi-enabled mobile devices, and "connected devices" (such as a home security system or refrigerator), we assume another 5-10 Mbps of throughput is required to avoid degrading the television viewing experience. Thus, a typical household relying on the Internet to deliver all video should have no less than 25 Mbps in broadband connectivity. This means that 25 Mbps would be the minimum actual experienced speed provided to the residence in order to sustain a robust OTT video product capable of supplanting today's traditional linear pay-TV service. And, this 25 Mbps threshold will rise. Just as video experienced an exponential increase in quality and bandwidth demand in the transition from standard to HD television, advances in video clarity and quality portend greater bandwidth needs by the customer. Specifically, the new "4K" Ultra HD video standard allows a video device, such as a large television, computer monitor, tablet or smartphone, to deliver four times as much detail as 1080p

Full HD (*i.e.*, 8 million pixels compared to 2 million pixels). The development of the 4K standard remains quite fluid but one thing seems clear: 4K will require much greater data throughput than does standard HD television, even assuming that we continue to see advances in video compression technology. Other advances likely will increase video bandwidth demands. Thus, the 25 Mbps bandwidth threshold could easily increase to 30, 50, or 100 Mbps in the foreseeable future.

37. Cable broadband and fiber are the only type of ISP services capable of offering such speeds consistently. They can offer the 25 Mbps or higher speeds necessary to sustain a typical household's video consumption now and in the near future. Cable and fiber lines allow for greater bandwidth than do the copper over which telephone companies typically offer DSL.

38. DSL is an inadequate substitute for high-speed cable broadband. DSL providers advertise speeds that are well below what I believe are the necessary thresholds to support HD video on multiple TVs in a household, and even those advertised speeds tend to be higher than the actual speed experienced by the consumer. For example, CenturyLink advertises a 12 Mbps/3 Mbps DSL service in Colorado, well below the 25 Mbps threshold.

39. A customer's distance from a DSL hub (point of origination) also affects the speed of service. A customer that is not located close to a DSL hub could experience speeds well below those advertised because the copper lines over which DSL is provided slow down data speeds the longer the electrons must travel along the lines. A suburban or exurban home with DSL therefore might experience significantly degraded speeds, compared to an urban household located close to a DSL hub.

40. In addition, DSL, like cable, also suffers from decreased speeds when more households use the network at peak hours. Residential broadband networks use a tree-and-branch architecture whereby each household shares bandwidth with surrounding households, as

opposed to a point-to-point devoted circuit architecture like the PSTN. Moreover, broadband network providers regularly over-sell their networks. They make assumptions about how many people will or will not be using the network at any given time. So if the advertised speeds require, say, no more than 10 households to be using the network at any given time, a provider might sell its service in that particular area to 30 households and assume that only 1/3 of them will use the service simultaneously. Such assumptions, however, often turn out to be wrong. In this case, perhaps half the households will use the network at peak hours, or a higher than expected proportion will use bandwidth-intensive applications, like video, leaving networks overloaded with more users than anticipated and driving down actual speeds well below those advertised. Thus, even if DSL's advertised speeds were to meet the 25 Mbps threshold (which they do not), the likelihood of DSL failing to deliver an adequate data throughput at peak hours to all homes would be high.

41. With respect to a full-fledged OTT service, wireless is an inadequate substitute for cable broadband. Most wireless providers impose very low monthly data caps (*e.g.*, 5 Gigabytes) that quickly would be met by a typical household's video consumption. For example, streaming two HD movies from Netflix would exceed 5 Gigabytes.

42. The behavior of DISH's subscribers reflects cable broadband's superiority over DSL for purposes of consuming online video. Among DISH World subscribers, cable broadband significantly over-indexes against DSL. Our internal data shows that [[ ]] of DISH World subscribers have cable broadband rather than DSL, compared to [[ ]] of broadband subscribers nationally. This suggests that when a broadband connection is used for HD video, cable is the preferred broadband platform.

43. I believe that the behavior of DSL providers themselves also shows that DSL is inadequate to support online video consumption. Verizon and AT&T provide DSL service.

However, when they offer video in their FiOS or AT&T U-Verse packages respectively, they do not use DSL to deliver the video. Instead, they use a fiber optic architecture. If DSL were capable of delivering sufficient bandwidth for HD video consumption in the home, I believe that Verizon and AT&T would have much preferred using those existing facilities, instead of constructing expensive new network facilities.

44. Comcast/TWC will control 50 percent of the market for high-speed broadband service capable of supporting a typical household's video consumption now and in the near future.[15] Given that cable broadband is by far the best, and sometimes the only, ISP service capable of sustaining Internet video consumption by a typical household, I believe that, when considering the impact of the proposed Comcast/TWC merger, cable and fiber broadband services with threshold download speeds of 25 Mbps or more are the only relevant product to account for high-speed high-capacity broadband connections. As such, if allowed to combine, the merged Comcast/TWC will control access to 50 percent of the relevant broadband subscriber lines best suited to deliver HD Internet video.[16]

45. In my opinion, and for the reasons explained in more detail below, this represents a dangerous concentration of power in the hands of the merged company, and that power can be used to thwart the competitiveness of DISH and its various broadband-enabled services. Specifically, Comcast/TWC will have the ability to thwart the quality of DISH's broadband-enabled STB functionality, such as IP VOD or Hopper with Sling; and the DISH OTT services, such as DISH World and the forthcoming domestic OTT service. Moreover, as Comcast upgrades the speeds of TWC's broadband networks, the percentage of really high-speed

[15] *See* Professor David Sappington, The Anticompetitive Effects of the Proposed Merger of Comcast and Time Warner Cable, Exhibit B to Petition to Deny of DISH Network Corporation, MB Docket No. 14-57, ¶ 20 (Aug. 25, 2014).

[16] *Id.*

residential connections (*e.g.*, 50 Mbps and above) controlled by the merged entity will only increase over time, further strengthening the combined companies' gatekeeper status between broadband-enabled video services and Comcast/TWC subscribers, and increasing Comcast/TWC's ability to harm competing online video services.

46. Geographic markets. DISH, like any provider of OTT services, looks at the American market nationally as well as locally. Aggregate use of our service is measured on a national basis. Demand for a particular foreign language service, for example, depends on overall U.S. demand that can be aggregated to cost-justify the service. With respect to launching our new domestic OTT service (that will include content from Disney, A+E, and other providers) we would look at the market nationally and would have to make our product available nationally, just as Netflix and Hulu do today. Additionally, since our new OTT service likely will appeal to the younger generation with access to high-speed broadband, we anticipate larger subscriber growth in the large metropolitan areas.

47. With respect to certain programming services, the market can look much more local than national in nature. Some foreign language groups, for example, are concentrated in certain areas, such as Arabic speakers in Dearborn, Michigan, or Hindi speakers in New York City. Consequently, the local broadband provider in those areas can serve as a gatekeeper to an OTT service seeking to serve that population.

48. I believe that a combined Comcast/TWC will be able to curtail DISH's competitiveness both nationally and locally, in the manner detailed below.

49. Comcast/TWC will have greater incentive and ability to discriminate against OTT services than do either Comcast or TWC pre-merger and will pose a direct threat to DISH's and other video providers' competitiveness in the video industry. First, the combined companies will control such a significant share of the highest-speed residential connections that any competing

video provider requiring broadband connectivity will be dependent on Comcast/TWC for access to consumers. This will become more acute as the combined firm integrates TWC's broadband systems, bringing an even greater percentage of the nation's high-speed residential broadband connections under one roof.

50. DISH World subscribers' broadband connectivity demonstrates how dominant the high-speed broadband footprint will be of the merged companies. Comcast and TWC rank first and second, respectively, among DISH World subscribers' broadband ISPs: [[ ]] of DISH World subscribers use Comcast broadband, [[ ]] use TWC. If combined, Comcast and TWC would control [[ ]] of all DISH World subscribers' residential broadband connections. The combined companies' power would be concentrated in the most important major metropolitan areas in the U.S. The transfer of additional Charter systems to Comcast/TWC, as proposed by the merger applicants, would exacerbate this phenomenon in major metropolitan areas.

51. The concentration of the top major metropolitan areas within a combined Comcast/TWC would pose a significant competitive threat to DISH's OTT services. For example, if we consider Philadelphia, New York, Washington, D.C., Chicago, Los Angeles, and Dallas, each of these cities contain a disproportionately high number of foreign language speakers comprising the target segment of DISH World's foreign language services. Today, if TWC were to block its subscribers' access to DISH World, it would be a significant blow to our competitiveness because we would lose access to, say, Hindi speakers in New York City, Los Angeles, and Dallas. However, we still could sell our DISH World product to Comcast subscribers. Alternatively, if Comcast decided to engage in similar conduct, that, too, would likely be survivable, despite the loss of access to Hindi speakers in Philadelphia, Washington, D.C. and Chicago, because of the availability of unimpeded service in other large markets. Post-

merger, however, if a combined Comcast/TWC refused to allow its subscribers to access DISH World, meaning we also would lose access to Hindi speakers in New York City, Los Angeles, Dallas, Philadelphia, Washington, D.C. and Chicago, it would so completely deplete us of our customer base that DISH World would fail economically.

52. To further illustrate this point, it is helpful to consider Los Angeles, which is the third largest DISH World audience today. Comcast provides broadband ISP service to [[ ]] of DISH World subscribers within Los Angeles, while TWC serves an additional [[ ]] of DISH World subscribers there. A combined Comcast/TWC would serve [[ ]] of all DISH World subscribers within Los Angeles. If the proposed Charter system transfers were approved, the new entity would control broadband Internet access for [[ ]] of the DISH World subscribers within Los Angeles. At these concentration levels, Comcast/TWC simply would control the fate of DISH World and probably every other OTT service offering in Los Angeles.

53. Just as the foreign language example illustrates how a combined Comcast/TWC would have a much greater ability to curtail DISH's competitiveness than does either company standing alone today, the same would be true for DISH's ability to address another critical audience, young consumers aged 18-34. In our experience, this demographic over-indexes to urban, rather than suburban or rural areas. Thus, just as in the foreign language example, if a combined Comcast/TWC controls half or more of the relevant high-speed broadband lines nationally, and its systems are concentrated in the largest metropolitan areas where 18-34 year olds tend to live, our ability to offer a mainstream OTT service to the audience most likely to adopt that product at the outset could be greatly, perhaps fatally, curtailed.

54. <u>DISH is particularly vulnerable.</u> I believe that Comcast/TWC would have an especially greater incentive to target DISH. Comcast and TWC view DISH's satellite TV

service as a competitive threat to their core pay-TV services. As the FCC has recognized in the past, this alone gives cable operators the incentive to thwart the performance of DISH's broadband-enabled features. Based on our own internal data referenced above, we know that such functionality helps to stem subscriber churn to competing services. Our cable competitors know it, too. Post-merger, a combined Comcast/TWC would have an even greater incentive to decrease DISH's edge by degrading the broadband-enabled STB functionality DISH relies upon. Such features, as stated above, include the DISH Anywhere and IP VOD elements DISH deploys today to maintain its satellite TV service's competitiveness.

55. A combined Comcast/TWC also would have a particularly acute incentive to thwart the quality of the DISH OTT services, such as DISH World, and the forthcoming domestic OTT service that will include Disney and A+E programming. This would have a substantial negative impact on DISH subscribers. If Comcast/TWC degraded the quality of a Netflix or Amazon subscriber, the subscriber could, at least, continue watching her cable TV service for linear video, such as sports, news, or broadcast network programming. But, today the DISH World consumer ideally subscribes to a residential broadband service and then turns to the DISH OTT service for all her video programming needs. This poses a substantial competitive threat to Comcast and TWC, which in turn presents a particularly attractive target for Comcast/TWC to degrade if this merger is consummated. Comcast/TWC could sufficiently degrade DISH's OTT service using, for example, one of the three "choke points" described above. The consumer would then be more easily persuaded to drop the DISH OTT service in favor of the broadband provider's linear video programming service.

56. Comcast and TWC's OTT services. Comcast and TWC both offer many OTT or Internet-delivered services today that compete with DISH's current and forthcoming products.

57. Comcast has developed and deployed its own OTT distribution platform. Comcast provides an extensive online library that contains more than 300,000 streaming choices, including 50 live television channels available at XfinityTV.com.[17] Comcast customers can access these services through the company's X1 and successor X2 platforms, which provide customers with "interactive TV functionality" that relies on a broadband connection. These platforms offer integrated search (across TV, Xfinity On Demand, and DVR), access to the Internet and apps, cross-product integration (including access to voicemail from the TV), and an X1 remote application that allows customers to use their smart phones and tables to control their TVs.[18] Currently, the accessibility of Comcast's content on the X1 and successor platforms is limited to the scope of Comcast's footprint, but I am aware of no technical reason why content availability cannot extend nationwide. Though the scope of distribution currently may be limited by Comcast's contracts with its programming partners, those contracts could be renegotiated.

58. TWC has invested in a variety of partnerships that enable consumers to access the company's content through a number of OTT devices. In 2013, Roku and TWC announced that TWC would bring its authenticated cable service – TWC TV – to the Roku player.[19] As a result, TWC subscribers can access more than 300 channels of live television on their Roku box, in addition to more than 5,000 free and subscription-based on-demand entertainment choices

[17] *See* Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Transfer Control of Licenses and Authorizations, Applications and Public Interest Statement, MB Docket No. 14-57, at 77 (Apr. 8, 2014).

[18] *Id.* at 79.

[19] *See* Chris Welch, *Time Warner's New Roku App Turns Your Streaming Device into a Cable Box*, The Verge (Jan. 7, 2013), *available at* http://www.theverge.com/2013/1/7/3842556/time-warner-cable-bringing-live-tv-to-roku; TWC TV Launches on Roku, Roku Blog (Mar. 5, 2013), *available at* http://blog.roku.com/blog/2013/03/05/twc-tv-launches-on-roku/.

from nearly 100 top networks.[20] In April 2014, TWC became the first national cable company to reach an agreement with Fanhattan's Fan TV to distribute content. Because the Fan TV device is designed to be sold exclusively to cable customers, it aims to serve as an alternative to an MVPD-provided STB. Customers that purchase a Fan TV device from TWC pay a one-time cost for the box, with no contracts or extra fees required (beyond the cost of pay-tv and Internet service). TWC video subscribers with a Fan TV can access TV and video-on-demand, along with a handful of other services: Redbox Instant by Verizon, Crackle, Target Ticket and the Rhapsody streaming music service.[21] Currently, the accessibility of TWC content on these devices is limited to the scope of TWC's footprint, but I am aware of no technical reason why content availability cannot extend nationwide. Though the scope of distribution currently may be limited by TWC's contracts with its programming partners, those contracts could be renegotiated.

59. Both Comcast and TWC are developing these OTT service offerings independently. In both instances, the companies, in my opinion, appear to be in a position to launch full-fledged OTT services akin to DISH's forthcoming domestic OTT service, and to do so nationally, such that even subscribers to other broadband networks could access the Comcast or TWC OTT services. If Comcast and TWC are indeed on independent trajectories toward offering nationally distributed OTT services outside their respective cable footprints, then TWC would one day compete head-to-head with Comcast. From the consumer's standpoint, this would be a positive. If the merger is approved, however, the combined companies would offer

[20] *See TWC TV on Roku Now Offering Live and On-Demand Entertainment*, Roku Blog (Dec. 18, 2013), *available at* http://blog.roku.com/blog/2013/12/18/twc-tv-on-roku-now-offering-live-and-on-demand-entertainment/.

[21] *See* Todd Spangler, *Time Warner Cable Will Market Startup's Fan TV as a Great New Way to Watch TV*, Variety (Apr. 22, 2014), *available at* http://variety.com/2014/digital/news/time-warner-cable-will-market-startups-fan-tv-as-alternative-to-its-own-set-tops-1201161027/#.

only a single OTT service, or perhaps forego altogether launching a nationwide OTT service, thus depriving consumers of important competitive choices.

60. Moreover, as stand-alone companies providing nationwide OTT services, both Comcast and TWC would have an incentive not to degrade each other's OTT services for fear of retribution on the aggrieved broadband operator's network. This will not be the case when both companies combine. They would control a majority of high-speed broadband lines, and an even higher majority of high-speed broadband lines for the generally urban-located target demographic for OTT services. This significant market share held by the merged company would free it to discriminate with impunity against others' OTT services. Thus, the merger not only would deprive consumers of competition in the OTT space by eliminating a potential provider and reducing the competitiveness of others, it would reduce the incentive of each company standing alone to avoid discriminatory behavior.

61. Ability to discriminate: technical methods. Having established the many ways in which a combined Comcast/TWC would have an incentive to discriminate against DISH's broadband-enabled STB functionality and OTT services, and the ability to discriminate through sheer market share size, I now will explain the technical manner in which Comcast/TWC could degrade DISH's competitiveness through the residential broadband connection. The three "choke points" described previously in this declaration—interconnection, public Internet prioritization, and managed services—all derive from specific network characteristics that a combined Comcast/TWC could exploit.

62. All of the broadband-enabled features described above—Hopper with Sling, DISH Anywhere, IP VOD, DISH World, and the forthcoming domestic DISH OTT service—rely entirely on a subscriber's ability to connect to the Internet via a broadband connection. They all require a two-way "return path" such that, in the case of STB functionality, the web-

based or mobile application client can communicate to the STB (*e.g.*, set a DVR recording) and the STB can send a high-bandwidth video signal (*e.g.*, streaming a video via DISH Anywhere) with sustained throughput, minimal throttling, minimum jitters, and sufficient quality of service suitable to HD video. Or, in the case of IP VOD or DISH World, the STB or customer device can receive bandwidth-intensive streamed video cached on remotely located servers.

63. DISH's IP VOD service replicates the cable VOD experience by using broadband to download files via the Internet to the STB. Large video files are cached on servers owned either by DISH or EchoStar Communications ("EchoStar," a sister company to DISH) or by a third-party provider.

64. DISH World receives foreign language programming streams in much the same way that the satellite TV service does, typically by a satellite downlink, but then encodes, caches, and transports the live foreign language video streams for distribution on the Internet as an OTT service.

