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UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, *Plaintiff*, v. AT&T INC., DIRECTV GROUP HOLDINGS, LLC, and TIME WARNER INC., *Defendants*.	)	Case No. 1:17-cv-02511-RJL

EXPERT REPORT OF DENNIS W. CARLTON

February 2, 2018

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I. QUALIFICATIONS, ASSIGNMENT, AND CONCLUSION

A. QUALIFICATIONS

1. I am the David McDaniel Keller Professor of Economics at the Booth School of Business of The University of Chicago. I received my A.B. in Applied Mathematics and Economics from Harvard University and my M.S. in Operations Research and Ph.D. in Economics from the Massachusetts Institute of Technology. I have served on the faculties of the Law School and the Department of Economics at The University of Chicago and the Department of Economics at the Massachusetts Institute of Technology.

2. I specialize in the economics of industrial organization. I am co-author of the book *Modern Industrial Organization*, a leading text in the field of industrial organization, and I also have published over 100 articles in academic journals and books. In addition, I serve as Co-Editor of the *Journal of Law and Economics*, a leading journal that publishes research applying economic analysis to industrial organization and legal matters; serve on the Editorial Board of *Competition Policy International*, a journal devoted to competition policy; and serve on the Advisory Board of the *Journal of Competition Law and Economics*. I have also served as an Associate Editor of the *International Journal of Industrial Organization* and *Regional Science and Urban Studies*, and on the Editorial Board of *Intellectual Property Fraud Reporter*. I was the 2014 Distinguished Fellow of the Industrial Organization Society.

3. In addition to my academic experience, I served as Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice from October 2006 through January 2008. My responsibilities included supervising approximately 50 Ph.D. economists, helping formulate antitrust policy toward ongoing proposed mergers, analyzing general antitrust policies both horizontal and vertical, and communicating such policies to foreign and domestic agencies, as well as to practitioners. I also served as a Commissioner of the Antitrust Modernization Commission, created by Congress to evaluate U.S. antitrust laws. I have served as a consultant to the Department of Justice and Federal Trade Commission on the Horizontal Merger Guidelines, as a general consultant to the Department of Justice and Federal Trade Commission on antitrust matters, as a member of the American Bar Association advisory

Committee that advises the incoming President on antitrust policy, and as an advisor to the Bureau of the Census on the collection and interpretation of economic data.

4. I also am a Senior Managing Director of Compass Lexecon, a consulting firm that specializes in the application of economics to legal and regulatory issues and for which I served as President (of Lexecon) for several years. I have provided expert testimony before various U.S. state and federal courts, the U.S. Congress, a variety of state and federal regulatory agencies and foreign tribunals. My curriculum vitae, which includes a list of my testifying experience in the last four years, is attached as Appendix A to this report. Compass Lexecon is being paid $1,600 per hour for my work on this matter. Neither my compensation, nor that of Compass Lexecon, is dependent on the outcome of this proceeding. A list of the materials I have relied on is attached as Appendix B.

B. ASSIGNMENT AND CONCLUSION

5. I have been asked by counsel for AT&T Inc. / DIRECTV Group Holdings LLC ("AT&T") and Time Warner, Inc. ("Time Warner") to assess from an economic point of view the likely competitive effects of their proposed merger, in light of the allegations made in the Complaint by Plaintiff, the United States Department of Justice ("DOJ"). In particular, I have been asked to assess whether, as a matter of economics, the proposed merger is likely to substantially lessen competition in video distribution markets, as alleged, and whether consumer welfare would likely be enhanced by enjoining it.

6. I conclude that the proposed merger of AT&T and Time Warner is likely to enhance, not harm, competition in the alleged video distribution markets and the broader video industry. This merger is a vertical transaction that combines the complementary distribution assets, including consumer data, of AT&T with the content assets of Time Warner. It enables the combined firm to realize the same type of vertical efficiencies that are enjoyed by firms such as Netflix and Amazon that have already transformed and are continuing to transform the video marketplace. Furthermore, I see no convincing evidence to support the claim that the merger is likely to cause substantial harm to competition. I thus conclude that blocking the transaction would harm

consumer welfare by impeding innovation, preventing realization of efficiencies, and making the marketplace less competitive than it would be if the merger were consummated.

7. In the remainder of my report, I explain the analysis and evidence that provide the bases for these conclusions.

II. A PROPER ECONOMIC FRAMEWORK FOR ANALYZING CLAIMS THAT THE PROPOSED VERTICAL TRANSACTION WILL HARM COMPETITION

8. Plaintiff claims that the proposed merger will substantially lessen competition in video distribution markets.[1] In this section, I present an economic framework for evaluating this claim. First, I describe the critical differences between horizontal and vertical mergers and why there is substantial economic evidence that vertical mergers are generally pro-competitive. Second, I show that the video industry is an excellent example of the benefits of vertical integration, as evidenced by the fact that successful entrants and competitors today are realizing the benefits of vertical integration into both content and distribution. Third, I explain why one should be skeptical of claims of harm from vertical mergers and present a series of basic questions one should ask when evaluating allegations of harm from a vertical merger. And finally, I present and implement the analytical framework that I will use to analyze the key issues in the assessment of the effects from this proposed vertical merger.

A. Unlike Horizontal Mergers, Vertical Mergers Are Generally Pro-Competitive

9. The proposed merger is vertical, meaning it combines firms at different levels of the production chain—content and distribution—not a horizontal one that combines competitors at the same level of the chain. This fundamental difference must guide all analysis of the merger for at least two reasons.

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1 Complaint, *United States of America v. AT&T, Inc., DIRECTV Group Holdings LLC, and Time Warner Inc.*, Case No. 1:17-cv-02511 (RJL), November 20, 2017 (“Complaint”), ¶ 3.

10. First, horizontal mergers, by definition, eliminate a competitor; for this reason, there is an inherent economic concern that these mergers reduce competition. That is why the Antitrust Division's Horizontal Merger Guidelines focus on identifying those mergers that result in the elimination of a significant competitor and create a presumption that such mergers reduce competition.[2] By contrast, in a vertical merger, every level of the vertical chain retains the same competitors as it had pre-merger, and there is no increase in market concentration at any level of that chain. For this reason, there is no basis for any presumption that vertical mergers will reduce competition.

11. Second, and closely related, the set of assets that come under control of a single owner in a vertical merger are *complements*, not substitutes. This fundamentally changes the economic analysis and helps explain the empirical findings showing that vertical mergers are generally beneficial to competition and consumers.

12. Indeed, in important ways, vertical mergers are the opposite of horizontal mergers with respect to their effects on the merging parties' incentives, and effects on competition In particular:

- Theories of harm in horizontal mergers revolve around the sale of products that are close substitutes. As separate firms, each horizontal competitor has an incentive to lower prices or to make investments in product improvements to steal business from rivals. That incentive is eliminated by a horizontal merger, as the merging parties are no longer attempting to steal business from each other, possibly leading to less overall competition and harm to consumers.

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[2] Competition policy nonetheless permits most horizontal mergers to proceed because mergers may generate substantial efficiencies that cannot be achieved through arm's-length contracts, and those efficiencies often outweigh the anticompetitive effects of horizontal integration. *See, for example*, Herbert Hovenkamp (2008), *The Antitrust Enterprise*, Harvard University Press, pp. 218-219 ("Most mergers produce efficiencies. … The very ubiquity of merger-related efficiencies is why we evaluate mergers under a fairly benign set of rules.").

- In contrast, vertical mergers have an opposite effect on incentives and competition. When two firms offer complementary products—like video content and video distribution—lowering prices or making investments to make one firm's products work better with the other firm's products benefits *both* firms. For example, if one firm produces distinctive cars and the other customized engines, then as the engine becomes better suited to the car, the overall car becomes better. Both the car manufacturer and the engine manufacturer make more sales. When they are separate, however, neither firm receives all of the benefits from lower prices or increased investments; instead, some of the benefits spill over to the other firm. A vertical merger brings the benefits to both firms under one roof, which increases the incentives to lower prices or make investments since the combined firm considers ("internalizes") the full set of benefits when making investment decisions.

- This insight of how vertical mergers generally can create efficiencies, thereby promoting competition and consumer welfare, has been understood for a long time. Nobel Laureates Ronald Coase and later Oliver Williamson both explain that vertical integration can eliminate transaction costs and thereby lead to more efficient coordination than occurred when the firms were separate.[3]

13. By its very nature, vertical integration is simply a decision by a firm about how to organize its production processes. All content providers must obtain distribution, and all video distributors must obtain content, with the decision about whether to "make" or "buy" such services lying at the heart of firms' business strategies.[4] As former Judge Richard Posner has

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3 *See, e.g.*, Dennis Carlton and Jeffrey Perloff (2005), *Modern Industrial Organization*, 4th ed., p. 5.

4 David Besanko, David Dranove, Mark Shanley, and Scott Schaefer (2013), *Economics of Strategy*, 6th Ed., p. 98 ("The production of any good or service, from pop recordings to cancer treatment, usually requires many activities. The process that begins with the acquisition of raw materials and ends with the distribution and sale of finished goods and services is known as the *vertical chain*. A central issue in business strategy is how to organize the vertical chain.").

explained, subjecting such production decisions to excessive scrutiny is likely to disrupt normal business decision making for no good reason:

> *Any time* a firm decides to perform internally a part of the production process that it could have contracted out, it has opted for vertical integration. Were vertical integration deemed a suspect practice under the antitrust laws because of its potential exclusionary effect, all commercial activity would be placed under a cloud as the courts busied themselves redrawing the boundaries of firms, even though the normal motivation for and consequence of vertical integration are merely to reduce the transaction costs involved in coordinating production by means of contracts with other firms.[5]

14. The beneficial nature of vertical integration is broadly recognized by economists and antitrust regulators, including the current and former leadership of the Antitrust Division. For example, a widely cited 2007 survey of the economic literature by Professors Francine LaFontaine (former Director of the Federal Trade Commission's Bureau of Economics from 2014 to 2015) and Margaret Slade concludes: "as to what the data reveal in relation to public policy, we did not have a particular conclusion in mind when we began to collect the evidence, and we have tried to be fair in presenting the empirical regularities. We are therefore somewhat surprised at what the weight of the evidence is telling us. It says that, under most circumstances, profit-maximizing vertical-integration decisions are efficient, not just from the firms' but also from the consumers' points of view. Although there are isolated studies that contradict this claim, the vast majority support it."[6] Bruce Hoffman, Acting Director, Bureau of Competition at the Federal Trade Commission, has stated that "[t]o summarize, overall there is a broad consensus in competition policy and economic theory that the majority of vertical mergers are beneficial because they reduce costs and increase the intensity of interbrand competition. That consensus has support in the empirical research."[7] Luke Froeb, the DOJ Antitrust Division's

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5 Richard A. Posner (2001), *Antitrust Law* 2nd ed., University of Chicago Press, p. 224.