65. The network architecture of the Internet and the business relationships between a combined Comcast/TWC and DISH (or its vendors) help to explain why a combined Comcast/TWC would be in an even stronger position post-merger to hinder DISH's competitiveness than exists today. In the case of both IP VOD and DISH World, a third-party Content Delivery Network ("CDN") transports the data from servers usually owned by the CDN, but sometimes owned by DISH or EchoStar, over private networks or the public Internet, to the customer's ISP. That connection point (CDN to ISP) requires an agreement between the two providers. The agreement can take several forms: 1) peering – the ISP and the CDN agree to exchange traffic without charging one another and agree generally to a proportion of traffic sent from one party compared to that sent by the other; 2) paid peering – the same as above but with compensation typically paid by the CDN to the ISP; or 3) interconnection – essentially the same

as paid peering except that payment terms tend to be at higher rates. There also are transport agreements, which essentially are agreements to move data between networks. A CDN can, and often does, operate under all of these different types of arrangements at any given time with various ISPs and other network element providers.

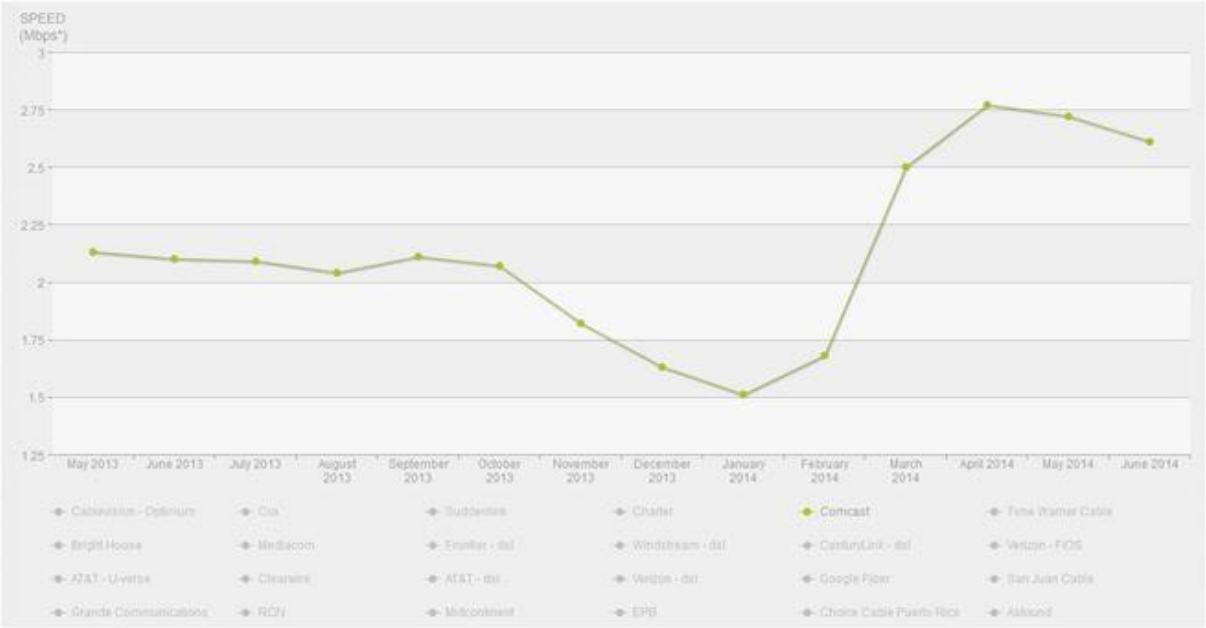
66. DISH currently does not provide its own CDN service. We enter into agreements with Level 3 and other providers for long-haul transport and CDN agreements with a range of providers for connectivity to the subscriber ISP and the last mile.

67. Choke point #1 – interconnection. Comcast/TWC would be able to degrade the performance of DISH's broadband-enabled services by slowing DISH's data as it enters the residential broadband network at the interconnection point.

68. Comcast and TWC today enter peering and interconnection agreements, allowing data traffic onto their residential broadband networks. Each firm has the ability to reduce the performance of competing video providers' services by, for example, refusing to install a sufficient number of network data ports and therefore slowing the bit rate required for HD video. The combined firm would not only retain such ability but, by virtue of its unparalleled share of the market, be in a position to make outlandish demands of, and unreasonable rates from, any CDN wishing to exchange traffic originated by DISH or another of the merged company's competitors. It could also even refuse to accept such data onto its network.

69. The current dispute between Netflix and Comcast is instructive. The chart below, generated from Netflix's website, demonstrates the rapid drop in video quality experienced by Netflix subscribers using Comcast's broadband service, followed by a steep increase in quality when Netflix and Comcast reached an agreement. While Netflix has publicly asserted that these changes in service quality were directly attributable to Comcast's behavior, I cannot make that statement as an outside party. Based on personal knowledge, however, I can state that DISH

World's service quality to its subscribers using Comcast broadband did not experience the same changes, and in fact, DISH World showed a steadily increasing level of service quality over the same period. This suggests that at the very least, different OTT service providers experience different levels of service on the Comcast residential broadband network. Regardless of what may have happened to Netflix, Comcast, from a technical standpoint, is in a position to decide which OTT providers experience service degradation at the point of interconnection, and which do not.



SOURCE: Netflix, USA ISP Speed Index Results Graph, Date Range May 2013-June 2014, *available at* http://ispspeedindex.netflix.com/results/usa/graph.

70. Choke point #2 – public Internet packet prioritization. Comcast can also discriminate against certain Internet Protocol packets using deep packet inspection, jitter, port-blocking, and other means. The communication protocols used on the Internet describe how packets contain source and destination addresses; source addresses can usually be linked to a specific website or a specific video service, such as DISH World or DISH Anywhere. With the information available from inspecting and analyzing their customer's communications,

Comcast/TWC could choose to prefer or to delay certain packets over others, and thus, certain streams of content or certain applications over others. Some of the methods Comcast/TWC could use to discriminate against Sling or DISH IP VOD, for example, include inspection of MAC addresses of devices, protocol type, message headers, or payload type.

71. Choke point #3 – managed services. Comcast/TWC also would be able to divide its broadband pipe into discrete "lanes" where it could direct packet traffic and render some lanes slower due to congestion, over-promise, or whim. Some of these lanes could contain so-called "managed services," which in essence means preferential treatment for the data packets directed into the managed services category, probably the combined companies' own proprietary services. Comcast/TWC, as the network operator, would be the sole arbiter of which lane may proceed, and at what speed.

72. The methods of discrimination explained above address the manner in which a combined Comcast/TWC would achieve degradation of DISH's service performance on their residential broadband network. The combined firm also would be able to thwart the competitiveness of DISH's broadband-enabled services through myriad marketing and business practices.

73. Data caps. As explained above, HD Internet video requires a significant amount of bandwidth. Comcast/TWC could render DISH's services uncompetitive simply by limiting the amount of data any given subscriber could use. If we assume a 5 Mbps data rate needed to watch HD video delivered via the Internet, and if we further assume a typical household TV is viewed 6 hours a day, this translates into about 405 Gigabytes of data (5 Mbps = 2.25 Gigabytes used per hour; 2.25 Gigabytes x 6 hours x 30 days = 405 Gigabytes/month).

74. It is my understanding that Comcast is considering imposing data caps ranging from 250-300 Gigabytes on subscribers (and has already done so in select markets), meaning that

once a consumer reaches that cap, their data service ceases to function unless the consumer agrees to pay more.[22] If Comcast/TWC were to impose data caps ranging from 250-300 Gigabytes per month, such a cap would be well below what would be required to provide an average TV household with enough data to support online video consumption. Since online video represents a threat to the Comcast/TWC core pay-TV business, capping total data usage in such a way to render online services insufficient to meet consumers' needs would neatly dispose of the threat. Moreover, Comcast/TWC could establish a policy whereby subscribers' use of the Comcast proprietary online video services, such as Xfinity, would not count towards the data cap, thus encouraging use of the Comcast/TWC proprietary service and discouraging use of competing OTT services.

75. Foreclosure of Comcast/NBCU content. We also are concerned that post-merger Comcast/TWC will have an even greater incentive to foreclose or raise prices on its own affiliated NBCU content to the detriment of competition and consumers.

76. Digital content licensing restrictions. Because the combined Comcast/TWC would have much greater scale than any other pay-TV provider, it will possess the leverage and incentive to restrict the ability of third-party programmers to grant online rights to competing

[22] Although Comcast generally does not impose a hard cap for all subscribers today, it has launched data cap trials in select markets. In particular, Comcast reports it is testing a "monthly data usage plan for XFINITY Internet Service in the following areas: Huntsville and Mobile, Alabama; Atlanta, Augusta and Savannah, Georgia; Central Kentucky; Maine; Jackson, Mississippi; Knoxville, Nashville and Memphis, Tennessee; Charleston, South Carolina; Tucson, Arizona." *See* Comcast, *Questions & Answers About Our New Data Usage Plan Trials* (May 29, 2014), *available at* http://customer.comcast.com/help-and-support/internet/data-usage-trials. Depending on the market, it appears the data cap would be approximately 300 GB, with incremental charges when the cap is exceeded. *See* Comcast, *What will happen if I exceed my data usage plan?* (May 30, 2014), *available at* http://customer.comcast.com/help-and-support/internet/data-usage-trials-exceed-usage ("Once you have incurred charges for exceeding your data usage plan amount, you will automatically be charged $10 each time we provide you with up to an additional 50 GB of data. . . You will be provided with in-browser and email notifications as you near the data usage plan amount (*e.g.*, 300 GB per month).").

OTT services, like DISH's. DISH already has experienced difficulties in obtaining certain OTT rights from third-party programmers due to restrictive contractual limitations imposed by Comcast on such programmers. Post-merger, we believe that Comcast/TWC will have an even greater incentive and ability to impose such restrictions.

77. Bundling. Comcast and TWC today offer stand-alone broadband service at a certain price but also offer that same broadband service at a discount when combined with the traditional pay-TV service. This so-called "bundled discount," better characterized as a "broadband-only penalty," could be used anti-competitively post-merger against DISH's OTT services to an even greater extent than exists today. In general, Comcast and TWC charge more for broadband Internet access when purchased as a standalone service than when it is bundled with other services such as TV or phone. And, at any time, Comcast or TWC could choose to charge any price it wished to for standalone broadband compared to a bundled product, in order to steer consumers towards using Comcast or TWC for all of their media and communications needs. The greater the delta between those two options, the greater the pain felt by the consumer by purchasing stand-alone broadband without also purchasing the pay-TV service. In this way, the combined Comcast/TWC could prevent revenue losses when subscribers leave the core pay-TV service for competing, broadband-enabled services. I do not believe that commitment to a standalone broadband product at a minimum speed is enough to dispel this concern.

78. Combined firm more harmful than pre-merger companies. In sum, I believe that the increased power of the combined Comcast/TWC to act as a gatekeeper between Internet-delivered competitive services and their would-be subscribers on the Comcast/TWC broadband network would reduce much of the competition emerging in today's video industry. Stated simply, if a single ISP controls 10-20 percent market share and thwarts DISH's ability to sell broadband-enabled video services to subscribers, that is an annoyance. If it controls 40 or 50

percent, it is fatal. We will not be able to offer a competitive service, or perhaps even access our would-be customers.

79. Conditions cannot alleviate the harms from the merger. I am aware of Comcast's current merger conditions imposed in conjunction with its NBCU acquisition, and Comcast's current proposal to import these conditions to all acquired TWC systems. I do not believe, however, that this would be adequate to alleviate the harms that will be caused if the merger is approved. Nor are there additional conditions or divestures that could alleviate these harms, particularly, with respect to Comcast/TWC's incentive and ability to use the three "choke points" on its broadband pipe to stifle OTT services.

80. As the Netflix quality of service dispute illustrates, there can be different opinions as to who is at fault for a sudden decrease in service quality. Netflix and Comcast blame each other, while consumers experience lower service quality. The amount of time needed to resolve such a dispute at the FCC would render the final verdict moot. Consumers would have suffered in the process, and even if the complaining party were to prevail over Comcast, by the time the FCC came to a final conclusion, the competitive harm would have been done. If it took three years to resolve Bloomberg's complaint over a simple condition to place its channel adjacent to CNBC on the EPG, an easily identifiable and measurable requirement. A more technical and complicated dispute surely would take longer to resolve. Such delay would deny the complainant any real relief.

81. A residential broadband provider of the size and scale of a combined Comcast/TWC would be able to devise an endless array of discriminatory tactics designed to thwart its competition. Today's behavioral condition will be circumvented tomorrow in some ingenious way. The myriad ways a combined Comcast/TWC could thwart competition, and the

incentive for them to do so, is both stunning and unprecedented. With conditions unable to protect competition and consumers, the FCC should reject the proposed merger.

* * *

The foregoing declaration has been prepared using facts of which I have personal knowledge or based upon information provided to me. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief. Executed on August 25, 2014.

Roger Lynch
Executive Vice President, Advanced Technologies and International Group
DISH Network Corporation

EXHIBIT B:
DECLARATION OF PROFESSOR DAVID SAPPINGTON

THE ANTICOMPETITIVE EFFECTS OF THE PROPOSED MERGER OF COMCAST AND TIME WARNER CABLE

Professor David Sappington

AUGUST 25, 2014

TABLE OF CONTENTS

THE ANTICOMPETITIVE EFFECTS OF THE PROPOSED MERGER OF COMCAST AND TIME WARNER CABLE

Professor David Sappington

I, David Sappington, being over 18 years of age, swear and affirm as follows:

I. INTRODUCTION

A. Qualifications.

1. My name is David Sappington. I hold the titles of Eminent Scholar in the Department of Economics and Director of the Robert F. Lanzillotti Public Policy Research Center, both at the University of Florida.

2. Since earning my Ph.D. in economics from Princeton University, I have served on the faculties of the University of Michigan and the University of Pennsylvania and on the technical staff of Bell Communications Research. I have also served as the Chief Economist for the Federal Communications Commission and as the President of the Industrial Organization Society. I presently hold positions on the editorial boards of six major journals, including the *Journal of Regulatory Economics*, the *Rand Journal of Economics*, the *Review of Network Economics*, and the *Journal of Economics and Management Strategy*.

3. My research focuses on the optimal design of incentive structures, with particular emphasis on the design and implementation of regulatory policy. I have published more than one hundred and fifty articles in leading journals in the profession and have coauthored a book on *Designing Incentive Regulation for the Telecommunications Industry*. My curriculum vitae appears in Attachment B to this declaration.

B. Purpose of this declaration.

4. I have been asked by DISH Network Corporation ("DISH") to assess whether the proposed merger of Comcast Corporation ("Comcast") and Time Warner Cable, Inc. ("TWC") would serve the public interest. In performing my assessment, I have reviewed both the redacted and the highly confidential versions of the *Applications and Public Interest Statement* of Comcast and TWC ("the Application"), including the report of Drs. Rosston and Topper and the

report of Dr. Israel. I have also reviewed the declaration of Mr. Roger Lynch and the sources cited in Attachment A to this declaration.

5. My review of these documents leads me to conclude that the merger would not serve the public interest, in part because the merger would substantially increase Comcast's incentive and ability to impede the access of online video programming distributors ("OVDs") to Comcast's broadband customers. The merger also would increase Comcast's incentive to hinder the access of rival multi-channel video programming distributors ("MVPDs") to valuable programming content – both content affiliated with Comcast and content available from third-party programmers. The proposed transaction would promote these undesirable outcomes by endowing Comcast with control over access to a large fraction of the nation's subscribers to high-speed broadband service, thereby empowering Comcast to pursue its heightened financial incentive to withhold from OVDs and MVPDs factors of production that are crucial to their success. The merger would thereby lessen competition in relevant markets and reduce industry innovation.[1]

C. Outline of report.

6. This declaration provides a detailed explanation of my conclusion that the proposed merger would not serve the public interest. Section II reviews the Applicants' (i.e., Comcast's and TWC's) unrealistically rosy assessment of the effects of the proposed merger. Section III reviews one cause of the unduly rosy assessment, namely the inappropriate market definitions suggested in the Application. Section IV provides a more realistic assessment of the likely effects of the merger, explaining why the proposed merger would increase Comcast's incentive and ability to impede the access of OVDs to Comcast's broadband customers. Section IV also explains why the merger would enhance Comcast's incentive to hinder the access of both OVDs and rival MVPDs to valuable programming content. In addition, Section IV explains why, if the proposed merger were approved, even the most artfully crafted regulatory rules would not preclude undesirable sabotage of OVDs and MVPDs. Section V provides concluding observations, noting that prohibition of the proposed transaction would avoid a significant

[1] Section 7 of the Clayton Act prohibits an acquisition where "the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly" (15 U.S.C. § 18). As the U.S. Department of Justice ("DOJ") has observed, "Antitrust law, including Section 7 of the Clayton Act, … ensures that firms do not acquire the ability to stifle innovation." DOJ, 2011, p. 20.

diminution of competition and innovation, and thereby serve the public interest.

II. THE APPLICANTS' ROSY VIEW OF THE EFFECTS OF THE PROPOSED MERGER

7. The Applicants paint a very rosy picture of current industry conditions and the conditions that would prevail if Comcast were permitted to merge with TWC. In particular, the Applicants contend that Comcast presently has no incentive to sabotage OVDs, and that its merger with TWC would not increase its ability or its incentive to sabotage OVDs. The Applicants' contentions, which directly contradict many of the Commission's own observations and those of the U.S. Department of Justice ("DOJ"), primarily reflect the following seven assertions:

8. First, the Applicants assert that OVD sabotage is not profitable for Comcast because it would compromise user experience with Comcast's broadband service and tarnish Comcast's image, and thereby induce many of its customers to select alternative suppliers of broadband services.[2] Second, the Applicants argue that sabotage is difficult to implement and to target at selected OVDs.[3]

9. Third, the Applicants contend that no serious problems with regard to OVD sabotage have arisen in recent years, and thus are unlikely to arise in the future.[4] Fourth, the Applicants claim the proposed transaction would not increase the combined entity's incentive to sabotage

---

[2] To illustrate, Israel suggests that "any attempt by the combined firm to impede or condition edge providers' access to its customers would risk loss of those customers to other broadband providers" (2014, ¶40), which would "impose substantial costs on the combined firm" (2014, ¶31). These costs include the "harm to its reputation, with the effects likely including an increase in consumer churn." Israel, 2014, ¶86. Consequently, "any action that the combined firm might undertake to harm edge providers would degrade its broadband service and reduce the profits it could earn." Application 2014, p. 157.

[3] Israel (2014, ¶83) asserts that "to prevent a particular edge provider's content from reaching its network, Comcast would potentially have to close off a substantial portion of the links into its network (including links to peers and CDNs). In doing so, Comcast would potentially deny its customers access to a substantial amount of content, thus significantly harming its broadband offering and inducing consumers to downgrade their broadband service or switch to other broadband options due to the loss of valuable content." The Applicants further contend that "edge providers have multiple avenues for reaching Comcast's broadband subscribers, undermining Comcast's ability to deny access or degrade service to such providers." Application, 2014, p. 159.