6 Francine Lafontaine and Margaret Slade (2007), "Vertical Integration and Firm Boundaries: The Evidence," *Journal of Economic Literature*, 45(3): 629-685, p. 680.

7 D. Bruce Hoffman, "Vertical Merger Enforcement at the FTC," Credit Suisse 2018 Washington Perspectives Conference, January 10, 2018, p. 4.

current Deputy Assistant Attorney General for Economic Analysis, has concluded that "[i]n most of the empirical studies reviewed, vertical practices are found to have significant pro-competitive effects."[8] Donald Kempf, the Antitrust Division's current Deputy Assistant Attorney General in charge of litigation, has recognized that vertical mergers "are almost never challenged. For good reason."[9] The Federal Trade Commission has urged a strong presumption in favor of vertical integration because "vertical mergers generally raise fewer competitive concerns than do horizontal mergers," "merit a stronger presumption of being efficient than do horizontal mergers," and therefore "should be allowed to proceed except in those few cases where convincing, fact-based evidence relating to the specific circumstances of the vertical merger indicates likely competitive harm."[10] As the Federal Communications Commission ("FCC") explained in approving Comcast's acquisition of NBC Universal ("NBCU"): "It is well accepted in economic theory that … vertical integration of the two likely will lead to lower prices (or higher quality goods) for end-users."[11]

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8 James C. Cooper, Luke M. Froeb, Dan O'Brien, and Michael G. Vita (2005), "Vertical Antitrust Policy as Problem of Inference," FTC Working Paper, *available at*: https://www.ftc.gov/public-statements/2005/02/vertical-antitrust-policy-problem-inference; James C. Cooper, Luke M. Froeb, Dan O'Brien, and Michael G. Vita (2005), "A Critique of Professor Church's Report on the Impact of Vertical and Conglomerate Mergers on Competition," *Journal of Competition Law and Economics* 1(4): 785-795, pp. 785, 794 ("certain transactions, particularly vertical mergers . . . generally have efficiencies that are intrinsic to the transaction and do not result from production cost savings").

9 Antitrust Modernization Commission, Report and Recommendations, April 2007, Separate Statement of Commissioner Kempf, p. 432, *available at* https://govinfo.library.unt.edu/amc/report_recommendation/separate_statements.pdf.

10 FTC, "Roundtable on Vertical Mergers, Note by the United States," OECD Competition Committee, February 15, 2007, *available at:* https://www.ftc.gov/sites/default/files/attachments/us-submissions-oecd-and-other-international-competition-fora/07RoundtableonVerticalMergers.pdf, pp. 2, 10.

11 Federal Communications Commission, Memorandum Opinion and Order, *In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees*, FCC 11-4, MB Docket No. 10-56, January 18, 2011 ("Comcast-NBCU Order"), ¶ 237.

B. THE EMERGENCE OF VERTICALLY INTEGRATED COMPETITORS IN THE VIDEO INDUSTRY ILLUSTRATES THE BENEFITS OF VERTICAL INTEGRATION

15. The conclusion that vertical integration is generally pro-competitive is bolstered by the recent innovations in the video industry. There has been an enormous transformation in the video industry since 2011, when Comcast merged with NBCU, with much of it specifically related to the benefits of vertical integration. Vertical integration allows the information that the distributor learns about what people are watching to be used by the content provider to help create or make available programming that consumers want to watch and by advertisers who seek to reach certain types of viewers. Comcast/NBCU, Netflix, Amazon, Hulu, Apple, and Google are all examples of firms that combine knowledge of what consumers are watching—gained from their role as either a multichannel video programming distributor ("MVPD") or online video distributor ("OVD"[12])—with significant capabilities to create and distribute content.

16. Vertical integration has permitted these firms (and OVDs more generally) to use customer-specific information to improve their content, their distribution, and their advertising.

- As an example of programming synergies, Netflix uses data from the tens of millions of subscribers to its *distribution* service to make well-informed *content* decisions, designing programming that appeals specifically to different types of viewers.[13] Netflix has enjoyed a series of hit shows from *House of Cards* to *Stranger Things*, rapid subscriber growth and made massive investments in programming.
- As an example of advertising synergies, Google/YouTube and Facebook are each starting to combine their newly launched video distribution services with customer data from their respective provision of search and social media services to provide more

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12 I use OVD and OTT (or "over-the-top") interchangeably.

13 NFLX-DOJCID-00000034, Netflix QBR Product Development Report, January 12, 2017 ("Personalization is the key, and as we approach 100M members (perhaps 200M viewers), we should remember that we aren't building Netflix, but 200M distinct Netflixes, each presenting a different subset of the content to a different viewer… Netflix personalization can give us better kids than Disney, better edgy than HBO, better sci-fi than SyFy, and better history than History, and it can do all of those at the same time!").

individually targeted—and thus much more valuable—video advertising than traditional media companies have been able to offer. That higher-value advertising strengthens the already dominant position of Google and Facebook as providers of delivering addressable (customer-specific) digital advertising.[14]

17. When Netflix Chief Content Officer Ted Sarandos was asked "how important is data analytics in assessing what type of content you want to acquire," he responded that "[i]t's a very important part. … [T]he data analytics that we have going into May screenings to say what shows we are going to target, it's mind-boggling. And how good it is getting every year in terms of when you can look in shows, you can look at the writers, track records."[15]

18. Like Netflix, Amazon uses data generated through its direct distribution to subscribers to develop exclusive original content, which is available to Amazon Prime subscribers at no additional cost. In particular, Amazon uses customer-focused data to "inform the decision as to what content to choose."[16] Amazon is moving away from more traditional models of offering pilots and soliciting customer feedback and increasing "its straight-to-series orders as the company tries to remain nimble and competitive."[17]

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14 eMarketer, "Google and Facebook Tighten Grip on US Digital Ad Market," September 21, 2017.

15 Netflix Chief Content Officer Ted Sarandos, Netflix Inc. at MoffettNathanson Media & Communications Summit – Final, FD Wire, May 13, 2015.

16 Andrew Wallenstein, "What the TV Biz Could Learn from Amazon Studios: Soliciting viewer feedback during the development process makes a lot of sense," *Variety*, May 1, 2013, *available at*: http://variety.com/2013/biz/news/amazon-viewer-data-for-development-process-1200429921/.

17 Henry Chu, "Amazon Expects More Straight-to-Series Orders, Output Deals," *Variety*, August 25, 2017, *available at*: http://variety.com/2017/biz/news/amazon-roy-price-straight-to-series-orders-output-deals-1202538880/.

19. On the advertising side, traditional linear[18] networks have been steadily losing advertising revenue share to firms such as Google and Facebook that take advantage of this ability to deliver highly targeted audiences. (See Figure 1.) Google and Facebook are both content providers that are integrated into the delivery of content to consumers via the Internet. Their successes in advertising are attributable to the data generated about their customers in that process.[19]

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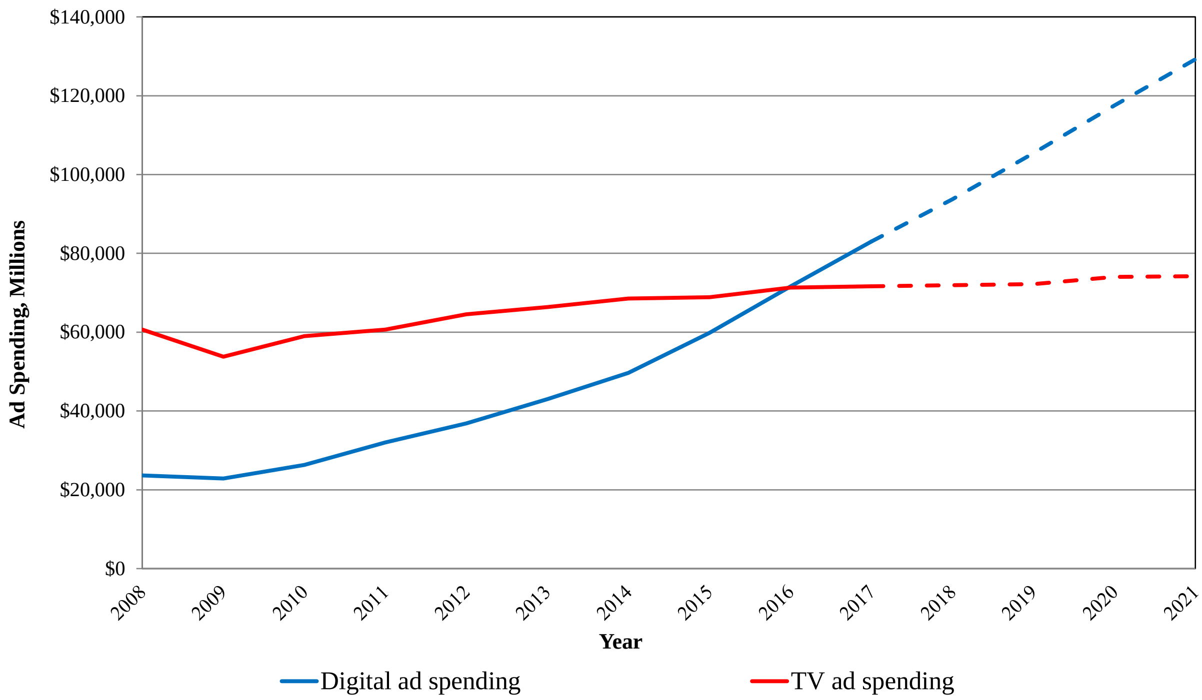
18 "Linear" in this context refers to content broadcast at a particular time, such as traditional broadcast television where a show airs on a particular channel at a particular time.