[4] For instance, Rosston and Topper (2014, ¶168) observe that "Comcast has been able to successfully reach programming buying and selling agreements with various content providers and MVPDs/OVDs in the past few years."

OVDs in part because the entity would have a more valuable reputation to protect.[5] Fifth, the Applicants suggest the proposed merger would not increase Comcast's ability to sabotage OVDs, in part because the merger would not enhance Comcast's bargaining power in any relevant way.[6]

10. Sixth, Comcast argues that safeguards are in place to limit any serious problems, should they arise.[7] Seventh, the Applicants assert that the merger would not reduce competition between Comcast and TWC because the two companies do not compete in any relevant markets.[8]

11. The important flaws in each of these assertions are identified in Section IV. First, though, Section III addresses an important element of the final assertion above – the scope of the relevant product and geographic markets in this proceeding.

III. RELEVANT GEOGRAPHIC AND PRODUCT MARKETS

12. The issue of relevant product and geographic markets merits attention because the appropriate delineation of relevant markets permits a more realistic assessment of the likely effects of the proposed merger than the assessment offered by the Applicants.

---

[5] Israel (2014, ¶86) claims that the reputational harm Comcast would suffer if it sabotaged OVDs "may grow as Comcast grows, since problems anywhere in its network, involving any edge provider, may cause reputation harm across Comcast's entire customer base." Consequently, "[t]he combined company will not have the incentive or the ability to degrade or otherwise be a 'bottleneck' for access to its broadband customers." Application, 2014, p. 156.

[6] Specifically, the Applicants suggest that "the transaction will not shift bargaining power in a way that would prevent edge providers from competing effectively, harm consumers, or reduce welfare." Application, 2014, p. 162. Israel (2014, ¶39) asserts that "because Comcast and TWC each offer both broadband and video services today, and offer these services in non-overlapping footprints, this issue [of sabotaging OVDs] is not specific to the proposed transaction."

[7] For instance, the Applicants contend that Comcast's "obligation to abide by all of the Open Internet rules … protects against any anticompetitive concerns arising from the transaction regarding the provision of high-speed Internet access services." Application, 2014, p. 163. Also, Rosston and Topper (2014, ¶168) suggest "the conditions from the NBCUniversal transaction are an additional backstop."

[8] To illustrate, the Applicants assert that "Because Comcast and TWC serve almost entirely distinct geographic areas, … the transaction will not result in any reduction in competition or consumer choice for broadband, video, or voice providers – nor will it increase Comcast's market share in any geographic product market." Application, 2014, p. 138.

A. The product market for high-speed Internet access services identified by the Applicants is overly broad.

13. Citing an earlier statement by the Commission, the Applicants suggest that "the market for high-speed Internet access services includes, among other things, Internet access services provided 'over coaxial cable in the form of cable modem service offered by cable operators, and over copper wires in the form of digital subscriber line ('DSL') services by local exchange carriers.'"[9] The Applicants also argue that "[a]s wireless data speeds continue to increase substantially with the deployment of advanced technology … mobile broadband service is increasingly competing with wireline broadband."[10]

14. This characterization of the relevant product market is overly broad. The broadband services supplied by cable operators such as Comcast and TWC typically are not in the same product market as DSL and wireless broadband. DSL and wireless broadband services typically do not consistently deliver on economical terms the broadband speed and capacity required to ensure a high-quality video experience for households.[11]

15. Roger Lynch, the Executive Vice President of the Advanced Technologies and International Group for DISH, observes that in order to ensure a high-quality video experience, "a typical household relying on the Internet to deliver all video should have no less than 25 Mbps in broadband connectivity."[12] This is because a typical household has multiple devices making demands on the broadband connection, including one or more HD video streams.[13] The Applicants themselves appear to concede this 25 Mbps minimum threshold, citing to an upgrade

---

[9] Application, 2014, p. 134, n. 339.

[10] Application, 2014, p. 141.

[11] Even the Applicants' own witness at a recent Senate hearing concedes that he does not believe wireless is presently a perfect substitute for wireline high-speed broadband service. Cohen, 2014.

[12] Lynch, 2014, ¶36. Akamai (2014, p. 1) observes that "the early consensus is that 4K will demand downstream throughput of 15-20 megabits per second, minimally – and as always, more is better." The European Union's Digital Agenda seeks to ensure "[b]roadband speeds of at least 30 megabits per second for all by 2020." European Commission, 2013, p. 6. The president of the Fiber to the Home Council, Heather Burnett Gold, notes that "the trend toward video over the Internet will accelerate household bandwidth requirements, particularly as broadband subscribers demand better video quality and purchase more devices that connect to their wi-fi routers." St. John, 2013.

[13] Lynch, 2014, ¶36.

of many TWC customers to 25 Mbps service as a significant advantage of the merger.[14] Mr. Lynch also notes that economic delivery of such broadband service typically is limited to wireline suppliers.[15] As Mr. Lynch observes, "[m]ost wireless providers impose very low monthly data caps (e.g., 5 Gigabytes) that quickly would be met by a typical household's video consumption. For example, streaming two HD movies from Netflix would exceed 5 Gigabytes."[16]

16. Mr. Lynch also observes that DSL service does not consistently deliver broadband service in the range of 25 Mbps, and so "is an inadequate substitute for high-speed cable broadband."[17] Mr. Lynch's conclusion in this regard is consistent with the Commission's observation that "DSL service is decreasingly viewed as an equivalent broadband service."[18]

17. Cable executives themselves appear to concur with Mr. Lynch's conclusion. Liberty Media's chairman, John Malone, has noted that "other than in the FiOS area cables pretty much a monopoly."[19] Similarly, Comcast's Chairman and CEO, Brian Roberts, has conceded that Comcast has "one competitor" in its broadband business.[20] Industry observers also agree. For example, Cooper concludes that the relevant product market in the current proceeding includes only "cable modem service, Verizon FiOS and AT&T U-verse."[21]

18. The substantial differences in the non-promotional prices of DSL service and 25 Mbps broadband service constitutes additional evidence that the two services are not in the same product market. Consumers are willing to pay substantially more for 25 Mbps broadband service than for DSL service. To illustrate, the typical monthly charge for DSL service varies between

---

[14] Application, 2014, p. 33.

[15] Lynch, 2014, ¶¶35-43.

[16] Lynch, 2014, ¶41.

[17] Lynch, 2014, ¶38.

[18] FCC, 2013, ¶85.

[19] Liberty Media, 2011, p. 18.

[20] Thomson Reuters, 2011, p. 4. Stuke and Grunes (2014, p. 6) note that "what Brian Roberts said in 2011 remains true in 2014. Comcast has one broadband competitor. That competitor is present in only some of Comcast's geographic markets. And that situation is unlikely to change in the next few years."

[21] Cooper, 2014, p. 6.

$29.99 and $34.95.[22] In contrast, Comcast's regular monthly price for its Xfinity 25 Mbps broadband service typically exceeds $65.[23] TWC's advertised monthly price for its corresponding service is $59.99.[24] Despite these substantial price differences, consumers continue to abandon DSL service for high-speed cable broadband service.[25]

19. These substantial price differences imply that a hypothetical monopoly supplier of 25 Mbps broadband service could profitably raise the price of its service significantly above cost for a nontransitory time period even in the presence of ubiquitous DSL service. Consequently, DSL service, like wireless broadband service, is not in the same product market as 25 Mbps wireline broadband service.

20. Data recently published by the FCC can be employed to estimate the large share of the relevant product market that the combined Comcast-TWC would control if the merger were approved. As Table 1 (below) reports, as of June 30, 2013, there were 21,544,000 residential broadband connections in the U.S. with downstream speeds of at least 25 Mbps ("25M broadband connections"). Approximately 38.52 $(= \frac{19,064}{49,493})$ percent of the total broadband connections supplied by cable companies were 25M broadband connections. Employing the conservative assumption that this same 38.52 percent of Comcast's 2014 broadband subscribers purchase 25M broadband connections, the combined Comcast-TWC would supply 10,746,683 (=

[22] AT&T, 2014; Verizon, 2014.

[23] Comcast, 2014. The price varies by service area.

[24] TWC, 2014.

[25] IHS Technology (2013) reports that "[c]able rules as the main form of broadband Internet access for U.S. households ... Cable connections have been growing at an average of 600,000 connections every quarter for the last two years ... In comparison, DSL … is on the decline. At the end of June 2013, the 31 million DSL connections … had posted a steep decrease of 258,000 lines. DSL has been shrinking by 0.3 percent each quarter for the last year-and-a-half." Leichtman Research Group (2014, p. 1) reports that AT&T and Verizon experienced "a net loss of 3.05 million DSL subscribers" in 2013.

.3852 × 27,900,000) 25M broadband connections.[26] Therefore, Comcast-TWC would control **49.9** ($= \frac{10{,}746{,}683}{21{,}544{,}000}$) percent of 25M broadband connections in the United States.[27,28,29]

	Downstream Speed				
Technology[30]	Less than 3 Mbps	Between 3 & 10 Mbps	Between 10 & 25 Mbps	At least 25 Mbps	TOTAL
Cable	4,308	4,959	21,162	19,064	49,493
FTTP	168	418	3,851	2,306	6,743
aDSL	6,388	13,509	7,049	157	27,103
sDSL[31]	30	*	*	13	43
Other Wireline	3	7	15	4	29
TOTAL	10,897	18,893	32,077	21,544	83,411

Table 1. Broadband Connections by Technology and Downstream Speed.
Entries are in thousands. Data is as of June 30, 2013. Source: FCC, 2014, Table 11, p. 31.

[26] Zachem et al. (2014, p. 2) report that after the proposed divestiture of subscribers, the combined Comcast-TWC would serve 27,900,000 residential fixed broadband subscribers.

[27] This calculation may overstate Comcast-TWC's share of this market to the extent that the 21,544,000 total 25M broadband connections as of June 30, 2013 understate the corresponding number of connections as of early 2014. (The 27,900,000 connections reported by the Applicants reflect data as of March 31, 2014 for Comcast and as of April 17, 2014 for TWC. Zachem et al., 2014, note 2). In contrast, this calculation may understate Comcast-TWC's share of this market to the extent that Comcast-TWC would supply more than 10,746,683 25M broadband connections.

[28] This estimate closely approximates Cooper's (2014, pp. 6-7) projection that the combined Comcast-TWC would serve approximately 49 percent of customers of "true broadband" service, which includes "cable modem service, Verizon FIOS and ATT U-verse."

[29] Corresponding calculations reveal that a combined Comcast-TWC would control 42.3 percent of the residential broadband connections in the U.S. with downstream speeds of at least 10 Mbps and 35.1 percent of the residential broadband connections in the U.S. with downstream speeds of at least 3 Mbps. This latter estimate closely approximates the 35.5 percent share estimated by the Applicants. Zachem et al., 2014, p. 5. As the Applicants acknowledge, though, the FCC has observed that "4 Mbps is the minimum download speed required for HD-quality streaming, HD video conferencing, and two-way online gaming in HD." Israel, 2014, ¶55, note 62.

B. There is a relevant national market for the distribution of high-speed broadband content.

21. Comcast and TWC suggest that they do not compete in any relevant markets because they provide cable and Internet access services in distinct geographic regions.[30] Although local markets have relevance in assessing the merits of the proposed merger, so, too, does the nationwide market for the residential distribution of high-speed broadband content.[31]

22. In order to be commercially viable, an OVD often needs to secure uncompromised access to a large fraction of the nation's residential subscribers to high-speed broadband Internet access.[32] OVDs typically incur large fixed costs in developing a compelling product and can only recover these costs and secure a reasonable return on their investment if they can sell their product on economical terms and conditions to a large number of residential customers.

23. The typical OVD cannot distribute its product directly to viewers. The OVD must rely on suppliers of high-speed broadband service to perform the requisite distribution. If a particular supplier of high-speed broadband service gains control over access to a sufficiently large fraction of the nation's subscribers to this service, then this supplier's uncompromised distribution service becomes essential to the commercial success of the OVD's product. Consequently, such a supplier gains considerable leverage in its interactions with the OVD and can employ this leverage to extract substantial concessions from the OVD.

24. Presently, if an OVD is unable to secure access to Comcast's high-speed broadband subscribers, the OVD can attempt to reach the broadband subscribers of TWC and other Internet Service Providers ("ISPs"). Similarly, if the OVD cannot secure access to TWC's subscribers, it can attempt to reach the subscribers of Comcast and the other ISPs. The OVD may be able to

---

[30] Application, 2014, pp. 1, 138.

[31] In assessing a transaction that would have permitted less concentrated control over the supply of residential broadband service, the DOJ (2000, p. 1) identified as a relevant market "the nationwide market for the aggregation, promotion, and distribution of residential broadband content." Internet service providers ("ISPs") today typically play a less central role in promoting the products of particular OVDs than they did at the turn of the century, as customers today simply create a bookmark or icon or otherwise access directly the content they wish to view regularly. However, ISPs continue to play an indispensable role in distributing OVD content to viewers.

[32] As the DOJ (2000, p. 9) observes, "Content providers produce most broadband content with national distribution in mind, largely in order to maximize the potential number of customers they will reach, thereby maximizing advertising and other revenues."

operate profitably under either of these arrangements. However, if the proposed merger is approved, failure to secure access to the high-speed broadband subscribers of the combined Comcast/TWC leaves access to the broadband subscribers of other ISPs as the OVD's only option. This option may not permit the OVD to operate profitably if the combined subscriber base of the other ISPs is sufficiently small.

25. Thus, a supplier of high-speed broadband service that controls access to a sufficiently large fraction of the nation's subscribers to this service can unilaterally determine the fate of an OVD's product. Consequently, to fully assess the effects of the proposed merger, it is important to assess the increased concentration that the merger would promote in the nationwide market for the residential distribution of high-speed broadband content.

IV. A MORE REALISTIC VIEW OF THE EFFECTS OF THE PROPOSED MERGER

26. Having identified important flaws in the relevant geographic and product markets suggested by the Applicants, I now explain the flaws in the seven assertions that underlie the Applicants' unduly rosy assessment of the likely effects of the proposed merger. I also provide a more realistic assessment of the relevant effects of the proposed transaction.

A. OVD Sabotage can be highly profitable for Comcast.

27. Contrary to the Applicants' claims, Comcast presently has the incentive to sabotage OVDs. (I explain in Section IV.D below how the proposed merger would substantially increase this incentive.) OVD sabotage can enhance Comcast's profit in two distinct ways. First, by reducing the perceived quality of competing video services, OVD sabotage can increase the demand for Comcast's video offerings. Second, OVD sabotage or the credible threat of such sabotage can convince OVDs to accept Comcast's preferred terms and conditions for access to its broadband customers, however unreasonable those terms and conditions might be.

1. Comcast is facing new competition for its video services.

28. For many years, Comcast faced relatively limited competition for its video offerings.[33] In

[33] As the DOJ (2011, p. 28) observes, "Over the last decade, Comcast and other traditional video distributors benefited from an industry with limited competition and increasing prices, in part because successful entry into the traditional video programming distribution business is difficult and requires an enormous investment to create a distribution infrastructure such as building out wireline facilities or obtaining spectrum and launching satellites. Accordingly,

recent years, though, Comcast and other MVPDs have begun to face threats from OVDs as consumers show ever-increasing interest in video programming delivered over the Internet. A recent survey found that 40 percent of U.S. and Canadian subscribers to fixed broadband services were accessing "at least some video programming through so-called 'over-the-top' video services such as Netflix, Hulu, Amazon and iTunes, as well as through a variety of applications for mobile devices through the Internet. [And] for those who are under age 35, the figure jumps to 70 percent."[34] Furthermore, between 2010 and 2013, the number of U.S. households classified as "cord cutters" (because they have high-speed Internet service but no cable or satellite television service) has increased by 44%, from 5.1 to 7.6 million households (Experian, 2013).[35] The increasing popularity of Internet video is expected to continue in the coming years,[36] provided the viewing experience of consumers is not compromised by any diminished quality of the underlying broadband service.[37]

29. Comcast is highly cognizant of the growing popularity of OVD services. As the DOJ has observed, "Many internal documents reflect Comcast's assessment that OVDs are growing quickly and pose a competitive threat to traditional forms of video programming distribution."[38] And because Comcast supplies both high-speed broadband service *and* video services, it is well-positioned to employ the former in an anticompetitive manner to support the latter.

---

additional entry into wireline or DBS distribution is not likely in the foreseeable future. Telcos have been willing to incur some of the enormous costs to modify their existing telephone infrastructure to distribute video, but only in certain areas, and they have recently indicated that further expansion will be limited for the foreseeable future."

[34] St. John, 2013.

[35] Industry observers have noted that "The trend toward obtaining video and audio content via the Internet, and bypassing programming offered by traditional cable and satellite providers, is advancing more quickly than previously believed because of a sea-change in the viewing habits of younger consumers." St. John, 2013.

[36] Cisco Systems (2014, p. 2) estimates that "Internet video to TV will continue to grow at a rapid pace, increasing fourfold by 2018."

[37] As the DOJ (2011, p. 17) observes, "OVDs' future competitive significance depends, in part, on robust broadband capacity." Heather Burnett Gold, Fiber to the Home Council President, notes the importance of "unwavering speed and a noise-free network so that over-the-top services and applications to play flawlessly, without any hesitation or buffering." St. John, 2013.

[38] DOJ, 2011, p. 19.

2. Comcast can limit the new competition for its video offerings by sabotaging OVDs.

30. As explained further below, Comcast has an arsenal of weapons at its disposal that it can employ to reduce the quality of competing OVD services, as perceived by Comcast's broadband customers. By reducing the perceived quality of competitors' video services, Comcast increases the perceived relative quality of its own video offerings.[39] Comcast thereby enhances its profit by reducing the churn of its customers and increasing the amount they will pay for Comcast's video services.

31. Comcast has a particularly strong incentive to sabotage OTT services offered by rival MVPDs such as DISH. Company research reveals that DISH customers who subscribe to both a DISH OTT service and DISH's linear programming are substantially less likely to churn to a competing MVPD than are customers who subscribe only to DISH's linear programming.[40] By foreclosing DISH's OTT services, Comcast can reduce customer affinity for DISH's entire array of video services, and thereby increase customer churn to Comcast's linear programming services.