19 eMarketer, "Google and Facebook Tighten Grip on US Digital Ad Market," September 21, 2017; Matthew Ingram, "How Google and Facebook Have Taken Over the Digital Ad Industry," *Fortune*, January 4, 2017, *available at*: http://fortune.com/2017/01/04/google-facebook-ad-industry/.

Figure 1: Digital and TV Advertising Spending: 2008-21 (projected)



Note: Dashed lines display projections provided by eMarketer.
Source: eMarketer, Ad spending and Ad Revenue, data pulled January 29, 2018.

20. In sum, the innovative new competitors that the Complaint refers to repeatedly[20] are leveraging the benefits of vertical integration exactly as the economic theory and literature presented above predicts. In the proposed transaction, AT&T and Time Warner seek to respond competitively to these recent innovations, using vertical integration to improve their own content, distribution and advertising, exactly the type of pro-competitive response that economics also predicts and that competition policy should encourage if its goal is to increase consumer welfare.

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20 *See, e.g.*, Complaint, ¶¶ 2, 8, 16-17.

C. CLAIMS THAT A VERTICAL MERGER WILL HARM COMPETITION SHOULD BE VIEWED SKEPTICALLY

21. Because there are benefits associated with combining complementary assets, no loss of a rival, no combination of substitute products, and no increase in market concentration, the circumstances in which vertical mergers can harm competition should be expected to be rare. That does not mean that vertical mergers can never be bad (indeed, in my own writings I have described such circumstances), but it does mean that the circumstances are likely to be rare so such claims should be carefully scrutinized.[21] The rarity of these circumstances is reflected in the findings of the academic literature that vertical mergers typically benefit consumers. Deputy Assistant Attorney General for Economic Analysis Luke Froeb has made this very point, expressing his doubts that antitrust enforcers would be able to identify the narrow circumstances where a vertical merger would harm competition.[22] In the same paper, he also raises the concern that there is a significant risk that enforcers will condemn efficient vertical mergers because they fail to recognize the important efficiencies that such mergers entail. Similarly, Bruce Hoffman, Acting Director, Bureau of Competition at the Federal Trade Commission ("FTC"), has not only also indicated there is a broad consensus that most vertical mergers are beneficial, but expressed concerns about the limitations of economic models applied to vertical mergers, noting that there are fewer such models for vertical mergers than for horizontal, and they have a far shorter track record. He emphasizes that "empirical data is also very important. Here, empirical work has tended to show that vertical mergers (and vertical restraints) are typically procompetitive."[23]

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21 *See, e.g.*, Dennis W. Carlton and Michael Waldman (2002), "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," *RAND Journal of Economics* 33(2):194-220.

22 *See* James C. Cooper, Luke M. Froeb, Dan O'Brien, and Michael G. Vita (2005), "A Critique of Professor Church's Report on the Impact of Vertical and Conglomerate Mergers on Competition," *Journal of Competition Law and Economics* 1(4): 785-795, pp. 785-786.

23 D. Bruce Hoffman, "Vertical Merger Enforcement at the FTC," Credit Suisse 2018 Washington Perspectives Conference, January 10, 2018, p. 4.

22. These concerns are magnified in dynamic industries like this one, in which vertical integration is a vital part of ongoing innovation and competition, and further vertical integration is an expected, pro-competitive response to the success of existing vertically integrated firms. A core part of the competitive benefit of these innovations is that they induce other firms to react and organize their production in more efficient ways, including via vertical integration. Comcast-NBCU vertically integrated in 2011, and since then, the entry by competitors with new, vertically-integrated business models has only accelerated (despite DOJ arguments at the time that the Comcast-NBCU merger would stifle such innovations). To stop AT&T and Time Warner from vertically integrating today would be to stop a part of that ongoing competitive process that drives innovation, experimentation, and competitive responses, all to the benefit of consumers.

23. For all of these reasons, it is appropriate to be skeptical of claims of harm from vertical mergers and to ask a series of fundamental economic questions about claims of harm from a vertical transaction:

- **First**, and fundamentally, does the theory of harm confuse harm to competitors, or the need for competitors to react, with harm to competition? Because vertical integration enables the combined firm to make better use of complementary assets, the merged firms' rivals may be—and, indeed, typically will be—worse off and may be forced to react in various, potentially costly ways. Efficiencies from vertical integration *necessarily* challenge the competitive positions of rivals, but that results in benefits to consumers, not harm. Indeed, forcing competitors to respond to better and more innovative products, produced at lower cost, is the essence of competition. And the competitive response generated from rivals is one fundamental reason that vertical mergers are generally seen as pro-competitive. Thus, a rule that would prohibit vertical mergers if they force competitors to adapt, even in potentially challenging ways, would stifle pro-competitive vertical mergers and harm consumers.
- **Second,** is the theory of harm consistent with experience and marketplace facts and trends? Assessing the impacts of a proposed merger is necessarily a predictive exercise,

which should be informed to the maximum extent possible by close examination of the actual marketplace facts and dynamics, including observed results from similar combinations or events. Actual empirical evidence generally trumps an economic theory, no matter how elegant; indeed, if an economic theory points in one direction and the empirical evidence points in another, that is generally a good indication that the theory is misspecified or a poor fit for actual marketplace dynamics. At the same time, it is important to look beyond static analyses to determine whether likely changes in the market undermine any claim that a firm has sufficient market power to substantially lessen competition. Here, such forward-looking analyses are particularly important given the rapid growth of new integrated content providers and distributors—which the Complaint highlights—as these firms are leading an explosion in the universe of available content, with a consequent reduction in Time Warner's role.

- **Third**, does the theory of harm fully and fairly account for the benefits that are typically inherent in vertical integration? For the reasons presented above, when analyzing vertical mergers, one cannot simply assert that there are no such benefits (as the Complaint does) or treat them as somehow less important or less likely than the alleged harms. Instead, given the economic evidence that benefits exceed harms in the vast majority of vertical mergers, one should give the potential benefits as much weight as one gives the potential harms. Similarly, one should not require the benefits to be quantified with greater precision than any estimates of harm. Combining complementary products *will* create incentives to make use of the complementarity and make investments that benefit all the products, even if the full extent of those benefits cannot be quantified with certainty before the merger even occurs.

- **Fourth**, even in the rare circumstance in which a vertical merger gives rise to competitive concerns, are there targeted remedies to eliminate that harm, while allowing the merger to go forward to obtain the benefits? If such remedies exist to prevent the harm while allowing the achievement of the efficiencies, then it is simply wrong as a matter of economics—and harmful to consumers—to block the merger.[24]

24. As I demonstrate in the remainder of this report—following the analytical approach I lay out next—the Plaintiff's theory of harm in this case does not provide a satisfactory answer to any of these questions, and thus there is no sound economic basis to grant the Plaintiff's request to block the proposed merger.

D. A Framework for the Economic Analysis of this Vertical Merger

25. The primary theory of harm alleged in the Complaint is that, due to the merger, AT&T will be able to command significantly higher prices than Turner Networks ("Turner") charges today for the Turner programming channels (TBS, TNT, CNN, CNN Espanol, CNN International, Turner Classic Movies, Cartoon Network/Adult Swim, Boomerang, CNN Headline News ("HLN"), and truTV). Notably, the Complaint does not allege that the merger will reduce the competition faced by Turner in any video content market: Turner will face the same rivals and the same degree of competition post-merger as before. Rather, the Plaintiff's theory is that Turner has been unable to make full use of its market power pre-merger, but will have additional "bargaining leverage" after the merger, due to affiliation with AT&T, and will use that bargaining leverage successfully to demand higher prices for the same content, forcing AT&T's rivals in distribution to raise prices and thereby harm competition in downstream video distribution markets.

26. There are a number of key assumptions embedded in this theory, each of which must be tested. These include: (1) that rival distributors would agree to pay significantly more for the same Turner content simply because AT&T owns it; (2) that any possibility of significantly higher prices is not fully dealt with by the arbitration/standstill "remedy" that Turner has offered

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24 *See, e.g.*, Transcript of Fairness Hearing Before the Hon. Richard J. Leon, United States District Judge, *United States v. Comcast*, Case No. 1:11-cv-00106 (RJL), July 27, 2011, p. 15, where DOJ states that "in cases of vertical mergers, conduct remedies can be a very useful tool to address the competitive problems while preserving competition and allowing efficiencies … that may result from the transaction to proceed."

to include in its contracts with distributors; (3) that any increase in price for one relatively small component of rival distributors' video offerings would substantially lessen competition in downstream distribution markets, notwithstanding the many competitive options open to those distributors; and (4) that any harm will more than offset the substantial efficiencies typically inherent in vertical mergers in general and this vertical merger in particular.

27. In the remainder of this report, I address these issues in order to analyze this vertical merger and to assess Plaintiff's theory of harm. In this section, I summarize the framework and my conclusions.

28. An initial step in my economic analysis of a proposed merger is to consider the structure and dynamics of the market or markets at issue. Economists recognize that defining markets and understanding the competitive landscape is an important element in assessing the potential for competitive harm from a merger. For example, the chance of harm is lessened if the market is unconcentrated, dynamic, and characterized by entry and innovation. This consideration of market structure should not focus only on a static snapshot of what a market looks like today, but should include an examination of the trends that indicate how the market is evolving into its future state. There is no question that the definition of a "market" and calculation of market shares is only a first step in an analysis; market definition can be subject to dispute, especially in a market with differentiated products, and even when not subject to dispute, it can still be only a first step since market shares alone do not always correlate with competitiveness. But it is a useful first step that can prevent an analyst from concocting theories that fly in the face of the evidence.