32. The potential gains from OVD sabotage are widely recognized. For example, the Commission has noted that "By interfering with the transmission of third parties' Internet-based services or raising the cost of online delivery for particular edge providers, telephone and cable companies can make those services less attractive to subscribers in comparison to their own offerings."[41] Similarly, the DOJ has observed that "an inherent conflict exists between Comcast's provision of broadband services to its customers, who may use this service to view video programming provided by OVDs, and its desire to continue to sell them MVPD services."[42]

---

[39] Comcast also can harm OVDs by imposing limits on the amount of data a broadband subscriber can download without paying additional charges. Such "data caps" can be particularly harmful to OVDs if Comcast declares that the data associated with downloading Comcast's over-the-top ("OTT") services – and only this data – does not count toward these caps.

[40] Lynch (2014, ¶14) observes that "the DISH Anywhere features appear to dramatically reduce churn."

[41] FCC, 2010(b), ¶22. The Commission has also noted that a broadband provider "may have economic incentives to block or otherwise disadvantage specific edge providers … to benefit its own or affiliated offerings." FCC, 2010(b), ¶21.

[42] DOJ, 2011, p. 11.

3. OVD sabotage can benefit Comcast by allowing it to extract higher fees for uncompromised access to broadband customers.

33. The direct gains from OVD sabotage identified above are not the only relevant gains. OVD sabotage, or the credible threat of such sabotage, also can enable Comcast to exact from OVDs more favorable terms and conditions for providing uncompromised access to Comcast's broadband customers. As the perceived quality of an OVD service declines, consumers become less willing to subscribe to and pay higher subscription fees for the service. Consequently, an OVD's profit declines as the perceived quality of its video offerings declines. Comcast can reduce the perceived quality of an OVD's video offerings by reducing the speed and consistency with which the underlying packets are delivered to its broadband customers. Consequently, Comcast can threaten to diminish the perceived quality of an OVD's product – and thereby diminish the OVD's earnings – unless the OVD cedes to Comcast's preferred terms and conditions for packet transport.[43]

34. In essence, Comcast can exploit its privileged position as the "gatekeeper" to its broadband customers to extort from OVDs a portion of the incremental profit they can secure from uncompromised access to these customers.[44] Stated differently, once Comcast has established its ability and willingness to sabotage an OVD, Comcast can charge the OVD for the "privilege" of not being sabotaged, i.e., for uncompromised access to Comcast's broadband

[43] Moss (2014, p. 9) refers to the relevant transport as occurring in the "middle market" or "the wholesale market for Internet interconnection … [where] ISP systems interconnect with [Internet backbone providers] and a variety of edge market players such as [content delivery networks], peering intermediaries, and transit providers ... These entities bridge the gap upstream with content providers … and downstream with broadband ISPs."

[44] Netflix observes that "By degrading consumers' experience, Comcast can demand that content providers pay them a toll to avoid congestion and reach their captive subscribers. If content providers cannot effectively reach Comcast subscribers, they cannot compete. So they have little alternative for an uncongested connection unless they agree to Comcast's terms." Libertelli, 2014, pp. 1-2. Level 3 notes that dominant ISPs such as Comcast also can effectively impose access charges on the intermediaries that deliver OVD traffic to the ISPs. Level 3 reports that "large consumer ISPs are refusing to augment their interconnection capacity to improve performance unless Level 3 pays arbitrary access tolls. In other words, they are breaking the Internet, and harming their own customers, in an attempt to extract access tolls for the privilege of reaching those users." Cavender, 2014. Regardless of which entities pay the tolls to the ISP, OVDs will bear the associated cost if intermediaries increase their charges to OVDs in order to recover the tolls they pay to the ISP.

customers.[45] Netflix's interpretation of its recent troubles with Comcast suggests that Comcast is highly cognizant of these potential benefits of OVD sabotage and is not deterred by any associated costs.[46]

35. The Commission is well aware of the undesirable incentives of broadband suppliers to restrict OVD access to broadband customers. The Commission has observed that the "dangers to Internet openness are not speculative or merely theoretical" because "broadband providers have interfered with the open Internet in the past and have incentives and an increasing ability to do so in the future."[47]

B. Broadband competition will not impede Comcast's sabotage of OVDs.

1. OVD sabotage will not substantially reduce Comcast's broadband subscribership.

36. Comcast contends that it would not sabotage OVDs because the costs of doing so would exceed the corresponding benefits. The alleged costs in this instance are the financial losses Comcast would incur as its broadband subscribers switch to a different ISP in response to the comprised access to OVD products that Comcast delivers.

37. In fact, as explained in Section III.A above, most residential customers have little or no meaningful choice among suppliers of high-speed broadband Internet access service. Consequently, in many geographic regions, Comcast's foreclosure of OVDs entails virtually no associated risk of losing broadband subscribers to other ISPs.

---

[45] This conclusion is consistent with the Commission's observation that "broadband providers may have incentives to increase revenues by charging edge providers, who already pay for their own connections to the Internet, for access or prioritized access to end users." FCC, 2010(b), ¶24, footnotes omitted. Similarly, Moss (2014, p. 12) observes that "[a] merged Comcast-TWC could also extract higher tolls from middle market participants for direct or priority access to Comcast-TWC's ISP networks, thus raising their costs."

[46] In its April 2014 letter to Senator Al Franken, Netflix explained how Comcast was "limiting the capacity of connections between its network and other networks, unless the network agrees to pay Comcast for access." Libertelli, 2014, p. 1. Netflix's average streaming speed on Comcast's system more than doubled (from 1.15 Mbps to 2.5 Mbps) after Netflix agreed to terms of interconnection sought by Comcast. Welch, 2014. Welch identifies this outcome as a "great illustration of what happens when Netflix pays off cable providers to speed things up." *Id.*

[47] FCC, 2010(b), ¶¶35, 38.

38. Furthermore, even in areas where a viable alternative to Comcast's broadband service may become available, Comcast's customers often are reluctant to change suppliers due to substantial switching costs. As the Commission has noted, "customers may incur significant costs in switching broadband providers because of early termination fees; the inconvenience of ordering, installation, and set-up, and associated deposits or fees; possible difficulty returning the earlier broadband provider's equipment and the cost of replacing incompatible customer-owned equipment; the risk of temporarily losing service; the risk of problems learning how to use the new service; and the possible loss of a provider-specific email address or website."[48]

39. Consequently, Comcast's sabotage of OVDs, particularly temporary sabotage designed to convince OVDs to accept all of Comcast's preferred terms and conditions, is unlikely to substantially reduce Comcast's broadband subscribership or the fees Comcast can charge for its broadband service. Therefore, this potential drawback to sabotaging OVDs is not a serious deterrent for Comcast.

2. Comcast has not made relevant data publicly available.

40. During the past year, we have experienced time periods in which Comcast's high-speed broadband subscribers have experienced compromised access to Netflix's service. We have also experienced time periods of corresponding uncompromised access to Netflix's service.[49] A careful comparison of the behavior of Comcast's subscribers (e.g., diversion rates and churn) during these distinct periods could provide valuable information about any tendency of subscribers to switch ISPs in response to compromised access to OVD services. Comcast likely has the data required to perform this comparison, but has not made the data publicly available.[50]

C. Comcast can selectively sabotage targeted OVDs.

41. The Applicants also contend that Comcast cannot effectively sabotage a "non-compliant"

---

[48] *Id.*, ¶34, footnotes omitted. These switching costs help to explain why only 21% of surveyed broadband subscribers who believed they had a choice among suppliers said they would seriously consider switching their current supplier. FCC, 2010(a), p. 6.

[49] Ramachandran, 2014.

[50] Comcast also seems likely to have data on broadband subscription patterns that could be useful in assessing the intensity of consumer preferences for higher broadband speed and reliability.

OVD (i.e., an OVD that does not fully accede to Comcast's demands) because Comcast is unable to limit its sabotage to the intended target. This contention appears to directly contradict the views of industry experts, including the Commission. The Commission has noted "broadband providers' ability to make fine-grained distinctions in their handling of network traffic as a result of increasingly sophisticated network management tools."[51]

42. Jeffrey Blum, Senior Vice President and Deputy General Counsel for DISH, observes that Comcast has at least three "choke points" it can employ to selectively degrade the perceived quality of competing video services: "the broadband connection to the consumer [which is] often called the 'public Internet'[,] … the interconnection point, where competitors' video services enter the Comcast broadband network … [and] any managed or specialized service channels, which can act as high speed lanes and squeeze the capacity of the public Internet portion of the pipe."[52] Mr. Lynch explains in detail how Comcast can employ packet prioritization, port blocking, service management, and slowing of targeted data at interconnection points to selectively degrade the quality of targeted OVD services.[53]

43. This evidence suggests that the Applicants substantially understate Comcast's ability to sabotage non-compliant OVDs without simultaneously harming more compliant OVDs, and to thereby reduce industry competition and harm consumers.

D. The proposed merger would substantially increase Comcast's incentive to undertake sabotage, and this increased incentive is merger-specific.

44. The Applicants assert that sabotage concerns are not merger-specific because Comcast and TWC each could undertake sabotage its own operating territory in the absence of the merger.[54] In fact, consummation of the proposed merger would substantially increase the incentive (and ability) of the combined entity to impede competition, and the increased incentive would be merger-specific for at least four reasons.

45. First, the increased subscriber base that Comcast would acquire would increase its

---

[51] FCC, 2010(b), ¶31.

[52] Blum, 2014, pp. 3-4.

[53] Lynch, 2014, ¶¶61-72.

[54] Israel (2014, ¶39) asserts that "because Comcast and TWC each offer both broadband and video services today, and offer these services in non-overlapping footprints, this issue [of sabotaging OVDs] is not specific to the proposed transaction."

financial gain from impeding the delivery of selected packets and withholding key programming. Second, the merger would increase Comcast's financial gain from establishing a credible threat to sabotage OVDs. Third, the more extensive array of Comcast programming that would be available in TWC territories would increase the financial gain from sabotaging OVDs in these territories. Fourth, the merger would reduce the already limited costs of OVD sabotage.

1. The merger would increase Comcast's financial gain from impeding the delivery of selected packets and withholding key programming.

46. By increasing Comcast's potential and actual customer base, the proposed merger would increase Comcast's incentive to sabotage OVDs in at least two respects. First, the merger would increase the financial gain that Comcast could secure by reducing the perceived quality of rival video products, thereby increasing the relative attraction of Comcast's own video offerings. Second, the merger would increase the value of uncompromised access to Comcast's broadband subscribers, and thereby increase the amount OVDs will effectively pay Comcast for such access.

47. The financial gain that Comcast secures by degrading the quality of rival video services becomes more pronounced as the geographic regions in which Comcast is authorized to compete for viewers expands. The potential benefit becomes particularly pronounced as Comcast becomes authorized to operate in major, highly-populated, metropolitan areas such as New York and Los Angeles. The proposed transaction would substantially increase Comcast's actual and potential subscriber base in many geographic regions, including New York and Los Angeles. The proposed transaction would thereby substantially increase Comcast's financial incentive to degrade the perceived quality of rival OVD and MVPD video services.

48. A combined Comcast-TWC could anticipate a more pronounced financial return from sabotaging OVDs than would Comcast and TWC separately in part because of the considerations discussed in Section III.B above. Unlike Comcast and TWC individually, the combined entity may have the potential to preclude the profitable operation of an OVD. By compelling a rival OVD to cease operations, the combined Comcast-TWC can better ensure the continued patronage of its own MVPD subscribers and perhaps attract some of the former customers of the OVD. Furthermore, in settings where Comcast withholds some of its extensive programming assets from rivals and sacrifices potential licensing revenue by doing so, this "investment" in

rival sabotage generates a larger financial return for Comcast when the sabotage helps Comcast secure, retain, or charge higher prices to a larger group of subscribers.

2. The merger would increase Comcast's financial gain from establishing a credible threat to sabotage OVDs.

49. As explained above, Comcast's privileged position as the gatekeeper to many broadband customers enables it to extract from an OVD a fraction of the incremental profit the OVD derives from uncompromised access to Comcast's broadband customers. This incremental profit increases with the number of broadband customers that Comcast serves. In particular, as explained in Section III.B above, once an ISP controls access to a sufficiently large fraction of high-speed broadband subscribers, the access the ISP controls becomes essential for the economic viability of the OVD product.

50. By substantially expanding Comcast's control over access to high-speed broadband subscribers, the proposed transaction would substantially increase the incremental value of uncompromised access to Comcast's broadband customers. The merger would thereby substantially increase the amount an OVD will pay for uncompromised access if it believes failure to pay the fee will result in compromised access. Consequently, the proposed transaction would increase Comcast's incentive to develop a credible threat to impose compromised access on OVDs in order to extract greater concessions from them for uncompromised access.

3. Comcast's more extensive programming will increase incentives for OVD sabotage in TWC territories.

51. Comcast's increased incentive for sabotage is also merger-specific because Comcast controls and offers a more extensive array of video services that compete directly with OVDs than does TWC.[55] The financial gain that a cable company anticipates from sabotaging rival OVDs increases with the extent to which such sabotage will induce consumers to subscribe to or pay more for the cable company's own competing programming and online video services. Many

[55] Lynch observes that while "TWC has invested in a variety of partnerships that enable consumers to access the company's content through a number of OTT devices," Comcast has "developed and deployed its own OTT distribution platform" and "Comcast provides an extensive online library that contains more than 300,000 streaming choices, including 50 live television channels available at XfinityTV.com." Lynch, 2014, ¶¶57-58. The Applicants observe that "Comcast has more extensive programming rights and a broader VOD and online catalog than TWC." Application, p. 73.

OVDs threaten the extensive NBCU programming assets controlled by Comcast. Consequently, if Comcast is permitted to merge with TWC, the combined company (which will inherit the full array of Comcast's programming assets and online video services) will have greater incentive than TWC presently does to sabotage rival OVDs in the current TWC service territory.

4. The merger would reduce the already limited costs of OVD sabotage.

52. As explained in Section IV.B.1 above, Comcast has substantial incentive to sabotage OVDs in part because doing so is unlikely to induce Comcast's broadband subscribers to switch to a different ISP. The merger would further reduce the already limited likelihood of such switching by reducing the potential for comparisons among the service supplied by different ISPs. A Comcast subscriber with a meaningful choice among high-speed broadband suppliers might consider switching ISPs after learning (from an acquaintance, perhaps) that uncompromised popular OVD programming is available on neighboring TWC systems. The merger would eliminate this opportunity for learning, and thereby increase Comcast's incentive for sabotage by reducing the associated cost.[56]

53. In summary, the proposed merger would substantially increase Comcast's incentive to undertake sabotage by increasing the financial benefit of impeding or threatening to impede packet delivery, by increasing the potential return from withholding programming, and by reducing the already limited costs of OVD sabotage.

E. The proposed merger would substantially increase Comcast's ability to sabotage rivals, and this increased ability is merger-specific.

54. The proposed merger also would increase Comcast's ability to sabotage OVDs and rival MVPDs and thereby reduce competition and harm consumers in at least four ways. First, the merger would expand the geographic regions in which Comcast could exercise its relatively pronounced propensity to sabotage OVDs and rival MVPDs. Second, the merger would increase

[56] Furthermore, because many of Comcast's high-speed broadband subscribers have little or no meaningful choice among ISPs, the primary costs that sabotage imposes on Comcast may be costs associated with negative publicity or with explaining its actions to regulators, for example. These costs are unlikely to increase with its expanded scale as rapidly as Comcast's potential financial benefits from sabotage increase with the scale of its operations. Consequently, the expanded scale that Comcast would secure from the proposed merger would increase its incentive for sabotage.

Comcast's leverage in its interaction with OVDs and thereby better position Comcast to sabotage the OVDs. Third, the merger would likely endow Comcast with increased leverage in its dealings with programmers that Comcast could employ to sabotage OVDs and rival MVPDs. Fourth, the merger would make Comcast's sabotage more difficult to detect and deter. For all four reasons, Comcast's increased ability to engage in sabotage, like its increased incentive to do so, is merger-specific.

1. The merger would expand the regions in which Comcast can effectuate its strong anticompetitive incentive and proclivity to sabotage rivals.

55. TWC presently determines the policies that are implemented in its service territories. TWC has not been involved in the same high-profile controversies that have surrounded Comcast in recent years (perhaps because TWC has fewer programming assets than Comcast to protect from competition, as discussed in Section IV.D.3 above). In particular, TWC has not been accused of deliberately impeding OVD access to broadband subscribers. TWC also has not been accused of unfairly disadvantaging direct broadcast satellite ("DBS") by limiting their access to critical programming such as regional sports networks ("RSNs"). The same cannot be said of Comcast.

56. In fact, the DOJ has concluded that "Comcast has withheld its RSN in Philadelphia in order to discriminate against, and thereby disadvantage, DBS providers against which Comcast competes in that city. The DBS providers' market shares are lower and Comcast's subscription fees are higher in Philadelphia than in comparable markets. This appears to have been a profitable strategy for Comcast because the overall benefit to its cable business of retaining subscribers seems to have outweighed the substantial losses associated with failing to earn licensing fees for the withheld RSN from DBS companies."[57]

57. This evidence suggests that Comcast may be more inclined than TWC to test the boundaries of regulatory rules and acceptable industry policy with regard to sabotage. Consequently, by expanding the geographic region in which Comcast determines the prevailing level of sabotage, the proposed merger may invite a broadband supplier with a relatively pronounced propensity to test the boundaries of regulatory rules in its own operating territory to

[57] DOJ, 2011, p. 25. In addition, Caves et al. (2013) show that corresponding incentives prevail quite generally and document empirically the significant effects of these incentives.

test these boundaries more ubiquitously. The merger also would allow a broadband supplier with a heightened incentive to sabotage rivals (in order to protect its extensive programming assets) to effectuate its strong anticompetitive incentive in expanded geographic regions.

2. The merger would increase Comcast's leverage in its dealings with OVDs.

58. As explained in Section III.A above, if the proposed merger were permitted, the combined Comcast-TWC would serve a large share of households that subscribe to the high-speed broadband service required to deliver reliable, high quality OTT services. As explained in Section III.B above, this concentration would endow the combined entity with substantial power in the nationwide market for the distribution of residential high-speed broadband content and in relevant sub-national markets where the target audiences of particular OVDs are concentrated.