29. Here, the Plaintiff has not explicitly defined a market for video content, despite the fact that such content is the instrument of anticompetitive behavior alleged by the Complaint. However, the Complaint does refer to "professionally produced, full length video programming subscription services," and so I use this implied market definition of "professionally produced, full length video programming" as a starting point for my analysis of video content

competition.[25] I show that the video content marketplace is not concentrated today: There are numerous significant competitors producing and aggregating high quality content. In addition, the sector is extremely dynamic, and all of the trends are toward more entrants, including some of the world's largest technology companies, many of whom are already vertically integrated, producing more and more content each year. (See Section III.A.)

30. Having described the competitive landscape, the next step is to assess the market shares of the particular content AT&T proposes to acquire. Since the Complaint focuses primarily on Turner, it is necessary to analyze Turner's size, scope and significance within the broader content market. Firms with large and increasing market shares are obviously more likely to raise competitive concerns than firms with relatively small and declining shares, which typically pose few, if any, competitive concerns. In the present case, Turner's share of the content market is small and declining (well under 10%). I also examine the specific types of content on Turner networks. I show that Turner's shares of "hit" programming and sports programming are also quite small, further suggesting little possibility of harm from the proposed transaction. Notably, other broadcast and cable networks and large and rapidly growing new entrants like Netflix are offering far more popular content. (See Section III.B.)[26]

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25 Plaintiff discusses distribution of "hit" shows, sports and news at length, indicating that those are among the content included in "professionally produced, full length video programming." *See, e.g.*, Complaint, ¶¶ 4, 14, 35.

26 With respect to geographic markets, Plaintiff has not provided any market share calculations other than to claim that, in 18 Designated Market Areas (DMAs), DIRECTV has subscriber share exceeding 40%. (Complaint, ¶ 28.) That figure, however, appears to be based only on AT&T's (DIRECTV plus U-verse) share of MVPD subscribers, not all television households. By excluding households that only watch television over-the-air and/or use OVDs, Plaintiff's market share calculation fails to conform to either of its claimed markets for video distribution, one of which includes MVPDs and VMVPDs, and the other of which also includes subscription video on demand providers ("SVODs") such as Netflix and Amazon. When calculated based on all television households, which corresponds more closely to Plaintiff's market definition, AT&T's shares are below 40% in every DMA. (SNL Kagan, MediaCensus: All Video by DMA 2017Q3, data extracted

31. The next step is to determine what empirical evidence from events says about the power (or lack thereof) of the Turner content. Here, I examine two recent long-term "blackout" events in which content that is recognized in the industry as comparable to the Turner content was dropped by distributors for several years. The evidence shows that the impact on the distributors that dropped the Turner-like programming was small and short-lived. I also show that new entrants, including Google, have chosen to launch linear online (or "VMVPD") services without Turner content. (See Section III.C.)

32. Having shown that the evidence suggests that Turner's role in the video content marketplace makes competitive harm from the transaction unlikely, I then assess whether there are other mechanisms in place today that would remove the Plaintiff's competitive concerns while preserving the benefits of vertical integration.[27] I explain that here, I understand that AT&T has already put such a mechanism in place by offering to add an arbitration/standstill provision to its Turner contracts with distributors.[28] That provision is similar to the one that the DOJ agreed to in Comcast/NBCU, and makes it impossible for AT&T post-merger to threaten to withhold Turner content, thereby eliminating the Plaintiff's concern about increased bargaining leverage. While the commitment applies to Turner content, I refer to the commitment as AT&T's contractual commitment, as it will apply to the merged entity and affect its incentives going forward. The mechanism adopts baseball-style arbitration, which both DOJ and the FCC have used in the past, because that dispute resolution mechanism creates incentives for both sides to be reasonable and reach agreement. I explain that such contractual provisions are not "behavioral remedies" that seek to prohibit a company from doing something it has an economic

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November 28, 2017.) I will respond to Plaintiff's geographic market analysis after it is presented.

27 I do not address in this submission whether there are conditions that the Court may want to impose to remedy the harms the Plaintiff raises, though as discussed above, that is a relevant issue for the Court to decide if the Court determines that there is likely to be competitive harm.

28 TWI-LIT-02844993, Arbitration Agreement. TWI-LIT-02845481, Turner letter to DISH, November 28, 2017.

incentive to do; rather, these contractual provisions are structural, in that they change underlying economic incentives. (See Section IV.)

33. I then directly test whether marketplace evidence of past transactions provides any support for a theory of competitive harm from this proposed vertical merger. These so-called "natural experiments" provide economists with excellent evidence of the effect of a merger because they show how vertical integration has played out in the real world. Economists have reliable tools to make such assessments, for example by comparing whether the prices of the merged firm have increased faster than prices in the rest of the industry since the merger. If the Plaintiff's theory were correct, we would expect to see strong correlation between prior vertical integration and higher content prices. I perform an econometric analysis of the impact of three prior transactions in the video distribution industry on affiliate fees, including the most recent experience since Comcast acquired NBCU. The empirical evidence shows that these natural experiments do not support the Plaintiff's theory that vertical integration is associated with increased content prices. And given industry trends in the past five years discussed in Section II, that result is likely to be even stronger today. (See Section V.) These empirical results confirm what the earlier evidence suggests, that there is no empirical support for the Plaintiff's theory of harm.

34. The ultimate issue, as the Complaint makes clear, is not whether some distributors will agree to pay more for Turner programming if AT&T owns it, but whether the proposed transaction will "substantially lessen competition" in the video distribution markets alleged in the Complaint. As I explained above, it is important not to confuse an impact on competitors with actual harm to competition and consumers, as individual competitors can and do react to increased competition and marketplace developments all the time. For that reason, I evaluate the range of competitive options open to distributors to continue to compete effectively even if prices for Turner content were raised (contrary to the evidence presented above), and how these options limit potential risk to competition. (See Section.VI) Plaintiff has not yet indicated how it could overcome these hurdles; if its experts provide more analysis of this issue in their reports, I reserve the right to respond in rebuttal.

35. No economic analysis of the competitive impact of a merger is complete without a full assessment of the efficiency benefits it will likely generate for competition and consumers. That is especially true for vertical mergers, which typically involve inherent efficiencies, as described above. Indeed, well-established benefits of vertical mergers, such as elimination of transaction costs to allow better coordination of the use of complementary assets and creation of incentives to lower prices, expand distribution and lead to enhanced innovation. In the present case, the complementary assets of the merging firms—which include consumer data, distribution networks, content, advertising inventory, and associated expertise—as well as the ongoing trends in the video industry strongly support the conclusion that this merger promises significant efficiencies. Such efficiencies can deliver enormous consumer benefit, especially because competitors will likewise be forced to adapt and innovate. Blocking the merger will prevent those efficiencies, creating a serious risk of harm to consumers who will be deprived of this efficient competition. Moreover, these efficiencies, including using data to improve Time Warner content and advertising, will increase the advertising revenue that Time Warner makes per viewer, thus increasing Time Warner's returns on broad distribution, creating an incentive to *cut* prices to distributors and *expand* output, which is directly opposite from Plaintiff's theory of harm. (See Section VII.)

36. Having applied this framework to Plaintiff's allegations regarding Turner content, which make up the bulk of the Complaint, I next address Plaintiff's allegation that AT&T's ownership of HBO would substantially lessen competition. Many of the points that I make regarding Turner apply as well to HBO. And there are also additional reasons to reject the claim that HBO has such competitive significance that it can be used to harm competition in video distribution. Although HBO has successful shows, it is far from being a uniquely important content "factory." To the contrary, there are numerous alternatives in the marketplace. Nor is the economic evidence consistent with the Complaint's assertion that HBO is a uniquely valuable promotional tool. In fact, there is empirical evidence that higher prices for HBO content or restrictions on use of HBO for promotion would be of no competitive significance to a competing distributor, including experiments done by AT&T that show the trivial loss of subscribers that results from HBO price increases, and the wide set of options other than HBO that distributors can and do

make use of in promotional offers. This limited impact of HBO to distributors is not surprising given that an exact replica of HBO is available online in the form of HBO NOW. (See Section VIII.)

37. Finally, in addition to evaluating the factors listed above, I preliminarily address two other allegations in the Complaint.

- The Complaint refers to a theoretical model of bargaining leverage, arguing that it can be used to predict substantial harm to competition and justify blocking this transaction. I explain why I am skeptical of the value of such a model when we have so much empirical evidence to rely on and why I am concerned about over-reliance on any theoretical model that yields results that are inconsistent with historical evidence. I will have more to say once Plaintiff reveals its model. I stress only one point here. The Plaintiff's theory appears to rely on the threat that the merged firm can withhold content. But such a threat is completely eliminated by the contractual mechanism that AT&T has already put in place. There is an apparent disconnect between the theoretical model and the facts. (See Section IX.)
- The Complaint also alleges that this merger will facilitate anticompetitive coordination between AT&T and Comcast, although there is a notable absence of specificity as to how the merger would make that happen. I explain why several characteristics of this industry, including the significant differences between AT&T post-merger and Comcast and other competitors, are not conducive to harm from coordination. Again, if the Plaintiff offers a more detailed explanation, I reserve the right to respond. (See Section X.)

38. Based on all of the foregoing, I conclude that the proposed merger is likely to generate substantial consumer benefits; that it is unlikely to substantially harm competition; and that blocking the merger would thus threaten serious harm to consumers of video content.

III. STANDARD ANTITRUST INDICATORS APPLIED TO VIDEO CONTENT UNDERMINE PLAINTIFF'S CLAIM THAT TIME WARNER HAS MARKET POWER SUFFICIENT TO RAISE SUBSTANTIAL COMPETITIVE CONCERNS

39. In this section, I evaluate the current structure and dynamics of the video content market, Turner's relative size, scope and importance in that market, and empirical evidence of the power of Turner and Turner-like content to assess whether the evidence supports Plaintiff's claim that Turner programming could and would be used to substantially lessen competition in downstream distribution markets.[29] I conclude that the evidence suggests that there is no basis for Plaintiff's claim.

A. THE VIDEO CONTENT MARKETPLACE IS DYNAMIC, UNCONCENTRATED, AND BECOMING MORE SO

40. A standard analysis to assess claims of market power and competitive harms from mergers is to evaluate market structure and market concentration, typically by defining a relevant market as a starting point. I note that, although Plaintiff's theory of harm depends on leveraging the alleged market power of Turner content to harm competition in downstream markets for the distribution of "professionally produced, full-length video programming subscription services to residential customers,"[30] the Complaint does not define a market in which Turner competes. Although the Complaint could be interpreted to mean that the Plaintiff believes that "full length video programming" is a useful market definition for content, Plaintiff never calculates shares based on this definition.[31] I do so in this and the next sections. The benefit of defining markets, as a first step, and calculating market shares is that it imposes a common sense discipline on

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29 This section focuses on Plaintiff's central allegations relating to the potential of the merged firm to use of Turner content to harm competition in distribution markets. I discuss the Plaintiff's allegations concerning HBO in Section VIII below.

30 Complaint, ¶ 27.

31 Plaintiff discusses distribution of "hit" shows, sports and news programming at length, indicating that those are among the content included in "professionally produced, full length video programming."

antitrust analysis and identifies when claims of harm are unlikely given the state of competition in the marketplace.[32]

41. The content market appears relatively unconcentrated, and increasingly so in recent years. Looking first at the narrow segment of traditional broadcast and cable networks (that is, disregarding Netflix and other OVDs), there are a large number of programmers, none of which has a particularly large share. As Figure 2 shows, no single programmer has even 20% of broadcast and cable primetime average viewers for the most-watched 100 networks, and the largest provider is Comcast-NBCU (18.2%) whose vertical merger was approved in 2011—with, as I show in Section V below, no adverse impact on content prices. Eight programmers have shares of at least 5%, with Turner ranking sixth among them at 7.7%. If Figure 2 defines a relevant market, the Herfindahl-Hirschman index ("HHI"), a standard measure of concentration in antitrust analysis,[33] is around 1,000.[34] The DOJ and FTC's Horizontal Merger Guidelines would classify that as unconcentrated.[35] Unconcentrated markets like that rarely give rise to competitive concerns even in horizontal mergers which eliminate a competitor.

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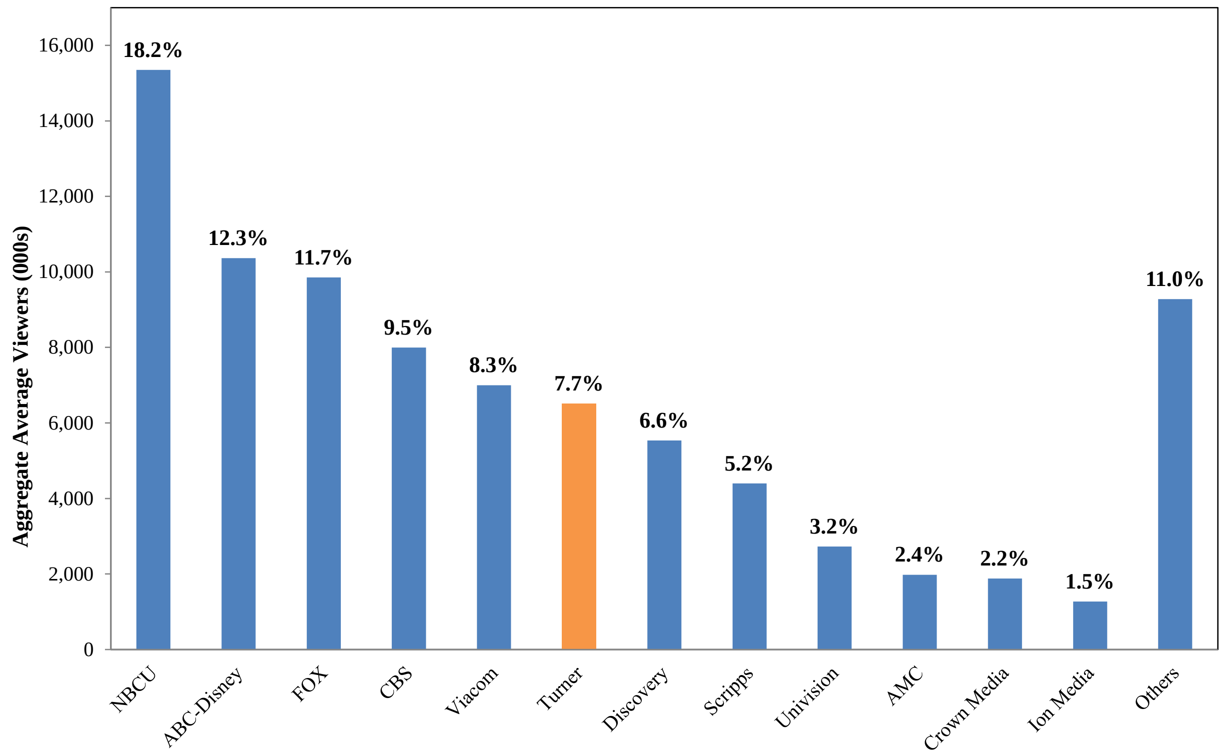
32 For a discussion of the use of market shares in helping to avoid errors by decision makers, *see*, Dennis W. Carlton (2007), "Market Definition: Use and Abuse," *Competition Policy International* 3(1): 3-27.

33 An HHI is simply the sum of the squares of the market shares. An industry with a single firm with 100% share would thus have an HHI of 10,000 (100x100). An industry with two firms with 50% shares would have an HHI of 50x50 + 50x50 = 5,000. Dennis Carlton and Jeffrey Perloff (2005), *Modern Industrial Organization*, 4th ed., p. 255.

34 HHI calculations in my backup materials.

35 The Horizontal Merger Guidelines define HHIs below 1,500 as unconcentrated. U.S. DOJ and FTC, Horizontal Merger Guidelines, August 19, 2010 ("Horizontal Merger Guidelines"), § 5.3.

Figure 2: Primetime Average Viewers of Top 100 Broadcast and Basic Cable Networks by Programmer, 2017



Notes: "Others" includes networks with no majority owners, and programmers with only 1 network in the top 100 list except for CBS and Ion Media. CW, which has no majority owner, is included in "Others".
Source: Michael Schneider, "Most-Watched Television Networks: Rankings 2017's Winners and Losers", *IndieWire*, Dec 28, 2017, *available at* http://www.indiewire.com/2017/12/highest-network-ratings-2017-most-watched-hbo-cbs-espn-fx-msnbc-fox-news-1201911363/.

42. The shares above include the viewing of only broadcast and cable networks, but that understates the breadth of the available content as Plaintiff's distribution market also includes OVDs like Netflix, Hulu and Amazon, all of which create additional content of their own. Indeed, OVDs like Netflix, Hulu and Amazon have driven a rapid increase in content creation in recent years.

43. The Complaint describes OVDs, and SVODs in particular, as video distributors, but they are also content creators. For example, Netflix creates its own content and aggregates the content of others, in addition to distributing that content. Netflix has a stated goal of having half

of its content be original.[36] Other SVODs like Amazon and Hulu are likewise effectively aggregating bundles of shows, much like traditional networks, as well as creating their own content. Indeed, both SVODs like Netflix and VMVPDs like Sling are now available on the set-top-boxes of Comcast and other cable providers in direct competition with traditional networks. This blurring of the line between OVD as content provider and OVD as distributor is itself an example of vertical integration—many OVDs really do both—and an illustration of pervasiveness of vertical integration in the video industry. However they are defined, the growth of OVDs is generating unparalleled growth in the number and sources of original television programming, leading to a decline in the role of traditional linear networks like Turner, which is only expected to accelerate.[37]

44. Viewership is even more unconcentrated when OVDs are considered. Plaintiff acknowledges that "[s]ome consumers subscribe to an online video service like Netflix or Amazon Prime."[38] This is a great understatement: the reality today is that Netflix ended 2017 with over 54 million U.S. subscribers.[39] And people spend a great deal of time watching video content on OVDs. For example, a DIRECTV internal survey in 4Q 2017 found DIRECTV subscribers collectively spent a quarter of their television viewing time online.[40] comScore

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[36] Todd Spangler, "Netflix Targeting 50% of Content to Be Original Programming, CFO Says," *Variety*, September 20, 2016, *available at* http://variety.com/2016/digital/news/netflix-50-percent-content-original-programming-cfo-1201865902/.

[37] Netflix discussed the decline of linear programming in favor of OVDs in its most recent investor letter: "We have been talking about the transition from linear to streaming for the past 10 years. As this trend becomes increasingly evident, more companies are entering the market for premium video content." Netflix, Q4 2017 Letter to Shareholders, January 22, 2018, *available at* https://ir.netflix.com/static-files/0c060a3f-d903-4eb9-bde6-bf3e58761712.

[38] Complaint, ¶ 2.

[39] Netflix, Q4 2017 Letter to Shareholders, January 22, 2018, *available at* https://ir.netflix.com/static-files/0c060a3f-d903-4eb9-bde6-bf3e58761712.