59. To reiterate the source of this power, note that Comcast presently can reduce an OVD's earnings by restricting the OVD's access to Comcast's current base of broadband subscribers. However, if it can only preclude access to its current subscriber base, Comcast may not be able to reduce the OVD's earnings to the point where the OVD is unable to operate profitably. In contrast, if Comcast had the ability to deny an OVD access to both Comcast's and TWC's current broadband subscribers, Comcast may well be in a position to preclude profitable operation by the OVD. Such preclusion is particularly likely to become feasible if the OVD's target audience is largely located in the combined operating territories of Comcast and TWC.[58]

60. If the proposed merger were permitted and if an OVD required uncompromised access to Comcast's expanded set of broadband customers in order to operate profitably, the OVD would

[58] DISH's experience provides a case in point. As Lynch observes, the markets of "Philadelphia, New York, Washington, D.C., Chicago, Los Angeles, and Dallas … contain a disproportionately high number of foreign language speakers comprising the target segment of DISH World's foreign language services. Today, if TWC were to block its subscribers' access to DISH World, it would be a significant blow to our competitiveness because we would lose access to, say, Hindi speakers in New York City, Los Angeles, and Dallas. However, we still could sell our DISH World product to Comcast subscribers. Alternatively, if Comcast decided to engage in similar conduct, that, too, would likely be survivable, despite the loss of access to Hindi speakers in Philadelphia, Washington, D.C. and Chicago, because of the availability of unimpeded service in other large markets. Post-merger, however, if a combined Comcast/TWC refused to allow its subscribers to access DISH World, meaning we also would lose access to Hindi speakers in New York City, Los Angeles, Dallas, Philadelphia, Washington, D.C. and Chicago, it would so completely deplete us of our customer base that DISH World would fail economically." Lynch, 2014, ¶51.

have no choice but to accept the terms and conditions that Comcast imposes for uncompromised access to its broadband customers.[59] These terms and conditions likely would limit the ability of OVDs to impose meaningful competitive discipline on Comcast. Consequently, industry competition would be reduced and consumers would be harmed. The stringent demands that Comcast would impose also would likely reduce the earnings that OVDs can secure in the marketplace and thereby reduce their incentive to invest in developing innovative, compelling video services.

61. In evaluating the proposed AT&T/MediaOne merger, the DOJ recognized the increased leverage that expanded control over access to broadband customers can provide. As proposed, the merger would have allowed AT&T to couple its substantial ownership of the largest U.S. supplier of residential broadband service with significant control over the operations of the second largest supplier of these services. The DOJ also identified the potentially anticompetitive consequences of this increased leverage. Specifically, the DOJ observed that the AT&T/MediaOne merger would endow AT&T and its affiliates with

> substantially increased leverage in dealing with broadband content providers, which it could use to extract more favorable terms for such services. [Furthermore, the] increased leverage that AT&T and its affiliates would acquire … could … be used to promote or retard the success of individual content providers. AT&T's ability to promote or retard the success of individual content providers could be used to confer market power on individual content providers favored by AT&T. [In addition, by] exploiting its "gatekeeper" position in the residential broadband market, AT&T could make it less profitable for unaffiliated content providers to invest in the creation of attractive broadband content, and reduce competition and restrict output in that market.[60]

62. The DOJ concluded in this case with strong parallels to the proposed merger of Comcast and TWC that "the proposed acquisition would violate Section 7 of the Clayton Act, 15 U.S.C. §

[59] Ramachandran (2014) reports that Netflix often is not forced to pay for access to the broadband customers of smaller ISPs. Netflix further observes that its recent "agreement with Comcast is the first time that Netflix was forced to pay an ISP for what amounts to access to their subscribers." Libertelli, 2014, p. 2. These observations are consistent with the proposition that an ISP's bargaining leverage increases as its subscriber base increases.

[60] DOJ, 2000, p. 12.

18, by lessening competition in the nationwide market for the aggregation, promotion, and distribution of residential broadband content."[61] Significantly, the DOJ reached this conclusion despite the fact that the two providers served geographically distinct areas.[62]

3. The merger likely would increase Comcast's leverage in its dealings with programmers that Comcast could employ to sabotage rivals.

63. By expanding substantially the number of subscribers to Comcast's linear programming services, the proposed merger also would likely endow Comcast with increased leverage in its dealings with programmers. Comcast could employ this increased leverage to harm its rivals. For example, Comcast could employ its increased bargaining power to encourage programmers to withhold their programming from OVDs and rival MVPDs or make the programming available to these rivals only on relatively unfavorable terms and conditions. Restricted access to programming would reduce the attraction of rival offerings and thereby allow Comcast to charge higher prices for its services, to the detriment of consumers.

64. The DOJ has observed that, "[a]s a cable company, Comcast has the incentive to seek exclusivity provisions that would prevent content producers from licensing their content to alternative distributors, such as OVDs, for a longer period than the content producer ordinarily would find economically reasonable, in order to hinder OVD development."[63]

65. Because the proposed merger is likely to endow Comcast with increased leverage in its dealings with programmers, the potential anticompetitive effects of this increased power merit serious consideration. Dr. Israel notes the theoretical possibility that an increased subscriber base might not enhance bargaining power. However, the very source of empirical evidence that Dr. Israel cites in support of this theoretical possibility itself acknowledges "the received wisdom in the business press is that buyer size confers a bargaining advantage. There is some empirical

---

[61] *Id.* at p. 1.

[62] *Id.* at pp. 4-5.

[63] DOJ, 2011, p. 36. In addition, Moss (2014, p. 10) notes that "[a] combined Comcast-TWC will likely have greater bargaining leverage with upstream sellers of complementary products and services. With fewer attractive alternatives to dealing with Comcast-TWC, content providers could lose bargaining leverage. An outcome of the shift in bargaining power through the potential exercise of buyer market power could be to reduce content providers' profits, and therefore their incentives to invest in quality."

support for the received wisdom: cross-sectional studies have shown that downstream concentration is negatively correlated with upstream profitability."[64]

66. Furthermore, Comcast's own chief financial officer projects a substantial reduction in programming costs "as more favorable rates and terms in some of Comcast's programming agreements supersede some of TWC's existing contracts."[65] At a minimum, this projection supports the common sense notion that cable companies (like Comcast) with larger subscriber bases will tend to enjoy relatively pronounced bargaining power and will employ this power to secure programming on favorable terms and conditions.

67. In theory, if Comcast were to employ its increased bargaining power to secure lower programming costs, it could conceivably pass along some of the cost savings to consumers in the form of lower prices. However, Comcast is unlikely to reduce its prices to any significant extent absent strong competitive pressure to do so. The pronounced ability to sabotage OVDs and rival MVPDs that the proposed merger would bestow upon Comcast would limit the competitive discipline that rivals could impose on Comcast.[66] Consequently, Comcast's reduced programming costs are unlikely to produce lower prices for consumers.[67]

68. The proposed merger also could trigger further industry consolidation. To remain competitive with Comcast, other suppliers may feel compelled to increase their scale in order to enhance their bargaining power and secure lower programming costs.[68] The increased industry

---

[64] Chipty and Snyder, 1999, p. 326. In addition, Netflix observes that "Comcast is already dominant enough to be able to capture unprecedented fees from transit providers and services such as Netflix. The combined company would possess even more anti-competitive leverage to charge arbitrary interconnection tolls for access to their customers. [Furthermore,] Comcast appears willing to sacrifice the quality of its own subscribers' broadband experience to extract fees from the content providers that Comcast's own subscribers are paying Comcast to access. The fact that Netflix paid to protect our consumers is evidence of Comcast's power. Acquiring Time Warner Cable will only increase this leverage." Libertelli, 2014, pp. 2-4.

[65] Angelakis, 2014, ¶7.c.

[66] As the DOJ (2011, p. 24) observes, "higher licensing fees will reduce pricing pressure on Comcast's MVPD business and increase its ability to raise prices to its subscribers."

[67] Even in the absence of sabotage, the proposed merger would limit the ability of rival MVPDs to impose meaningful price discipline on Comcast if the more generous terms that programmers are forced to deliver to the combined Comcast-TWC compel the programmers to charge higher prices to smaller buyers.

[68] Moss (2014, p. 10) notes that "the merger could trigger reactive consolidation throughout the telecommunications-media supply chain." Inderst (2007, p. 908) analyzes formally "the

consolidation would limit the competitive discipline that might otherwise compel industry suppliers to pass on reductions in programming costs to consumers in the form of lower prices. The consolidation would thereby harm consumers as it reduces industry competition.

4. The merger would make sabotage more difficult to detect and deter.

69. The proposed merger would further enhance Comcast's ability to engage in sabotage by making sabotage more difficult to detect and deter. A broadband supplier's sabotage of an OVD often can be detected in part by comparing the OVD's experiences across broadband suppliers. To illustrate, if an OVD regularly experiences serious problems accessing the broadband customers of one particular ISP (ISP C, say) but never experiences corresponding problems with any other ISP, then one might reasonably question whether ISP C might be intentionally limiting the OVD's access to its broadband customers. Such a question seems less germane if the OVD routinely experiences access problems with several ISPs.

70. The proposed merger would reduce the number of independent broadband suppliers that are available to serve as benchmarks when assessing the legitimacy of Comcast's actions. Importantly, the supplier that would be eliminated (TWC) is one of the very few suppliers of sufficient size and scale to serve as a reasonable benchmark for Comcast's activities. Consequently, the merger would likely render the extent and nature of Comcast's sabotage more difficult to detect, prosecute, and deter.[69]

71. Furthermore, by reducing the number of independent broadband suppliers, the proposed merger could facilitate informal supplier agreement about policies that effectively discipline "non-compliant" OVDs. Symmetric adoption of such policies can hinder regulatory efforts to detect OVD sabotage by further limiting useful benchmark comparisons.

72. In summary, the proposed merger would increase Comcast's ability to sabotage OVDs and rival MVPDs by expanding Comcast's cable operating territory (thereby exposing a larger group of subscribers to Comcast's heightened incentive to sabotage rivals), by increasing Comcast's subscriber base and thereby increasing its leverage with both OVDs and

---

different channels through which the exercise of buyer power can both trigger and accelerate further concentration in the downstream (or retail) industry."

[69] Moss (2014, p. 20) further suggests that "[a] larger Comcast-TWC would remove a benchmark for the FCC, not only because there are fewer competitors, but also because the larger firm might more easily resist information demands."

programmers, and by rendering sabotage more difficult to detect and deter. Consequently, the merger would reduce competition, retard innovation, and harm consumers.

F. The merger would preclude future competition between Comcast and TWC.

73. Although TWC does not presently offer its MVPD services in Comcast's cable territories, TWC is well situated to offer competing OTT services in Comcast's territories in the near future. In light of the growing popularity of OVD services and the fact that complementary OTT services can reduce the churn of MVPD customers,[70] TWC likely has substantial incentive to develop OTT services and market them in Comcast's cable territories.[71]

74. This prospective competition is not simply speculative. TWC and Comcast have both developed and are continuing to develop OTT services that could soon be deployed in each other's cable territories. Lynch describes these services[72] and concludes that Comcast and TWC both "appear to be in a position to launch full-fledged OTT services … and to do so nationally."[73] The merger would stop this potential competition in its tracks.

75. A single, combined entity would have less incentive than two independent entities to develop and market a high quality OTT service. When it operates independently, TWC would not be concerned by the fact that its successful launch of an OTT service in Comcast's cable territory might cause Comcast to lose some MVPD customers. In contrast, after merging with Comcast, TWC would be deeply concerned about the loss of MVPD customers in the present Comcast cable territories. For this reason, the merger would reduce TWC's incentive to develop and launch a successful OTT service. For analogous reasons, the merger also would reduce Comcast's incentive to develop and market OTT services.

76. Consequently, the proposed merger would threaten to reduce OVD competition in two important ways. First, the merger would increase Comcast's ability and incentive to sabotage other suppliers of OTT services. Second, the merger would reduce the incentives of both Comcast and TWC to develop and market high quality OTT services.

---

[70] Lynch, 2014, ¶13.

[71] Lynch, 2014, ¶59.

[72] Lynch, 2014, ¶¶56-60.

[73] Lynch, 2014, ¶59.

G. Comcast's post-merger behavior would likely be even more egregious than its recent behavior.

77. Comcast suggests its recent track record provides little cause for alarm, and bodes well for the future. In fact, Comcast's recent interactions with Netflix have generated considerable consternation.[74] Furthermore, Comcast is likely to act even more aggressively toward OVDs if the proposed transaction is approved.

78. Comcast's conflict with Netflix arose even when Comcast was subject to the Open Internet rules and even when Comcast had a strong incentive to refrain from sabotage. In particular, Comcast clearly foresaw the need to convince the Commission and the DOJ that Comcast's proposed merger with TWC would serve the public interest. Comcast therefore had a strong incentive to avoid even the suspicion that it might be engaged in sabotage in order to convince the Commission and the DOJ that it would not abuse the expanded control over access to broadband customers that it would secure via the proposed merger. Netflix's assessment of its troubles with Comcast suggests that Comcast's strong incentive to refrain from sabotage was outweighed by an even stronger incentive to engage in sabotage … an incentive that may have prevailed even in the absence of the proposed merger with TWC.

79. One can only wonder what havoc Comcast might wreak on OVDs and on industry competition more generally if Comcast is permitted to merge with TWC. The approval of this merger would increase Comcast's ability and incentive to sabotage its rivals and at the same time eliminate any restraint Comcast may have exercised as it sought regulatory approval of the merger.

H. Regulatory rules cannot preclude Comcast from limiting industry competition and innovation, particularly if the proposed transaction is consummated.

80. Comcast suggests that the Open Internet rules and the conditions from the Comcast–NBCUniversal transaction will ensure Comcast does not act on its incentive to sabotage its rivals. However well-intentioned they might be, regulatory rules of this sort typically are unable to achieve their goals when relevant incentives are as fundamentally misaligned as they would be in the present instance if the merger were approved.

---

[74] Bloomberg and Project Concord also have filed formal complaints against Comcast in recent years. Moss, 2014. Stucke and Grunes (2014, p. 8) suggest that "fear of retaliation" may render other industry participants reluctant to challenge Comcast publicly.

1. Regulatory rules are unavoidably incomplete or imprecise.

81. A recent review of merger control policy in the U.S. concludes that "the remedies imposed – divestiture and conduct or conditions remedies – are not generally adequate to the task of preserving competition."[75] This conclusion is not surprising, as regulatory rules typically cannot preclude undesirable behavior when industry suppliers anticipate substantial financial gain from such behavior. This is the case in part because it is extremely difficult, if not impossible, to anticipate all relevant forms of undesirable behavior that might arise and to specify detailed, comprehensive rules that will preclude such behavior.

82. Consider the Open Internet rules, for example. It has been noted that while these rules may help to limit one particular type of sabotage, they will not deter other important forms of sabotage. In particular, although the rules may help to deter sabotage at "the last mile interconnection between the ISP provider and the consumer[,] … [t]hey do not apply to the middle market where major adverse effects of the proposed merger are also likely to be felt."[76]

83. More generally, regardless of the amount of time and effort that might be devoted to the design of regulatory rules in the present setting, it would be extraordinarily difficult to anticipate all of the clever ways in which Comcast might circumvent the rules for private gain.[77]

---

[75] Kwoka, 2013, p. 644.

[76] Moss, 2014, p. 18. In addition, Cavender (2014) notes that "the *Open Internet Order* seemed to address only one of the ways ISPs might act on their incentives. Unsurprisingly, some ISPs have taken that as permission to allow Internet performance to deteriorate in order create leverage over edge providers – acting like would-be robber barons for the Internet era, with control over the only means of access to their millions of residential end users."

[77] Stuke and Grunes (2014, pp. 12-13) note that "a partially regulatory solution that is at odds with a company's business strategy is unlikely to work." Moss (2014, p. 18) agrees, noting that "behavioral remedies are fraught with difficulties. … [P]rohibiting certain actions by the firm does not negate the incentive to pursue profit, nor the firm's interest in circumventing the prohibition. For this reason, the type of conduct prohibited by behavioral remedies often goes "underground," or the merged firm develops workarounds to exploit loopholes in the remedies." Lynch (2014, ¶81) observes that a "residential broadband provider of the size and scale of a combined Comcast/Time Warner Cable would be able to devise an endless array of discriminatory tactics designed to thwart its competition" thereby ensuring that "[t]oday's behavioral condition will be circumvented tomorrow in some ingenious way."

2. Comcast can stifle industry innovation even without engaging in extensive sabotage.

84. Regulatory rules that are designed to limit sabotage also may fail to deter Comcast from impeding industry innovation because Comcast can discourage innovation without actually engaging in extensive sabotage. Industry innovation is diminished when OVDs anticipate reduced financial gain from developing superior video services. Such reduced gain arises when Comcast extracts concessions from OVDs for uncompromised access to broadband customers.[78] Once it has established a reputation for sabotaging "non-compliant" OVDs, Comcast will often be able to extract concessions for uncompromised access simply by threatening to impose compromised access if the OVD in question fails to accede to Comcast's demands. No actual sabotage is required if the OVD is convinced that the sabotage will be implemented if it does not comply with Comcast's mandates. Consequently, Comcast's privileged control over access to a large subscriber base (a base that would increase substantially if the merger were permitted), coupled with its corresponding ability to sabotage OVDs, can enable Comcast to extract OVD earnings and thereby diminish OVD innovation without actually engaging extensively in the activities that regulatory rules are designed to prevent.

3. The time and expense required to enforce regulatory rules can reduce competition and impede innovation.

85. Even the most comprehensive and artfully crafted regulatory rules can take time and resources to implement and enforce. Furthermore, these rules can fail to secure desired industry behavior and so can fail to adequately protect consumers.

86. Regulatory rules typically take considerable time to enforce because regulators must gather requisite information and consider the conflicting claims of relevant parties. Consequently, consumers can be harmed for extended periods of time even in the presence of rules that eventually limit undesirable behavior by suppliers like Comcast. Furthermore, even if an OVD were confident that it could ultimately prove Comcast had violated a regulatory rule, the delay and expense required to challenge Comcast's actions could induce the OVD to forego the

[78] As the Commission has observed, "[f]ees for access or prioritization to end users could reduce the potential profit that an edge provider would expect to earn from developing new offerings, and thereby reduce edge providers' incentives to invest and innovate." FCC, 2010(b), ¶26.

challenge.[79] Such reluctance to challenge even highly undesirable behavior is particularly likely when the rules do not promise compensatory rewards to parties that successfully challenge the undesirable behavior. Such rewards are uncommon in practice.[80]

87. The substantial costs associated with identifying and prosecuting undesirable behavior also imply that the behavior may have served its intended purpose by the time the action is ultimately terminated. In particular, having experienced first-hand the true cost of challenging Comcast, an OVD may be reluctant to lodge future challenges, regardless of how egregious Comcast's future actions might be. When OVDs feel powerless to contest Comcast's actions, they will have limited ability to impose meaningful competitive discipline on Comcast.