[40] Fall 2017 OTT Tracker Report Final. *See also* ATT-LIT-01655099, "Impact of OTT on AT&T/DIRECTV," December 14, 2016.

estimates that online hours using OVD services have increased by 57% just between November 2016 and October 2017, from 1.9 billion hours per month to 3 billion hours per month, with Netflix alone accounting for over a billion hours of video watching in October 2017.[41] Accounting for OVD viewership would reduce the shares shown in Figure 2 and result in even lower concentration.[42]

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41 OTT Intel Trend.xlsx, comScore OTT Intelligence, figures for November 2016 and October 2017. A DISH Network Q1 2017 Viewership Trends report stated that [redacted]

42 I adjust for OVD viewership by using surveys of DIRECTV subscribers on their DIRECTV (MVPD) and OVD viewership. The survey respondents indicate whether or not they watch OVD services, and if they do, what percentage of their viewing time was spent watching OVD television service vs DIRECTV's television service. I apply the percentages of MVPD (DIRECTV) subscribers who do and do not watch OVD along with the relative sizes of OVD and MVPD viewership time. On average each MVPD minute of viewership corresponds to (percentage of MVPD subscribers who watch OVD multiplied by 1/(1-percentage of time spent watching OVD) plus percentage of MVPD subscribers who do not watch OVD) total minutes. I divide viewership shares implied by ratings data by the number of total minutes corresponding to an average MVPD minute. For example, if 80% of DIRECTV subscribers watch OVDs, and those OVD viewers spend 20% of their time watching OVDs and 80% watching DIRECTV, then total viewing time of all subscribers combined is equal to DIRECTV minutes + (80% of subscribers x 20% of minutes on OVDs / 80% of minutes on DIRECTV) x DIRECTV minutes = 1.2 x DIRECTV minutes. Thus, in this example, the OVD adjusted ratings figures would be calculated as reported ratings divided by 1.2, so a ratings share of 10 would be adjusted to 10 / 1.2 = 8.3. *See* 726-035 DIRECTV OTT Wave 3 report 07.12.13; ATT-DOJ2R-14653253, DIRECTV, "Impact of OTT on DIRECTV," September 15, 2014; Fall 2017 OTT Tracker Report; ATT-LIT-01655099, "Impact of OTT on AT&T/DIRECTV," December 14, 2016. For the years without available survey data, 2010-2011 and 2015, I use extrapolated numbers. For 2015, I use an average of 2014 and 2016 numbers, and for 2010-2011 I impute them backwards from 2012 assuming the same growth rate as between 2012 and 2013. Some OVD services carry linear television content, but the great majority of OVD viewership currently is on SVODs like Netflix that do not carry linear networks. *See* OTT Intel Trend.xlsx, comScore OTT Intelligence, figures for October 2017. I also note that my approach understates viewership on OVDs because it adjusts only for the OVD viewership of

45. One indicator of the influence of OVDs in the creation of content is their level of investment in content. SNL Kagan estimates that in 2017, Netflix, Amazon and Hulu together had content expense of more than $11 billion, roughly 21% of all program expenditures by *all* broadcast, basic cable and, premium cable networks.[43] Additionally, Facebook and Apple recently announced plans to spend $1 billion each on video content in 2018.[44] Moreover, content spending by entrants is growing rapidly, with Netflix's total content spending projected to increase by 23% and Amazon's expected to increase by 27% in 2018. In fact, Netflix announced in January 2018 that it was increasing its planned 2018 content spending to $7.5 to $8.0 billion.[45] And much of that investment will be in original (exclusive) content, as Netflix alone will spend over $3 billion on original content by 2020 and Amazon will spend over [redacted][46] Contrast this with SNL Kagan's prediction that HBO and Cinemax's total spend on content will increase only 3% from 2017 to 2018, to $2.0 billion.[47]

MVPD subscribers. The OVD viewership of cord-cutters (non-MVPD subscribers) is not included.

43 *See* Table 3. SNL Kagan, "Profile: Netflix (U.S,)," March 6, 2017; SNL Kagan, "Profile: Hulu," February 22, 2017; SNL Kagan, "Profile: Amazon Prime Video (US)," January 30, 2017. These figures reflect worldwide expenditures. Netflix's estimated expenditures were $6.7 billion, Amazon's were $2.7 billion and Hulu's were $2.0 billion. Hulu projects spending on original content $408 million in 2018 and $748 million in 2021. HULU-0000440, Hulu, "2017 Hulu Budget and Long Range Plan," December 7, 2016.

44 SNL Kagan, "Analysts: Facebook Watch faces an 'uphill battle' against YouTube," October 30, 2017; SNL Kagan, "Apple aims to compete with Netflix, Amazon on a $1B content budget," August 16, 2017.

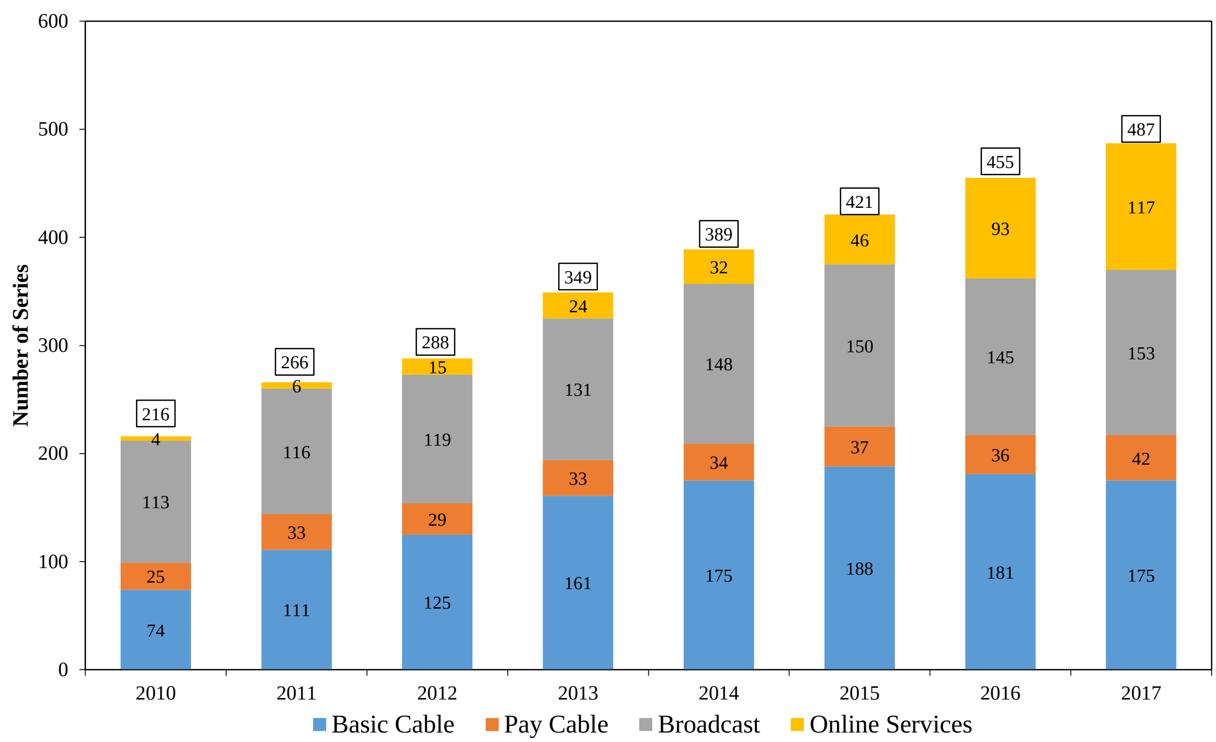
45 Netflix, Q4 2017 Letter to Shareholders, January 22, 2018, *available at* https://ir.netflix.com/static-files/0c060a3f-d903-4eb9-bde6-bf3e58761712.

46 SNL Kagan, "Profile: Netflix (U.S.)," March 6, 2017. [redacted]

47 SNL Kagan, "TV Network Summary," data pulled January 11, 2018.

46. This significant increase in available content, and the resulting decline in concentration among content providers, is reflected in the expansion in the number of scripted series. As shown in Figure 3, the number of scripted series across all sources has increased by 125% since 2010, reflecting the unprecedented entry and expansion into video programming in recent years. The number of original shows available from OVDs has increased more than 20-fold since 2010.

Figure 3: Number of Original Scripted Series



Notes: Estimated count of original series tabulated by FX Networks Research. Excludes library, daytime dramas, one-episode specials, non-English language, children's programs, and short-form content (<15 mins). Includes recently-produced imports.
Sources: Joe Flint, "Peak TV Still Going Strong with 455 Scripted Shows in 2016," *WSJ*, December 21, 2016 ***available at*** https://www.wsj.com/articles/peak-tv-still-going-strong-with-455-scripted-shows-in-2016-1482350706; Joe Flint, "Era of Peak TV Continues With 487 Scripted Shows in 2017", *WSJ*, January 5, 2018 ***available at*** https://www.wsj.com/articles/era-of-peak-tv-continues-with-487-scripted-shows-in-2017-1515182593.

47. The content being produced by OVDs is of increasingly high quality, as shown by the number of awards being won by OVDs and favorable reviews by critics. For example, in 2014, Netflix was the first OVD to win a Golden Globe award and by 2018 Netflix, Amazon and Hulu

together took home 45 percent of the Golden Globe television programming awards, including the Best Television Series and Best Actress awards in both the comedy and drama categories.[48]

48. The lack of concentration in content provision is also reflected at the level of individual shows, with even the most popular shows attracting substantially lower shares of viewership than in prior years. With so much content for viewers to choose from, even a "hit" show today commands a smaller share of viewers than in the past when viewers had fewer options. As shown in Table 1, the average share of television households viewing the top 30 primetime series fell from 21.9% to 8.9%—a decline of about 60%—between 1980 and 2010. Between 2010 and 2016, this share continued to fall to 7.6%, a further 14% reduction, reflecting in part the growth of OVD services.

Table 1: Ratings of Top 30 Primetime US TV Shows: 1980-2016

	Ratings			
Year	**Mean**	**Median**	**Minimum**	**Maximum**
1980	21.9	20.8	18.6	34.5
1990	16.0	15.8	14.2	21.3
2000	11.1	10.9	8.6	17.4
2010	8.9	7.9	6.9	14.5
2016	7.6	7.4	5.7	11.5

Note: Year in this table refers to the beginning of a TV season, i.e. 1980 refers to the 1980-1981 TV season.

Sources: Tim Brooks and Earle Marsh (2007), *The Complete Directory to Prime Time Network and Cable TV Shows 1946-Present*, 9th Ed.; Tim Brooks' website, "Top Rated TV Programs By Season (2007-Present)" *available at* http://www.timbrooks.net/ratings/.

48 Golden Globes 2018 Winners and Nominees, *available at* https://www.goldenglobes.com/winners-nominees/2018. *See also* Bryan Bishop, "Streaming services dominating entertainment awards has become the unremarkable new normal," *The Verge*, January 9, 2018, *available at* https://www.theverge.com/2018/1/9/16866718/golden-globes-2018-streaming-services-amazon-netflix-hulu; Golden Globes website, "House of Cards," *available at* https://www.goldenglobes.com/tv-show/house-cards.

49. Because the relevant question in this case is the future impact of the proposed transaction, it is also important to consider trends in content creation and distribution. The number and viewership of OVDs, which can function as content creators as well as distributors, continues to increase. At least ninety OVDs have launched since 2010, and four VMVPDs have launched in 2017. (See Table 2, which lists the OVDs tracked by SNL Kagan and their launch dates.)