88. Consequently, even the most effective regulatory rules are unlikely to deter Comcast from stifling industry innovation by effectively charging successful OVDs dearly for uncompromised access to its large – and, if the merger is approved, even larger – base of broadband customers.

89. In summary, regulatory rules typically cannot overcome the problems caused by misaligned incentives. Therefore, it is important to avoid increasing Comcast's incentive (and ability) to engage in sabotage that would reduce competition and stifle industry innovation. Precluding Comcast's proposed merger with TWC will serve this purpose.

V. CONCLUSIONS.

90. The Applicants have painted a very rosy picture of the effects of the proposed merger of Comcast and TWC. The Applicants' portrayal is misleading, at best. In fact, the merger would substantially increase Comcast's incentive and ability to sabotage both its new (OVD) rivals and its old (DBS) rivals. The resulting increased sabotage would reduce industry competition and stifle industry innovation, to the detriment of consumers.

---

[79] Bloomberg and Project Concord challenged Comcast's actions under the Comcast/NBCU merger conditions that were designed to protect unaffiliated programmers and distributors. Both claimants ultimately prevailed in enforcing the merger conditions. However, the process took more than a year for Project Concord and nearly 3 years for Bloomberg, in part due to Comcast's prolonged advocacy.

[80] The enforcement of behavioral rules is also costly for industry regulators. As Moss (2014, p. 18) observes, "behavioral remedies require ongoing oversight, monitoring, and compliance enforcement on the part of the government and a parallel compliance organization within the merged company. Both may involve non-trivial costs."

91. The Applicants claim that the proposed merger would create some efficiencies. However, the claims are largely speculative.[81] Furthermore, the increased incentive and ability to undertake anticompetitive sabotage that the merger would bestow upon Comcast threatens to severely limit industry competition. Consequently, any cost reductions resulting from the merger are unlikely to be passed on to consumers in the form of lower prices, and so the proposed merger would not serve the public interest.

92. Regulatory rules typically are incapable of securing desired behavior when the relevant incentives of industry participants are fundamentally misaligned. By increasing Comcast's incentive and ability to sabotage its rivals, the proposed merger would ensure such fundamental misalignment of incentives. Consequently, even the most comprehensive and artfully crafted regulatory rules will be unable to control the dangerous industry dynamics the merger would set in motion. To limit these undesirable dynamics, the merger should be precluded.

93. By constraining Comcast's incentive and ability to engage in behavior that limits competition and impedes innovation, prohibition of the merger will avoid a significant diminution of competition and innovation. Prohibition of the merger will thereby further the public interest.

* * *

[81] Moss (2014, pp. 15, 17) observes that "many of the parties' claimed efficiencies stray far afield from those that would be merger specific and demonstrably reduce marginal costs. [Furthermore,] it is entirely possible that the very reasons used to justify Comcast-TWC on efficiencies grounds could be the Achilles heel of the merged company. Namely, managers struggle with the complexity of integrating large and complex operations. Many of these problems reduce claimed efficiencies and increase integration costs. They may even go the step further of creating merger-related inefficiencies or spillovers in the form of consumer inconvenience and degraded quality."

The foregoing declaration has been prepared using facts of which I have personal knowledge or based upon information provided to me. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief. Executed on August 25, 2014.

David Sappington
Eminent Scholar, Department of Economics
Director, Robert F. Lanzillotti Public Policy Research Center
University of Florida

Attachment A. References

Akamai, "Streaming Toward Television's Future: A Detailed Look at 4K Video and How Akamai is Making it a Reality," Akamai Topic Paper, April 2014 (http://www.akamai.com/html/awe/login.html?campaign_id=F-MC-23645&curl=/dl/whitepapers /streaming-toward-future-of-television-4k.pdf).

Angelakis, Michael J., *Declaration*, Exhibit 4 in the Comcast Corporation and Time Warner Cable Inc. *Applications and Public Interest Statement*, April 8, 2014.

AT&T, *DSL High Speed Internet*, 2014 (http://www.att.com/shop/internet/internet-service.html#fbid=0RoF33gXl3D) (visited August 12, 2014).

Blum, Jeffrey H., "At a Tipping Point: Consumer Choice, Consolidation and the Future Video Marketplace," Testimony before the Senate Committee on Commerce, Science, and Transportation, 113th Congress, July 16, 2014 (http://www.commerce.senate.gov/public/?a=Files.Serve&File_id=9fec88e6-3dce-4940-9ded-1570b6bb4638).

Cavender, Joseph C., *Letter from Level 3 Communications to Marlene H. Dortch, Secretary, Federal Communications Commission*, GN Docket No. 14-28, GN Docket No. 09-191 (Apr. 24, 2014).

Caves, Kevin W., Chris C. Holt, and Hal J. Singer, "Vertical Integration in Multichannel Television Markets: A Study of Regional Sports Networks," *Review of Network Economics*, 12(1), March 2013, 61-92.

Chipty, Tasneem and Christopher M. Snyder, "The Role of Firm Size in Bilateral Bargaining: A Study of the Cable Television Industry," *Review of Economics and Statistics*, 81(2), May 1999, 326–340.

Cisco Systems, *Cisco Visual Networking Index: Forecast and Methodology, 2013–2018*, White Paper, June 10, 2014.

Cohen, David L., "At a Tipping Point: Consumer Choice, Consolidation and the Future Video Marketplace," Testimony before the Senate Committee on Commerce, Science, and Transportation, 113th Congress, July 16, 2014 (http://www.commerce.senate.gov/public/index.cfm?p=Hearings&ContentRecord_id=b6ff2efd-1203-4b0e-87d5-87edccb63e4d).

Comcast, *Xfinity Internet*, 2014 (http://www.comcast.com/internet-service.html) (visited August 12, 2014).

Comcast Corporation and Time Warner Cable Inc., *Description of Transaction, Public Interest Showing, and Related Demonstrations, Applications and Public Interest Statement* in the Matter of Applications of Comcast Corp and Time Warner Cable Inc. for Consent to Transfer Control of Licenses and Authorizations, MB Docket No. 14-57, April 8, 2014.

Cooper, Mark, "Buyer and Bottleneck Market Power Make the Comcast-Time Warner Merger 'Unapprovable'," Consumer Federation of America Report, April 8, 2014 (http://www.consumerfed.org/pdfs/CFA-Comcast-TW-Merger-Analysis.pdf).

European Commission, *Broadband Coverage in Europe in 2012: Mapping Progress Towards the Coverage Objectives of the Digital Agenda*, Final Report, 2013 (http://ec.europa.eu/information_society /newsroom/cf/dae/document.cfm?doc_id=3647).

Experian, "Cross-Device Video Analysis: Engaging Consumers in a Multi-Screen World," Experian Marketing Services Report, 2013 (http://www.experian.com/marketing-services/cross-device-video-analysis.html?WT.srch=PR_EMS_CrossDeviceVideo_20140415_pressrelease).

Federal Communications Commission, "Broadband Decisions: What Drives Consumers to Switch – or Stick With – Their Broadband Internet Provider," Working Paper, December 2010(a) (https://apps.fcc.gov/edocs_public/attachmatch/DOC-303264A1.pdf).

Federal Communications Commission, *Report and Order*, Preserving the Open Internet, Broadband Industry Practices, GN Docket No. 09-191, WC Docket No. 07-52, Adopted December 21, 2010(b) (FCC 10-201).

Federal Communications Commission, *Fifteenth Report*, Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, MB Docket No. 12-203, Adopted July 19, 2013 (FCC 13-99).

Federal Communications Commission, *Internet Access Services: Status as of June 30, 2013*, Industry Analysis and Technology Division, Wireline Competition Bureau, June 2014 (https://apps.fcc.gov/edocs_public/attachmatch/DOC-327829A1.pdf).

IHS Technology, "Broadband Internet Penetration Deepens in US; Cable is King," December 9, 2013 (https://technology.ihs.com/468148/broadband-internet-penetration-deepens-in-us-cable-is-king).

Inderst, Roman, "Leveraging Buyer Power," International Journal of Industrial Organization, 25(5), October 2007, 908-924.

Israel, Mark A., "Implications of the Comcast/Time Warner Cable Transaction for Broadband Competition," Exhibit 6 in the Comcast Corporation and Time Warner Cable Inc. *Applications and Public Interest Statement*, April 8, 2014.

Kwoka, John E., "Does Merger Control Work? A Retrospective on U.S. Enforcement Actions and Merger Outcomes," *Antitrust Law Journal*, 78(3), Spring 2013, 619-650.

Leichtman Research Group, "2.6 Million Added Broadband from Top Cable and Telephone Companies in 2013," March 17, 2014 (http://www.leichtmanresearch.com/press/031714release.pdf).

Libertelli, Christopher, *Letter to the Honorable Senator Al Franken on Behalf of Netflix*, April 24, 2014 (http://www.franken.senate.gov/files/letter/140424NetflixResponse.pdf).

Liberty Media, *Transcript of the Liberty Media Corporation Quarterly Earnings Conference Call, Q1 2011*, May 6, 2011 (http://www.morningstar.com/earnings/PrintTranscript.aspx?id =27506514).

Lynch, Roger, J., "Declaration," Exhibit A to Petition to Deny of DISH Network Corporation, *Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations For Consent To Transfer Control of Licenses and Authorizations*, Federal Communications Commission MB Docket No. 14-57 (Aug. 25, 2014).

Moss, Diana L., "Rolling Up Video Distribution in the U.S.: Why the Comcast-Time Warner Cable Merger Should Be Blocked," American Antitrust Institute White Paper, June 11, 2014 (http://www.antitrustinstitute.org/sites/default/files/AAI_CC-TWC%20White%20Paper_6-11. pdf).

Ramachandran, Shalini, "Netflix to Pay Comcast for Smoother Streaming," *The Wall Street Journal*, February 23, 2014 (http://online.wsj.com/news/articles/SB10001424052702304834704579401071892041790).

Rosston, Gregory L. and Michael D. Topper, "An Economic Analysis of the Proposed Comcast – Time Warner Cable Transaction," Exhibit 5 in the Comcast Corporation and Time Warner Cable Inc. *Applications and Public Interest Statement*, April 8, 2014.

St. John, David C., "Changes in TV Viewing Habits Likely to Further Push Bandwidth Demands," Fiber to the Home Council Americas, August 1, 2013 (http://www.ftthcouncil.org/ p/bl/et/blogid=3&blogaid=229).

Stucke, Maurice E. and Allen P. Grunes "The Beneficent Monopolist," University of Tennessee, Knoxville, Legal Studies Research Paper #239, April 2014 (http://ssrn.com/ abstract=2416565).

Thomson Reuters, *CMCSA - Comcast Corporation at Morgan Stanley Technology, Media & Telecom Conference*, March 2, 2011. Streetevents Transcript (www.streetevents.com).

Time Warner Cable, *Internet Plans*, 2014 (http://www.cabletv.com/time-warner/internet) (visited August 12, 2014).

U.S. Department of Justice, "Competitive Impact Statement," submitted to the United States District Court for the District of Columbia in *United States of America v. AT&T Corp. and MediaOne Group, Inc.*, Case 1:00CV01176, May 25, 2000.

U.S. Department of Justice, "Competitive Impact Statement," submitted to the United States District Court for the District of Columbia in *United States of America et al. v. Comcast Corp., General Electric Co., NBC Universal, Inc.*, Case 1:11-cv-00106, January 18, 2011.

Verizon, *High Speed DSL Internet Plans*, 2014 (http://www.verizon.com/home/highspeedinternet/high-speed-internet-plans/) (visited Aug. 12, 2014).

Welch, Chris, "Netflix Streaming Speeds on Comcast Jump 65 Percent After Controversial Deal," The Verge, April 14, 2014 (http://www.theverge.com/2014/4/14/5613280/netflix-streaming-speeds-on-comcast-65-percent-faster).

Zachem, Kathryn A. (Comcast), Catherine Bohigian (Charter), and Steve Teplitz (TWC), *Letter to FCC Secretary Marlene H. Dortch*, MB Docket No. 14-57, June 27, 2014 (http://apps.fcc.gov/ecfs/document/view?id=7521351426).

Attachment B. Curriculum Vitae of Professor David Sappington

DAVID E. M. SAPPINGTON

Department of Economics, P.O. Box 117140
University of Florida, Gainesville, Florida 32611-7140

Telephone: (352) 392-3904 E-Mail: SAPPING@UFL.EDU

EDUCATION:

1980	Ph.D.	Economics, Princeton University.
1978	M.A.	Economics, Princeton University.
1976	B.A.	Economics, Haverford College.

PROFESSIONAL EXPERIENCE:

1991 – Present	Eminent Scholar, Department of Economics, University of Florida.
2001 – 2002	Chief Economist, Federal Communications Commission.
1989 – 1990	Matherly Professor of Economics, Department of Economics, University of Florida.
1989 – 1990	District Manager, Economics Research Group, Bell Communications Research.
1988 – 1989	Visiting Lecturer with Title of Full Professor, Department of Economics, Princeton University.
1984 – 1989	Member of Technical Staff, Economics Research Group, Bell Communications Research.
1982 – 1986	Assistant Professor, Department of Economics, University of Pennsylvania.
1980 – 1982	Assistant Professor, Department of Economics and Institute of Public Policy Studies, University of Michigan.

ADDITIONAL POSITIONS:

1999 – Present	Director, Robert F. Lanzillotti Public Policy Research Center, University of Florida.
2009 – Present	Member of Board of Directors, Industrial Organization Society.
2008 – 2009	President, Industrial Organization Society.
2006 – 2007	Vice President, Industrial Organization Society.
1993 – 1998	Associate Director, Public Policy Research Center, University of Florida.
1989 – Present	Senior Research Associate, Public Utility Research Center, University of Florida.

SERVICE ON EDITORIAL BOARDS:

2009 – Present	*The Review of Network Economics*	(Board of Editors).
2009 – Present	*The Review of Industrial Organization*	(Board of Editors).
1997 – Present	*The Rand Journal of Economics*	(Associate Editor).
1995 – Present	*The Journal of Regulatory Economics*	(Associate Editor).
1993 – Present	*Journal of Economics and Management Strategy*	(Co-Editor).
1992 – Present	*Information Economics and Policy*	(Board of Editors).
1983 – 2012	*Economics Letters*	(Advisory Editor).
2001 – 2006	*Journal of Public Policy and Marketing*	(Board of Editors).
1996 – 1999	*The American Economic Review*	(Board of Editors).
1991 – 1994	*The Journal of Industrial Economics*	(Associate Editor).
1991 – 1994	*The Journal of Regulatory Economics*	(Board of Editors).
1988 – 1992	*The American Economic Review*	(Board of Editors).

JOURNAL PUBLICATIONS:

"Strategic Firm Behavior Under a Dynamic Regulatory Adjustment Process," *The Bell Journal of Economics*, Vol. 11(1), Spring 1980, pp. 360-372.

"Precontractual Information Asymmetry Between Principal and Agent: The Continuous Case," *Economic Letters*, Vol. 5(4), November 1980, pp. 371-375.

"Optimal Regulation of Research and Development Under Imperfect Information," *The Bell Journal of Economics*, Vol. 13(2), Autumn 1982, pp. 354-368.

"Sustainability, Entry Restrictions, and Induced Technological Bias," *Quarterly Review of Economics and Business*, Vol. 22(4), Winter 1982, pp. 43-52 (with W. Shepherd).

"Limited Liability Contracts Between Principal and Agent," *Journal of Economic Theory*, Vol. 29(1), February 1983, pp. 1-21.

"Optimal Regulation of a Multiproduct Monopoly with Unknown Technological Capabilities," *The Bell Journal of Economics*, Vol. 14(2), Autumn 1983, pp. 453-463.

JOURNAL PUBLICATIONS (CONTINUED):

"Multi-Agent Control in Perfectly Correlated Environments," *Economics Letters*, Vol. 13(4), November 1983, pp. 325-330 (with J. Demski).

"Optimal Incentive Contracts with Multiple Agents," *Journal of Economic Theory*, Vol. 33(1), June 1984, pp. 152-171 (with J. Demski).

"Incentive Contracting with Asymmetric and Imperfect Precontractual Knowledge," *Journal of Economic Theory*, Vol. 34(1), October 1984, pp. 52-70.

"To Brand or Not to Brand?: A Theoretical and Empirical Question," *The Journal of Business*, Vol. 58(3), July 1985, pp. 279-294 (with B. Wernerfelt).

"Line Item Reporting, Factor Acquisition, and Subcontracting," *The Journal of Accounting Research*, Vol. 24(2), Autumn 1986, pp. 250-269 (with J. Demski).

"On the Timing of Information Release," *Information Economics and Policy*, Vol. 2(4), December 1986, pp. 307-316 (with J. Demski).

"Commitment to Regulatory Bureaucracy," *Information Economics and Policy*, Vol. 2(4), December 1986, pp. 243-258.

"Managing Supplier Switching," *The Rand Journal of Economics*, Vol. 18(1), Spring 1987, pp. 77-97 (with J. Demski and P. Spiller).

"Information, Incentives and Organizational Mode," *The Quarterly Journal of Economics*, Vol. 102(2), May 1987, pp. 243-263 (with M. Riordan).

"Information and Regulation," in *Public Regulation: New Perspectives on Institutions and Policies*, E. Bailey (ed.), MIT Press, 1987, pp. 3-43 (with J. Stiglitz).

Reprinted in *Privatization in Developing Countries*, edited by P. Cook and C. Kirkpatrick. Cheltenham, England: Edward Elgar Publishers, 1999.

"Delegated Expertise," *Journal of Accounting Research*, Vol. 25(1), Spring 1987, pp. 68-89 (with J. Demski).

"Awarding Monopoly Franchises," *The American Economic Review*, Vol. 77(3), June 1987, pp. 375-387 (with M. Riordan).

"Efficient Awards and Standards of Proof in Judicial Proceedings," *The Rand Journal of Economics*, Vol. 18(2), Summer 1987, pp. 308-315 (with D. Rubinfeld).

JOURNAL PUBLICATIONS (CONTINUED):

"Privatization, Information, and Incentives," *Journal of Policy Analysis and Management*, Vol. 6(4), Summer 1987, pp. 567-581 (with J. Stiglitz).

Reprinted in *The Political Economy of Privatization and Deregulation*, edited by E. Bailey and J. R. Pack. Cheltenham, England: Edward Elgar Publishers, 1995.