Table 2: U.S. OVDs

Service	Launch Date	Service	Launch Date	Service	Launch Date
VMVPDs		45 Qello Concerts	Jul-11	93 Tribeca Shortlist	Oct-15
1 fuboTV	Jan-15	46 Gaia (formerly Gaiam TV)	Aug-11	94 YouTube Red	Oct-15
2 Sling TV	Feb-15	47 TheBlaze TV (formerly GBTV)	Sep-11	95 Smithsonian Earth	Nov-15
3 PlayStation Vue	Mar-15	48 Paramount Movies	Jan-12	96 Univision NOW	Nov-15
4 DIRECTV NOW	Nov-16	49 Google Play	Mar-12	97 YuppFlix	Dec-15
5 YouTube TV	Apr-17	50 Toon Goggles	Mar-12	98 Seeso	Jan-16
6 Hulu with Live TV	May-17	51 Spuul	Apr-12	99 FunimationNow	Feb-16
7 CenturyLink Stream	Jun-17	52 Sundance Now	Apr-12	100 HISTORY Vault	Feb-16
8 Philo TV	Nov-17	53 Reelhouse	May-12	101 FandangoNow (formerly M-GO)	Mar-16
non-VMVPDs		54 Ora TV	Jul-12	102 Fullscreen	Apr-16
Catch-Up TV		55 Amazon FreeTime Unlimited	Dec-12	103 STARZ	Apr-16
9 CBS	N/A	56 IndieFlix	Mar-13	104 MyOutdoorTV	Jun-16
10 FOX	N/A	57 Vimeo On Demand	Mar-13	105 Rooster Teeth FIRST	Jun-16
11 NBC	N/A	58 Warner Archive	Apr-13	106 Comic-Con HQ	Jul-16
12 PBS	N/A	59 Eros Now	2014	107 Hopster	Aug-16
13 Telemundo	N/A	60 Kidoodle.TV	Jan-14	108 Yahoo View	Aug-16
14 The CW	N/A	61 CarbonTV	Feb-14	109 PeopleTV (formerly	Sep-16
15 Univision	N/A	62 WWE Network	Feb-14	110 VUDU Movies on Us	Oct-16
16 ABC	N/A	63 Pluto.TV	Mar-14	111 Alpha	Nov-16
Other OVDs		64 Tubi TV	Apr-14	112 Brown Sugar	Nov-16
17 CinemaNow	Nov-00	65 Docurama	May-14	113 FilmStruck	Nov-16
18 iTunes	Oct-05	66 PlanesTrains+Automobiles	May-14	114 VRV	Nov-16
19 IndiePix Download	Mar-06	67 Tennis Channel Plus	May-14	115 BritBox	Mar-17
20 TED	Jun-06	68 Screambox	Sep-14	116 Walter Presents	Mar-17
21 Crunchyroll	Aug-06	69 Feeln (formerly SpiritClips)	Sep-14	117 Boomerang	Apr-17
22 Amazon Video	Sep-06	70 Paula Deen Network	Sep-14	118 PokerGO	May-17
23 Microsoft Movies & TV (formerly Xbox Video)	Nov-06	71 CBS All Access	Oct-14	119 KOCOWA	Jul-17
24 Netflix	Jan-07	72 FilmRise	Oct-14	120 Pantaya	Aug-17
25 MUBI	Feb-07	73 Urban Movie Channel	Nov-14	121 The Roku Channel	Sep-17
26 Crackle	Jul-07	74 UltraFlix	Jan-15	122 Sony Pictures Store	N/A
27 Ameba TV	Aug-07	75 Shout! Factory TV	Feb-15	123 Facebook Watch	Sep-17
28 VUDU	Sep-07	76 XiveTV	Feb-15	124 Redbox	Dec-17
29 Viewster	2008	77 CONtv	Mar-15		
30 IndiePix On Demand	Jan-08	78 CuriosityStream	Mar-15		
31 Hulu	Mar-08	79 NOGGIN	Mar-15		
32 SnagFilms	Jul-08	80 Steam	Mar-15		
33 Met Opera on Demand (formerly Met Player)	Nov-08	81 HBO Now	Apr-15		
34 DramaFever	Aug-09	82 Pure Flix	Jun-15		
35 FlixFling	Jan-10	83 Lifetime Movie Club	Jul-15		
36 Playstation Video	Apr-10	84 PGA TOUR LIVE	Jul-15		
37 Red Bull TV	May-10	85 SHOWTIME	Jul-15		
38 Rakuten Viki	Dec-10	86 Shudder	Jul-15		
39 Amazon Prime Video	Feb-11	87 Motor Trend OnDemand	Aug-15		
40 Fandor	Mar-11	88 Dove Channel	Sep-15		
41 Popcornflix	Mar-11	89 Watchable	Sep-15		
42 IndiePix Unlimited	Apr-11	90 BroadwayHD	Oct-15		
43 YouTube	May-11	91 Go90	Oct-15		
44 Acorn TV	Jul-11	92 Made to Measure	Oct-15		

Sources:

[1] - [7]: SNL Kagan, "The State of Online Video Delivery: An Analysis of Over the Top and TV Everywhere Trends," 2017 Edition, p. 14

[8]: Brad Tuttle, "The Cheapest Live-streaming TV Service Launches Today and It Only Costs $16 a Month," *Time,* November 14, 2017 *available at* http://time.com/money/5022425/best-streaming-tv-service-live-philo-sling-youtube-tv/

[9] - [16]: SNL Kagan, OTT Services and Devices, data pulled November 21, 2017.

[17] - [122]: SNL Kagan, Launch dates for selected U.S. OTT video aggregators, data pulled November 21, 2017.

[123] Shannon Liao, "Facebook Watch is live for everyone in the US," *The Verge,* September 5, 2017 *available at* https://www.theverge.com/2017/9/5/16256918/facebook-watch-is-live-for-everyone-in-the-us

[124] Natalie Jarvey, "Redbox Launches On Demand Service for Digital Movie Rental, Purchase," *The Hollywood Reporter*, December 31, 2017 *available at* https://www.hollywoodreporter.com/news/redbox-launches-demand-service-digital-movie-rental-purchase-1067353

50. OVDs include some of the most powerful media companies in the world, such as Apple, Amazon, Google, and Sony, among others, with emerging options from Facebook, SnapChat, CenturyLink, T-Mobile, Verizon, and others.[49] Specifically, many OVDs, including Netflix, Amazon, Apple, Facebook, Google and Hulu are continuing to vertically integrate into content development.

51. The review of the evidence in this section suggests that the video content market, even using what appears to be Plaintiff's implicit market definition, is unconcentrated, dynamic and characterized by rapid entry and expansion by many well-funded participants. This evidence suggests that Plaintiff's claim that control over any single content provider would give AT&T the incentive and ability to substantially lessen distribution competition should be met with healthy skepticism.

B. Turner Has a Limited and Declining Share in the Video Content Marketplace

52. As I detail below, using a variety of metrics Turner has small and declining shares, which call into question Plaintiff's theory of harm. Turner—which is currently comprised of ten cable networks: TNT, TBS, CNN, CNN Espanol, CNN International, Cartoon Network/Adult Swim, truTV, Turner Classic Movies, Boomerang, and HLN—is just one of many firms in the business of creating video. Turner networks together now account for only about 6.4% of basic cable, broadcast and OVD viewership.[50] In other words, Plaintiff's theory of harm is based on a claim that a programmer that accounts for only about 6.4% of television video content consumption can be used to substantially harm competition in video distribution markets.

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49 *See* Table 2 and Table 7. Zacks Equity Research, "T-Mobile US to Launch OTT Services in 2018, Buy Layer3 TV," December 14, 2017, *available at* https://www.zacks.com/stock/news/285935/tmobile-us-to-launch-ott-service-in-2018-buy-layer3-tv; Marty Swant, "Snapchat and NBCUniversal Are Creating a Digital Content Studio for Scripted Shows," *Adweek*, October 17, 2017, *available at* http://www.adweek.com/tv-video/snapchat-and-nbcuniversal-are-creating-a-digital-content-studio-for-scripted-shows/.

50 *See* Figure 4.

53. Perhaps even more relevant than its current share of viewership is the small role of Turner (and HBO) as one of many "factories" creating and aggregating video programming. Unless a firm controls a substantial share of the *capacity* for producing video content (or of the existing stock of relevant content), any attempt to limit access to content in an attempt to harm competition in distribution markets is likely to cause distributors to turn to other content producers. In fact, Turner competes with a wide variety of firms to secure rights to original and syndicated content, popular events (e.g., award shows), and sporting events. This is a dynamic process and today's leaders have no assurance of maintaining their lead in the future.

54. Another metric demonstrating Turner's limited role in content is its limited share of expenditures on content. Time Warner's programming expenditures—which include Turner and HBO—are roughly 40% of that of Disney and smaller than those of Comcast/NBCU, Fox, or Netflix. Overall, Time Warner's share of programming expenditures is about 9%.[51]

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[51] *See* Table 3.

Table 3: Share of US Programming Expense, 2017
(Broadcast, Basic Cable, Premium Networks, Netflix, Amazon and Hulu)

	Programming Expense (millions)	Share of Programming Expense
THE WALT DISNEY COMPANY	13,442.7	20.9%
COMCAST	7,617.5	11.9%
NETFLIX	6,680.0	10.4%
21ST CENTURY FOX	6,668.8	10.4%
TIME WARNER	5,653.4	8.8%
CBS	4,944.2	7.7%
VIACOM	3,462.8	5.4%
AMAZON	2,662.0	4.1%
HULU	1,981.0	3.1%
DISCOVERY	1,200.6	1.9%
THE EW SCRIPPS COMPANY	1,182.5	1.8%
NATIONAL FOOTBALL LEAGUE	1,117.3	1.7%
AMC NETWORKS	963.3	1.5%
UNIVISION	751.7	1.2%
OTHER	5,847.5	9.1%
TOTAL	64,175.3	100.0%

Notes: Other includes companies with less than 1% share and networks with no majority owner.