Also reprinted in *Privatisation and Corporate Performance*, edited by D. Parker. Cheltenham, England: Edward Elgar Publishers, 2001.

"Incentive Schemes with Multiple Agents and Bankruptcy Constraints," *Journal of Economic Theory*, Vol. 44(1), February 1988, pp. 156-167 (with J. Demski and P. Spiller).

"Regulating Without Cost Information: The Incremental Surplus Subsidy Scheme," *International Economic Review*, Vol. 29(2), May 1988, pp. 297-306 (with D. Sibley).

"Optimal Contracts with Public Ex Post Information," *Journal of Economic Theory*, Vol. 45(1), June 1988, pp. 189-199 (with M. Riordan).

Reprinted in *The International Library of Critical Writings in Economics: The Principal Agent Model: The Economic Theory of Incentives*, edited by J. Laffont. Cheltenham, England: Edward Elgar Publishers, 2003.

"Commitment in Procurement Contracting," *The Scandinavian Journal of Economics: Special Issue on Information and Incentives in Organizations*, Vol. 90(3), September 1988, pp. 357 372 (with M. Riordan).

"Profiting from Countervailing Power: An Effect of Government Control," *International Journal of Industrial Organization*, Vol. 6(3), September 1988, pp. 323-333 (with W.J. Adams).

"Regulating a Monopolist with Unknown Demand and Cost Functions," *The Rand Journal of Economics*, Vol. 18(3), Autumn 1988, pp. 438-457 (with T. Lewis).

"Regulating a Monopolist with Unknown Demand," *The American Economic Review*, Vol. 78(5), December 1988, pp. 986-998 (with T. Lewis).

Reprinted in *Critical Ideas in Economics: Economic Regulation*, edited by P. Joskow. Cheltenham, England: Edward Elgar Publishers, 2000.

"Inflexible Rules in Incentive Problems," *The American Economic Review*, Vol. 79(1), March 1989, pp. 69-84 (with T. Lewis).

"Hierarchical Regulatory Control," *The Rand Journal of Economics*, Vol. 18(3), Autumn 1987, pp. 369-383 (with J. Demski).

JOURNAL PUBLICATIONS (CONTINUED):

"Hierarchical Structure and Responsibility Accounting," *The Journal of Accounting Research*, Vol. 27(1), Spring 1989, pp. 40-58 (with J. Demski).

"An Informational Effect When Regulated Firms Enter Unregulated Markets," *The Journal of Regulatory Economics*, Vol. 1(1), March 1989, pp. 35-46 (with T. Lewis).

"Regulatory Options and Price Cap Regulation," *The Rand Journal of Economics*, Vol. 20(3), Autumn 1989, pp. 405-416 (with T. Lewis).

"Second Sourcing," *The Rand Journal of Economics*, Vol. 20(1), Spring 1989, pp. 41-58 (with M. Riordan).

Reprinted in *The International Library of Critical Writings in Economics: The Economics of Defence*, edited by K. Hartley and T. Sandler. Cheltenham, England: Edward Elgar Publishers, 2001.

"Renegotiation and Specific Performance," *Law and Contemporary Problems: Special Issue on The Economics of Contract Law*, Vol. 52(1), Winter 1989, pp. 33-48 (with T. Lewis and M. Perry).

"Countervailing Incentives in Agency Problems," *Journal of Economic Theory*, Vol. 49(2), December 1989, pp. 294-313 (with T. Lewis).

Reprinted in *The International Library of Critical Writings in Economics: The Principal Agent Model: The Economic Theory of Incentives*, edited by J. Laffont. Cheltenham, England: Edward Elgar Publishers, 2003.

"Fully Revealing Income Measurement," *The Accounting Review*, Vol. 65(2), April 1990, pp. 363-383 (with J. Demski).

"Regulating Without Cost Information: Further Thoughts," *International Economic Review*, Vol. 31(4), November 1990, pp. 1027-1029 (with D. Sibley).

"Sequential Regulatory Oversight," *The Journal of Regulatory Economics*, Vol. 2(4), December 1990, pp. 327-348 (with T. Lewis).

"Sharing Productive Knowledge in Internally Financed R&D Contests," *The Journal of Industrial Economics*, Vol. 39(2), December 1990, pp. 187-208 (with S. Bhattacharya and J. Glazer).

"Incentives in Principal-Agent Relationships," *The Journal of Economic Perspectives*, Vol. 5(2), Spring 1991, pp. 45-66.

JOURNAL PUBLICATIONS (CONTINUED):

"Resolving Double Moral Hazard Problems with Buyout Agreements," *The Rand Journal of Economics*, Vol. 22(2), Summer 1991, pp. 232-240 (with J. Demski).

"Oversight of Long-Term Investment by Short-Lived Regulators," *International Economic Review*, Vol. 32(3), August 1991, pp. 579-600 (with T. Lewis).

"Incentives for Monitoring Quality," *The Rand Journal of Economics*, Vol. 22(3), Autumn 1991, pp. 370-384 (with T. Lewis).

"All-or-Nothing Information Control," *Economics Letters*, Vol. 37(2), October 1991, pp. 111 113 (with T. Lewis).

"Technological Change and the Boundaries of the Firm," *The American Economic Review*, Vol. 81(4), September 1991, pp. 887-900 (with T. Lewis).

Reprinted in *The Theory of the Firm*, edited by M. Casson. Cheltenham, England: Edward Elgar Publishers, 1996.

Also reprinted in *The Theory of the Firm: Critical Perspectives on Business and Management*, edited by N. Foss. London: Routledge Publishers, 2000.

"Licensing and the Sharing of Knowledge in Research Joint Ventures," *Journal of Economic Theory*, Vol. 56(1), February 1992, pp. 43-69 (with S. Bhattacharya and J. Glazer).

"Strategic Nonlinear Pricing Under Price Cap Regulation," *The Rand Journal of Economics*, Vol. 23(1), Spring 1992, pp. 1-19 (with D. Sibley).

"Further Thoughts on Fully Revealing Income Measurement," *The Accounting Review*, Vol. 67(3), July 1992, pp. 628-630 (with J. Demski).

"Incentives for Conservation and Quality-Improvement by Public Utilities," *The American Economic Review*, Vol. 82(5), December 1992, pp. 1321-1340 (with T. Lewis).

"Regulatory Incentive Policies and Abuse," *The Journal of Regulatory Economics*, Vol. 5(2), June 1993, pp. 131-141 (with D. Sibley).

"Sourcing with Unverifiable Performance Information," *The Journal of Accounting Research*, Vol. 31(1), Spring 1993, pp. 1-20 (with J. Demski).

"Choosing Workers' Qualifications: No Experience Necessary?," *International Economic Review*, Vol. 34(3), August 1993, pp. 479-502 (with T. Lewis).

JOURNAL PUBLICATIONS (CONTINUED):

"Ignorance in Agency Problems," *Journal of Economic Theory*, Vol. 61(1), October 1993, pp. 169-183 (with T. Lewis).

"An Incentive Approach to Banking Regulation," *Journal of Finance*, Vol. 48(4), September 1993, pp. 1523-1542 (with R. Giammarino and T. Lewis).

"Designing Superior Incentive Regulation: Accounting for All of the Incentives All of the Time," *Public Utilities Fortnightly*, Vol. 132(4), February 15, 1994, pp. 12-15 (with D. Weisman).

"Designing Superior Incentive Regulation: Modifying Plans to Preclude Recontracting and Promote Performance," *Public Utilities Fortnightly*, Vol. 132(5), March 1, 1994, pp. 27-32 (with D. Weisman).

"Supplying Information to Facilitate Price Discrimination," *International Economic Review*, Vol. 35(2), May 1994, pp. 309-327 (with T. Lewis).

"Designing Optional No-Fault Insurance Policies for Health Care Systems," *Journal of Economics and Management Strategy*, Vol. 3(1), Spring 1994, pp. 113-142.

"Designing Incentive Regulation," *Review of Industrial Organization*, Vol. 9(3), June 1994, pp. 245-272.

"Toward a Benchmark for Optimal Prudency Policy," *The Journal of Regulatory Economics*, Vol. 7(2), March 1995, pp. 111-130 (with W. Encinosa).

"Insurance, Adverse Selection, and Cream-Skimming," *Journal of Economic Theory*, Vol. 65(2), April 1995, pp. 327-358 (with T. Lewis).

"Simple Regulatory Policies in the Presence of Demand and Cost Uncertainty," *Information Economics and Policy*, Vol. 7(1), April 1995, pp. 57-73 (with B. Blair and T. Lewis).

"Optimal Industrial Targeting with Unknown Learning-By-Doing," *The Journal of International Economics*, Vol. 38(3/4), May 1995, pp. 275-295 (with E. Dinopoulos and T. Lewis).

"Revisiting the Line-of-Business Restrictions," *Managerial and Decision Economics*, Vol. 16(4), July-August 1995, pp. 291-300.

Reprinted in *Deregulating Telecommunications: The Baby Bells' Case for Competition*, edited by R. Higgins and P. Rubin. Chichester, England: John Wiley & Sons, 1995.

JOURNAL PUBLICATIONS (CONTINUED):

"Explaining the Choice Among Regulatory Plans in the U. S. Telecommunications Industry," *The Journal of Economics and Management Strategy*, Vol. 4(2), Summer 1995, pp. 237-265 (with S. Donald).

"Using Markets to Allocate Pollution Permits and Other Scarce Resource Rights Under Limited Information," *The Journal of Public Economics*, Vol. 57(3), July 1995, pp. 431-455 (with T. Lewis).

"Optimal Capital Structure in Agency Relationships," *The Rand Journal of Economics*, Vol. 26(3), Autumn 1995, pp. 343-361 (with T. Lewis).

"Revisiting the Conditions for Fully Revealing Disclosure," *Journal of Business Finance and Accounting*, Vol. 23(3), April 1996, pp. 487-490 (with J. Demski).

"The Effects of Incentive Regulation in the Telecommunications Industry: A Survey," *The Journal of Regulatory Economics*, Vol. 9(3), May 1996, pp. 269-306 (with D. Kridel and D. Weisman).

Reprinted in *Critical Ideas in Economics: Economic Regulation*, edited by P. Joskow. Cheltenham, England: Edward Elgar Publishers, 2000.

"Potential Pitfalls in Empirical Investigations of the Effects of Incentive Regulation Plans in the Telecommunications Industry," *Information Economics and Policy*, Vol. 8(2), June 1996, pp. 125-140 (with D. Weisman).

"Revenue Sharing in Incentive Regulation Plans," *Information Economics and Policy*, Vol. 8(3), September 1996, pp. 229-248 (with D. Weisman).

"Competition Among Health Maintenance Organizations," *The Journal of Economics and Management Strategy*, Vol. 6(1), Spring 1997, pp. 129-150 (with W. Encinosa).

"Penalizing Success in Dynamic Incentive Contracts: No Good Deed Goes Unpunished?" *The Rand Journal of Economics*, Vol. 28(2), Summer 1997, pp. 346-358 (with T. Lewis).

"Information Management in Incentive Problems," *The Journal of Political Economy*, Vol. 105(4), August 1997, pp. 796-821 (with T. Lewis).

"Choosing Among Regulatory Options in the United States Telecommunications Industry," *The Journal of Regulatory Economics*, Vol. 12(3), November 1997, pp. 227-243 (with S. Donald).

JOURNAL PUBLICATIONS (CONTINUED):

"Access Pricing With Unregulated Downstream Competition," *Information Economics and Policy*, Vol. 11(1), March 1999, pp. 73-100 (with T. Lewis).

"Summarization with Errors: A Perspective on Empirical Investigations of Agency Relationships," *Management Accounting Research*, Vol. 10(1), March 1999, pp. 21-37 (with J. Demski).

"Setting the *X* Factor in Price Cap Regulation Plans," *The Journal of Regulatory Economics*, Vol. 16(1), July 1999, pp. 5-25 (with J. Bernstein).

"Employing Decoupling and Deep Pockets to Mitigate Judgment-Proof Problems," *The International Review of Law and Economics*, Vol. 19(2), June 1999, pp. 275-293 (with T. Lewis).

"Using Subjective Risk Adjusting to Prevent Patient Dumping in the Health Care Industry," *The Journal of Economics and Management Strategy*, Vol. 8(3), Fall 1999, pp. 351-382 (with T. Lewis).

"ACR Reforms to Promote HMO Participation in Medicare + Choice," *Health Care Financing Review*, Vol. 21(1), Fall 1999, pp. 19-29 (with W. Encinosa).

"How to Determine the *X* in *RPI - X* Regulation: A User's Guide," *Telecommunications Policy*, Vol. 24(1), February 2000, pp. 63-68 (with J. Bernstein).

"Contracting With Wealth-Constrained Agents," *International Economic Review*, Vol. 41(3), August 2000, pp. 743-767 (with T. Lewis).

"Motivating Wealth-Constrained Actors," *The American Economic Review*, Vol. 90(4), September 2000, pp. 944-960 (with T. Lewis).

"Optimal Contracting With Private Knowledge of Wealth and Ability," *The Review of Economic Studies*, Vol. 68(1), January 2001, pp. 21-44 (with T. Lewis).

"How Liable Should a Lender Be? The Case of Judgement Proof Firms and Environmental Risk: Comment," *The American Economic Review*, Vol. 91(3), June 2001, pp. 724-730 (with T. Lewis).

"The State of Performance-Based Regulation in the U.S. Electric Utility Industry," *The Electricity Journal*, Vol. 14(8), October 2001, pp. 71-79 (with G. Basheda, P. Hanser, and J. Pfeifenberger).

JOURNAL PUBLICATIONS (CONTINUED):

"The Impact of State Incentive Regulation on the U.S. Telecommunications Industry," *The Journal of Regulatory Economics*, Vol. 22(2), September 2002, pp. 133-159 (with C. Ai).

"Economic Issues at the Federal Communications Commission," *The Review of Industrial Organization*, Vol. 21(4), December 2002, pp. 337-356 (with E. Kwerel, J. Levy, R. Pepper, D. Stockdale, and J. Williams).

"Regulating Horizontal Diversification," *International Journal of Industrial Organization*, Vol. 21(3), March 2003, pp. 291-315.

"The Federal Communications Commission's Competition Policy and Marketing's Information Technology Revolution," *Journal of Public Policy & Marketing*, Vol. 22(1), Spring 2003, pp. 26-34 (with D. Stockdale).

"Incentives for Anticompetitive Behavior by Public Enterprises," *Review of Industrial Organization*, Vol. 22(3), May 2003, pp. 183-206 (with J.G. Sidak).

"The Effects of Incentive Regulation on Retail Telephone Service Quality in the United States," *Review of Network Economics*, Vol. 2(4), December 2003, pp. 355-375.

"Competition Law for State-Owned Enterprises," *Antitrust Law Journal*, Vol. 71(2), December 2003, pp. 479-523 (with J.G. Sidak).

"Competition Policy, Parity Regulation, and Self-Sabotage," *Info*, Vol. 6(1), February 2004, pp. 52-56 (with D. Weisman).

"Efficient Manipulation in a Repeated Setting," *Journal of Accounting Research*, Vol. 42(1), March 2004, pp. 31-49 (with J. Demski and H. Frimor).

"Toward a Synthesis of Models of Regulatory Policy Design with Limited Information," *The Journal of Regulatory Economics*, Vol. 26(1), July 2004, pp. 5-21 (with M. Armstrong).

"Wholesale Pricing and Local Exchange Competition," *Info*, Vol. 6(5), 2004, pp. 318-325 (with L. Wood and W. Zarakas).

"Incentive Regulation and Telecommunications Service Quality," *The Journal of Regulatory Economics*, Vol. 26(3), November 2004, pp. 263-285 (with C. Ai and S. Martinez).

"On the Design of Performance Measurement Plans in the Telecommunications Industry," *Telecommunications Policy*, Vol. 28(11), December 2004, pp. 801-820 (with L. Wood).

JOURNAL PUBLICATIONS (CONTINUED):

"Regulating Service Quality: A Survey," *The Journal of Regulatory Economics*, Vol. 27(2), March 2005, pp. 123-154.

Reprinted in *Developments in the Economics of Privatization and Regulation*, edited by M. Crew and D. Parker. Cheltenham: Edward Elgar Publishing Ltd., 2008.

"Self Sabotage," *The Journal of Regulatory Economics*, Vol. 27(2), March 2005, pp. 155-175 (with D. Weisman).

"Privately-Negotiated Input Prices," *The Journal of Regulatory Economics*, Vol. 27(3), May 2005, pp. 263-280 (with B. Unel).

"Reviewing the Impact of Incentive Regulation on U.S. Telephone Service Quality," *Utilities Policy*, Vol. 13(3), September 2005, pp. 201-210 (with C. Ai).

"On the Irrelevance of Input Prices for Make-or-Buy Decisions," *The American Economic Review*, Vol. 95(5), December 2005, pp. 1631-1638.

"Regulation in Vertically-Related Industries: Myths, Facts, and Policy," *Review of Industrial Organization*, Vol. 28(1), February 2006, pp. 3-16.

"The Effects of Reinsurance in Financing Children's Health Care," *Inquiry*, Vol. 43(1), Spring 2006, pp. 23-33 (with S. Aydede, A. Dick, B. Vogel, and E. Shenkman).

"Regulation, Competition, and Liberalization," *Journal of Economic Literature*, Vol. 44(2), June 2006, pp. 325-366 (with M. Armstrong).

Reprinted in *Developments in the Economics of Privatization and Regulation*, edited by M. Crew and D. Parker. Cheltenham: Edward Elgar Publishing Ltd., 2008.

"Audit Error," *The Journal of Engineering and Technology Management*, Vol. 23(1-2), March – June, 2006, pp. 4-17 (with J. Demski and H. Frimor).

"On the Design of Input Prices: Can TELRIC Prices Ever be Optimal?" *Information Economics and Policy*, Vol. 18(2), June 2006, pp. 197-215.

"On the Merits of Vertical Divestiture," *The Review of Industrial Organization*, Vol. 29(3), November 2006, pp. 171-191.

"Simple Cost-Sharing Contracts," *The American Economic Review*, Vol. 97(1), March 2007, pp. 419-428 (with L. Chu).

JOURNAL PUBLICATIONS (CONTINUED):

"Equity and Adverse Selection with Correlated Costs," *Economics Letters*, Vol. 95(3), June 2007, pp. 402-407 (with R. Desiraju).

"Incentives for Sabotage in Vertically-Related Industries," *The Journal of Regulatory Economics*, Vol. 31(3), June 2007, pp. 235-260 (with D. Mandy).

"Persistence of High Health Care Expenditures among Children in Medicaid," *Medical Care Research and Review*, Vol. 64(3), June 2007, pp. 304-330 (with E. Shenkman, C. Knapp, B. Vogel, and D. Schatz).

"Equity and Adverse Selection," *The Journal of Economics and Management Strategy*, Vol. 16(2), Summer 2007, pp. 285-318 (with R. Desiraju).

"The Bright Side of Supplier Encroachment," *Marketing Science*, Vol. 26(5), September-October 2007, pp. 651-659 (with A. Arya and B. Mittendorf).

"A Note on Optimal Procurement Contracts with Limited Direct Cost Inflation," *Journal of Economic Theory*, Vol. 137(1), November 2007, pp. 745-753 (with L. Chu).

"Outsourcing, Vertical Integration, and Price vs. Quantity Competition," *The International Journal of Industrial Organization*, Vol. 26(1), January 2008, pp. 1-16 (with A. Arya and B. Mittendorf).

"Does the Quality of Care in Medicaid MCOs Vary with the Form of Physician Compensation?" *Health Economics Letters*, Vol. 17(4), April 2008, pp. 545-550 (with T. Quast and E. Shenkman).

"Asset Revaluation Regulation with Multiple Information Sources," *The Accounting Review,* Vol. 83(4), July 2008, pp. 869-891 (with J. Demski and H. Lin).

"The Make-or-Buy Decision in the Presence of a Rival: Strategic Outsourcing to a Common Supplier," *Management Science*, Vol. 54(10), October 2008, pp. 1747-1758 (with A. Arya and B. Mittendorf).

"Procurement Contracts: Theory vs. Practice," *The International Journal of Industrial Organization*, Vol. 27(1), January 2009, pp. 51-59 (with L. Chu).

"Designing Input Prices to Motivate Process Innovation," *The International Journal of Industrial Organization*, Vol. 27(3), May 2009, pp. 390-402 (with Y. Chen).

JOURNAL PUBLICATIONS (CONTINUED):

"Implementing High-Powered Contracts to Motivate Intertemporal Effort Supply," *The Rand Journal of Economics*, Vol. 40(2), Summer 2009, pp. 296-316 (with L. Chu).

"Asset Revaluation Regulations," *Contemporary Accounting Research,* Vol. 26(3), Fall 2009, pp. 843-865 (with J. Demski and H. Lin).

"Equal Pay for Unequal Work: Limiting Sabotage in Teams," *The Journal of Economics and Management Strategy*, Vol. 19(1), Spring 2010, pp. 25-53 (with A. Bose and D. Pal).

"Innovation in Vertically Related Markets," *The Journal of Industrial Economics*, Vol. 58(2), June 2010, pp. 373-401 (with Y. Chen).

"On the Design of Piece-Rate Contracts," *Economics Letters*, Vol. 107(3), June 2010, pp. 330-332 (with A. Bose and D. Pal).

"Contracting with Private Knowledge of Signal Quality," *The Rand Journal of Economics*, Vol. 41(2), Summer 2010, pp. 244-269 (with L. Chu).

"Asymmetric Treatment of Identical Agents in Teams," *The European Economic Review*, Vol. 54(7), October 2010, pp. 947-961 (with A. Bose and D. Pal).

"Price Cap Regulation: What Have We Learned from Twenty-Five Years of Experience in the Telecommunications Industry?" *The Journal of Regulatory Economics*, Vol. 38(3), December 2010, pp. 227-257 (with D. Weisman).

"On the Performance of Linear Contracts," *The Journal of Economics and Management Strategy*, Vol. 20(1), Spring 2011, pp. 159-193 (with A. Bose and D. Pal).

"Pareto-Improving Inefficiency," *Oxford Economic Papers*, Vol. 63(1), January 2011, pp. 94-110 (with A. Bose and D. Pal).

"Exclusive Contracts, Innovation, and Welfare," *The American Economic Journal: Microeconomics*, Vol. 3(2), May 2011, pp. 194-220 (with Y. Chen).

"Managing Planning and Production Moral Hazard," *The Journal of Management Accounting Research*, Vol. 23, 2011, pp. 129-167 (with H. Lin).

"Regulating Regulators in Transitionally Competitive Industries," *The Journal of Regulatory Economics*, Vol. 41(1), February 2012, pp. 19-40 (with D. Weisman).

JOURNAL PUBLICATIONS (CONTINUED):

"Sabotaging Cost Containment," *The Journal of Regulatory Economics*, Vol. 41(3), June 2012, pp. 293-314 (with D. Pal and Y. Tang).

"Designing Optimal Gain Sharing Plans to Promote Energy Conservation," *The Journal of Regulatory Economics*, Vol. 42(2), October 2012, pp. 115-134 (with L. Chu).

"Extreme Screening Policies," *The European Economic Review*, Vol. 56(8), November 2012, pp. 1607-1620 (with A. Bose and D. Pal).

"Motivating Energy Suppliers to Promote Energy Conservation," *The Journal of Regulatory Economics*, Vol. 43(3), June 2013, pp. 229-247 (with L. Chu).

"Competitive Procurement of Auditing Services with Limited Information," *The European Accounting Review*, Vol. 43(3), September 2013, pp. 573-605 (with M. Causholli, R. Knechel, and H. Lin).

"On the Performance of Endogenous Access Pricing," *The Journal of Regulatory Economics*, Vol. 44(3), December 2013, pp. 237-250 (with K. Fjell and D. Pal).

"The Impact of Public Ownership in the Lending Sector," *The Canadian Journal of Economics*, forthcoming (with A. Bose and D. Pal).

"Contracting with Private Knowledge of Production Capacity," *The Journal of Economics and Management Strategy*, forthcoming (with L. Chu).

"Welfare-Enhancing Fraudulent Behavior," *The Review of Accounting Studies*, forthcoming (with H. Lin).

"Motivating Regulated Suppliers to Assess Alternative Technologies, Protocols, and Capital Structures," *The International Journal of Industrial Organization*, forthcoming (with M. Jamison and D. Mandy).

BOOKS/MONOGRAPHS:

Designing Regulatory Policy with Limited Information. London, England: Harwood Academic Publishers, 1987 (with D. Besanko).

Designing Incentive Regulation for the Telecommunications Industry. Cambridge, MA: The MIT Press, 1996 (with D. Weisman).

Information Economics: Critical Concepts in Economics. *Volumes I – IV*. New York, NY: Routledge, 2014 (co-edited with M. Baye).

BOOK CHAPTERS:

"Procurement and Quality Monitoring," in *Incentives in Procurement Contracting*, edited by J. Leitzel and J. Tirole. Westview Press, 1993, pp. 61-70 (with T. Lewis).

"Principles of Regulatory Policy Design," in *Infrastructure Delivery: Private Initiative and the Public Good*, edited by A. Mody. The World Bank, 1996, pp. 79-105.

"Seven Myths About Incentive Regulation," in *Pricing and Regulatory Innovations Under Increasing Competition*, edited by M. Crew. Kluwer Academic Publishers, 1996, pp. 1-20 (with D. Weisman).

"Horizontal Vicarious Liability," in *The Law and Economics of the Environment*, edited by A. Heyes. Edward Elgar Publishers, 2001, pp. 71-91 (with T. Lewis).

"Price Regulation," in *The Handbook of Telecommunications Economics. Volume I: Structure, Regulation, and Competition*, edited by M. Cave, S. Majumdar, and I. Vogelsang. Elsevier Science Publishers, 2002, pp. 225-293.

"Anticompetitive Behavior by State-Owned Enterprises: Incentives and Capabilities," in *Competing with the Government: Anticompetitive Behavior and Public Enterprises*, edited by R. Richard Geddes. Hoover Press, 2004, pp. 1-25 (with J. G. Sidak).

"Recent Developments in the Theory of Regulation," in *The Handbook of Industrial Organization*, *Volume 3*, edited by M. Armstrong and R. Porter. Elsevier Science Publishers, 2007, pp. 1557-1700 (with M. Armstrong).

"Pricing in Network Industries," in *The Oxford Handbook of Regulation*, edited by R. Baldwin, M. Cave, and M. Lodge. Oxford University Press, 2010, pp. 462-499 (with J. Hauge).

BOOK REVIEWS:

"Review of Berg and Tschirhart's *Natural Monopoly Regulation,*" *Managerial and Decision Economics*, Vol. 11(1), February 1990, pp. 70-71.

"Review of Laffont and Tirole's *A Theory of Incentives in Procurement and Regulation,*" *Journal of Economic Literature*, Vol. 32(2), June 1994, pp. 720-721.

"Review of Vogelsang and Mitchell's *Telecommunications Competition: The Last Ten Miles,*" *Information Economics and Policy*, Vol. 9(4), December 1997, pp. 354-357.

"Review of Vogelsang and Mitchell's *Telecommunications Competition: The Last Ten Miles,*" *Review of Industrial Organization*, Vol. 12(5-6), December 1997, pp. 837-840.

"Are Public Enterprises the Only Credible Predators?," *The University of Chicago Law Review*, Vol. 67(1), Winter 2000, pp. 271-292 (with G. Sidak).

"Review of Sclar's *You Don't Always Get What You Pay For: The Economics of Privatization,*" *Journal of Economic Literature*, Vol. 39(2), June 2001, pp. 601-603.

"Review of De Bijl and Peitz's *Regulation and Entry into Telecommunications Markets,*" *Journal of Economic Literature*, Vol. 42(2), June 2004, pp. 538-539.

OTHER PUBLICATIONS:

"Consumer Shopping Behavior in The Retail Coffee Market: A Comment," in *Proceedings of the Federal Trade Commission's Conference on Empirical Approaches to Consumer Protection Economics*, edited by P. Ippolito and D. Scheffman, 1986, pp. 445-446.

"Endogenous Commitment and Regulatory Design: A Comment on Levy and Spiller's *Regulation, Institutions, and Commitment in Telecommunications,*" in *Proceedings of the World Bank Annual Conference on Development Economics*, edited by M. Bruno and B. Pleskovic. The World Bank, 1994, pp. 253-256.

"Comment on R. Geddes' 'Agency Costs and Governance in the United States Postal Service'," in *Governing the Postal Service*, edited by J. G. Sidak. American Enterprise Institute, 1994, pp. 140-143.

"Economic Theory of Regulation," in *The International Encyclopedia of the Social and Behavioral Sciences*, edited by N. Smelser and P. Baltes, Elsevier Science Publishers, 2001.

"Overview of the Special Issue – Marketing's Information Technology Revolution: Implications for Consumer Welfare and Economic Performance," *Journal of Public Policy & Marketing*, Vol. 22(1), Spring 2003, p. 3 (with A. Silk).

"Introduction," to *Information Economics: Critical Concepts in Economics*. *Volumes I – IV*. New York, NY: Routledge, 2014 (with M. Baye).

HONORS AND AWARDS:

2011 – 2013	Research Foundation Professorship, University of Florida.
2003	Distinguished Service Award, Public Utility Research Center, University of Florida.
2000	Faculty Honoree, Anderson Scholars Program, University of Florida.
1998	Professorial Excellence Program Award, University of Florida.
1997 – 1999	Research Foundation Professorship, University of Florida.
1992	Research Achievement Award, University of Florida.
1976	Inducted into the Phi Beta Kappa Society.

REFEREE/REVIEWER FOR:

Accounting Review
Addison Wesley, Publishers
American Economic Journal: Economic Policy
American Economic Review
American Law and Economics Review
American Enterprise Institute
Bell Journal of Economics
Berkeley Electronic Press Journal of Economic Analysis and Policy
Bulletin of Economic Research
Cambridge University Press
China Economic Review
Danish Social Science Research Council
Economic Journal
Econometrica
Economic and Social Research Council
Economic Design
Economic Inquiry
Economics Letters
Economic Theory
Energy Economics
Energy Journal
Encyclopedia of Law and Economics
European Economic Review
European Journal of Operational Research
Games and Economic Behavior
Harcourt Brace, Publishers
International Economic Review
Information Economics and Policy
International Journal of Industrial Organization
International Journal of the Economics of Business
International Review of Law and Economics
Israel Science Foundation
Johns Hopkins University Press
John Wiley, Publishers
Journal of Accounting Research
Journal of the American Statistical Association
Journal of Business
Journal of Competition Law & Economics
Journal of Corporate Finance
Journal of Economic Behavior and Organization
Journal of Economic Dynamics and Control
Journal of Economic Literature
Journal of Economic Theory
Journal of Economics and Business
Journal of Economics and Management Strategy
Journal of Environmental Economics and Management
Journal of Health Economics
Journal of Industrial Economics
Journal of International Economics
Journal of Law and Economics
Journal of Law, Economics and Organization
Journal of Marketing Research
Journal of Policy Analysis and Management
Journal of Political Economy
Journal of Public Economics
Journal of Public Policy and Marketing
Journal of Regulatory Economics
Management Science
Managerial and Decision Economics
Marketing Science
MIT Press
National Science Foundation
Nonlinear Dynamics and Systems Theory
Oxford Economic Papers
Oxford University Press
Princeton University Press
Quarterly Journal of Economics
Quarterly Review of Economics and Business
Rand Journal of Economics
Research Grants Council of Hong Kong
Research in Labor Economics
Review of Economic Studies
Review of Economics and Statistics
Review of Industrial Organization
Review of Network Economics
Sloan Foundation
Southern Economic Journal
Telecommunications Policy
Utilities Policy
World Bank Economic Review

SELECTED ADDITIONAL EXPERIENCE:

1997 – Present	Instructor in *The International Training Program on Utility Regulation and Strategy*, sponsored by The World Bank and Florida's Public Utility Research Center.
2014	Advisor to EPCOR Utilities Incorporated on The Design of Performance Based Regulation in the Energy Sector.
2014	Advisor to Norfolk Southern Corporation on The Design of Regulatory Policy in the Railroad Industry.
2014	Advisor to DISH Network on The Design of Competition Policy in Broadband and Media Markets.
2013 – Present	Advisor and Expert Witness for the Alliance of Automobile Manufacturers On the Design of Legislation Affecting the Automobile Industry.
2013	Advisor to AT&T on The Design of Spectrum Auctions.
2013	Advisor to Telefonica on The Design of Price Cap Regulation in Peru.
2013	Advisor to the National Grid Service Company on The Design of Service Quality Standards in the Electricity Sector.
2011	Advisor to Leap Wireless International on Competition Policy in the Wireless Communications Industry.
2011	Advisor to Telstra Corporation, Ltd. on the Design of Access Pricing Policy in Australia's Telecommunications Industry.
2010	Advisor to COFETEL, Mexico's Telecommunications Regulator, on Competition Policy in Mexico's Communications Industry.
2010	Advisor to the U.S. Federal Communications Commission on Incentive Regulation and Broadband Deployment.
2009	Advisor to the OECD on Competition Policy in Mexico's Communications Industry.
2009	Advisor to Afilias on the Design of Policy to Assign Internet Names and Addresses.

SELECTED ADDITIONAL EXPERIENCE (CONTINUED):

2008 – 2009	Advisor and Expert Witness for AT&T on the Design of Competition Policy in the U.S. Telecommunications Industry.
2008	Member of Advisory Committee to the "Electronic Health Information Exchange Project," sponsored by the National Governors Association.
2008	Advisor to United States Cellular Corporation on the Design of Telecommunications Universal Service Policy.
2007 – 2008	Advisor to United Parcel Service on the Design of Regulatory Policy in the Postal Industry.
2006 – 2007	Advisor to Earthlink, Inc. on the Design of Telecommunications and Internet Competition Policy.
2006 – 2007	Advisor to Telstra Corporation, Ltd. on the Design of Competition Policy in Australia's Telecommunications Industry.
2005 – 2006	Advisor to General Communication, Inc. on the Design of Telecommunications Competition Policy.
2005	Advisor to United Parcel Service on Competition Policy in the U.S. Postal Industry.
2004 – 2005	Advisor to the Antitrust Division of the U.S. Department of Justice on Competition Policy in the Telecommunications Industry.
2004	Advisor to OSIPTEL, Peru's Telecommunications Regulatory Agency, on the Design of Price Cap Regulation
2003 – 2004	Advisor to SBC, Inc. on the Design of Performance Measurement Systems in the U.S. Telecommunications Industry.
2003	Presented Invited Testimony to the President's Commission on the United States Postal Service.
2003	Advisor to General Communication, Inc. on the Design of Universal Service and Competition Policy.
2001	Advisor to CONATEL, Ecuador's Central Regulatory Body on the Design of Telecommunications Policy.

SELECTED ADDITIONAL EXPERIENCE (CONTINUED):

2000 – 2001	Advisor to Ameren UE on the Design of Incentive Regulation for Electric Utilities.
1999 – 2000	Advisor to the Antitrust Division of the U. S. Department of Justice on a Proposed Merger in the Communications Industry.
1998 – 2000	Consultant and Expert Witness for United Parcel Service on Postal Industry Pricing.
1998 – 2000	Advisor to the World Bank on Telecommunications Privatization in Africa.
1996	Consultant and Expert Witness for TELUS Communications, Inc. on the Design of Price Cap Regulation.
1995	Advisor and Expert Witness for GTE-California on Incentive Regulation and Telecommunications Competition Policy.
1992 – 1994	Advisor to the Southern Bell Telephone Company on the Design of Incentive Regulation.
1992	Advisor to the New York State Public Service Commission on Incentive Regulation in the Electric Power Industry.

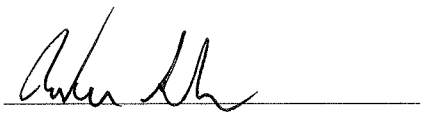
CERTIFICATE OF SERVICE

I hereby certify that, on this 25th day of August 2014, I caused a copy of the foregoing public, redacted version of the Petition to Deny of DISH Network Corporation to be filed electronically with the Commission using the ECFS system and caused a copy of the foregoing to be served upon the following individuals by First Class Mail:

Matthew A. Brill
LATHAM & WATKINS LLP
555 11th Street, NW, Suite 1000
Washington, DC 20004
Counsel for Time Warner Cable Inc.

Francis M. Buono
WILLKIE FARR & GALLAGHER LLP
1875 K Street, NW
Washington, DC 20006
Counsel for Comcast Corp.

Samuel L. Feder
JENNER & BLOCK
1099 New York Ave., NW
Suite 900
Washington, DC 20001
Counsel for Charter Communications, Inc.



Andrew W. Guhr
Steptoe & Johnson LLP