Sources: SNL Kagan, TV Network Summary: Programming Expenses, data pulled January 11, 2018; SNL Kagan, "Profile: Netflix (U.S.)," March 6, 2017; SNL Kagan, "Profile: Hulu," February 22, 2017; SNL Kagan, "Profile: Amazon Prime Video (US)," January 30, 2017.

55. Another informative metric of Turner's importance is how Turner stands relative to other programmers in terms of top-ranked networks based on primetime viewership. As shown in Table 4, below, looking at primetime viewership ranks in 2017, Turner had no networks in the top 10, only 2 in the top 20, and 8 in the top 100. Five other programmers have 8 networks or more in the top 100, and six other programmers have at least 5 networks in the top 100. These rank statistics confirm the finding of an unconcentrated content marketplace with a limited role for Turner.

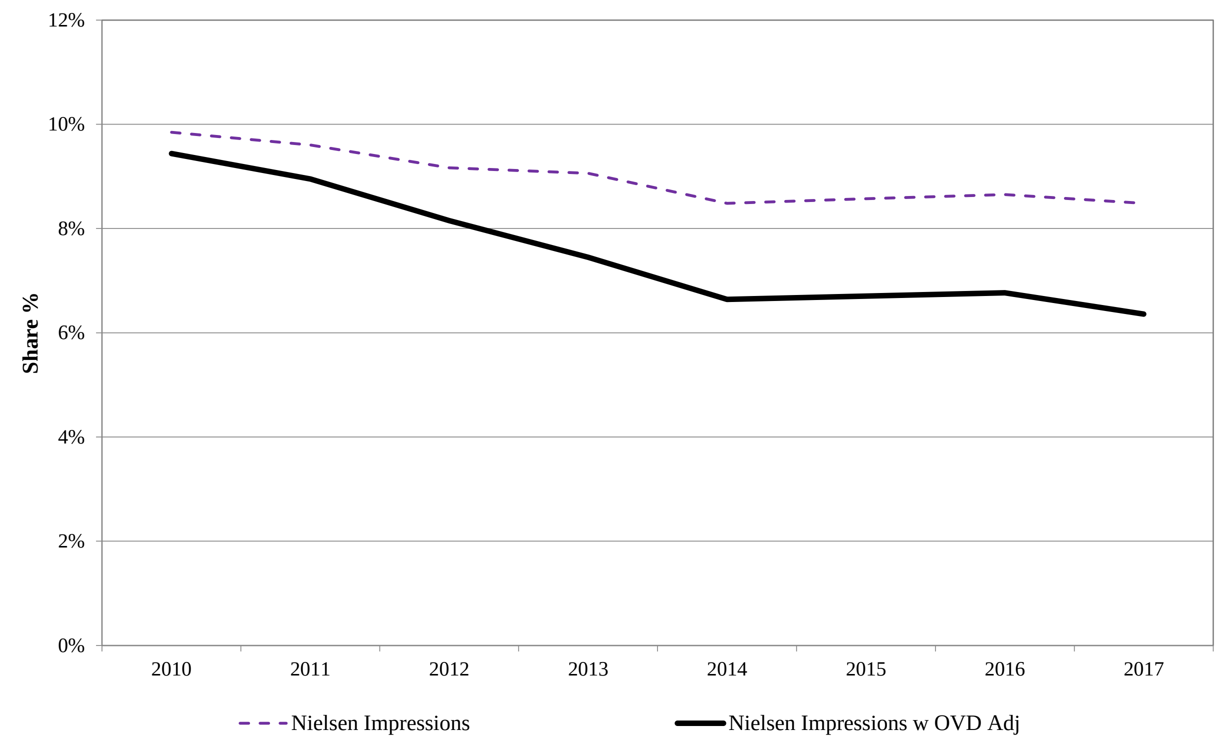
Table 4: Number of Top 5, 10, 20, 50, and 100 Broadcast and Cable Networks / Programming Blocks (Primetime) by Programmer, 2017

	# of Top 5 Networks	# of Top 10 Networks	# of Top 20 Networks	# of Top 50 Networks	# of Top 100 Networks
NBCU	1	3	4	7	13
Viacom	0	0	1	8	13
Discovery	0	0	2	5	10
Scripps	0	0	1	3	9
FOX	2	2	2	3	8
Turner	0	0	2	5	8
ABC-Disney	1	2	2	5	7
AMC	0	0	0	2	4
Univision	0	1	1	2	4
Crown Media	0	0	1	2	2
CBS	1	1	1	1	1
Ion Media	0	0	1	1	1
Others	0	1	2	6	20

Notes: Networks are ranked based on number of primetime average viewers. "Others" includes networks with no majority owners, and programmers with only 1 network in the top 100 list except for CBS and Ion Media. CW, which has no majority owner, is included in "Others". Viacom's Nickelodeon and Nick at Nite are considered as separate networks; Turner's Adult Swim and The Cartoon Network are considered as separate networks.
Source: Michael Schneider, "Most-Watched Television Networks: Rankings 2017's Winners and Losers", *IndieWire*, Dec 28, 2017, *available at* http://www.indiewire.com/2017/12/highest-network-ratings-2017-most-watched-hbo-cbs-espn-fx-msnbc-fox-news-1201911363/.

56. Trends over the past several years point to declining viewership of Turner content. As shown in Figure 4, data from Nielsen indicate that the Turner networks accounted for about 6.4% of basic cable, broadcast and OVD viewership in 2017, down from roughly 9.4% in 2010. Part of this decline is attributable to the growth of OVDs, but the Nielsen data also indicate that Turner's share of non-OVD viewership also fell from roughly 9.8% to 8.5% over the same period.

Figure 4: Viewership of Turner Networks for Broadcast, Basic Cable and OVDs: 2010-17



Notes: The OVD adjustment is based on DIRECTV surveys of OVD viewership. The OVD adjustment is calculated based on year-specific estimates. 2010, 2011, and 2015 OVD adjustments were imputed. 2017 Nielsen figures include Q1 to Q3. Based on broadcast and basic cable networks.
Sources: Nielsen Local Television Ratings data; 726-035 DIRECTV OTT Wave 3 report 07.12.13; ATT-DOJ2R-14653253, DIRECTV, "Impact of OTT on DIRECTV," September 15, 2014; ATT-LIT-01655099, "Impact of OTT on AT&T/DIRECTV," December 14, 2016; Fall 2017 OTT Tracker Report.

57. Plaintiff claims that Turner has many "hit shows" in support of its claim that Time Warner networks have significant market power.[52] However, available data establish that Turner's share of these peak viewership events is actually *substantially smaller* than its already small share of overall viewership. As shown in Figure 5, Nielsen data for the 12 months ending November 2017 indicate that Time Warner networks accounted for only 7 of the 500 most watched non-sports telecasts (1.4%). Each of these seven telecasts was an episode of Game of

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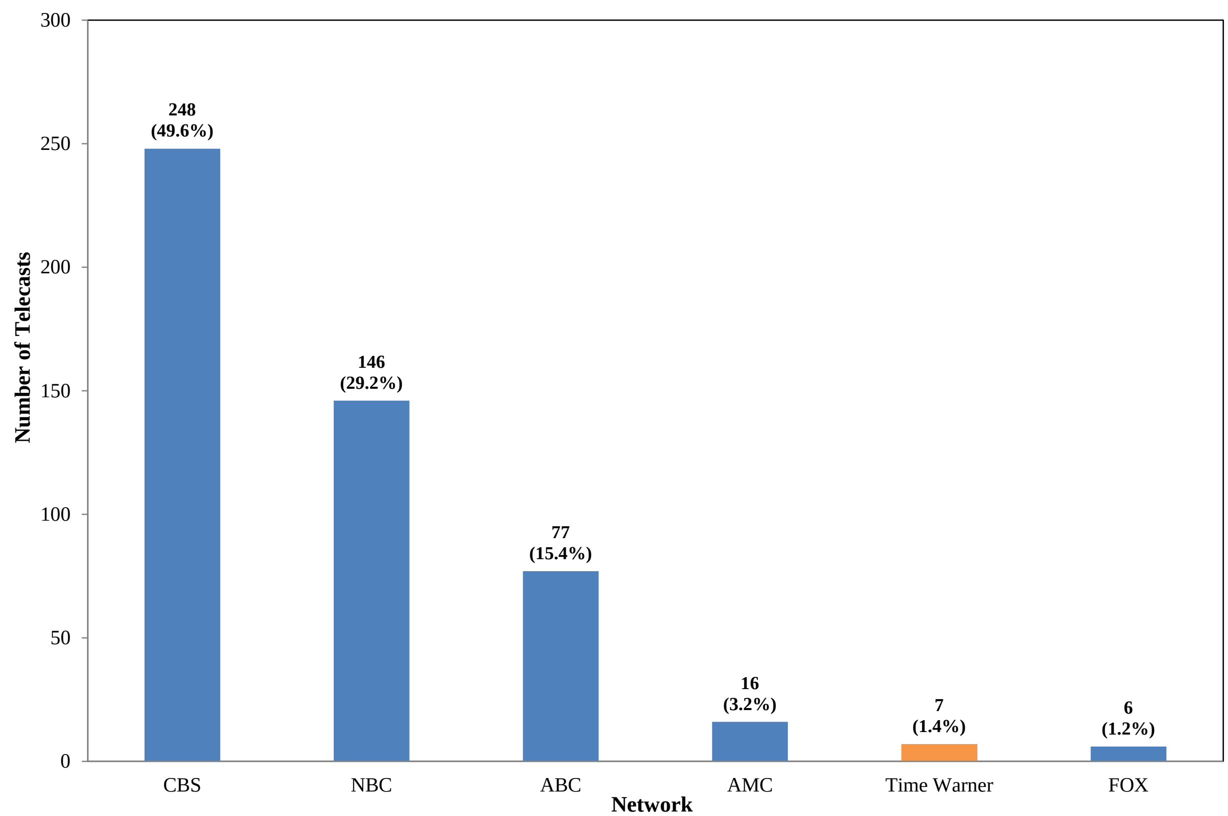
52 *See, e.g.*, Complaint, ¶¶ 4, 35.

Thrones on HBO, and its highest rated episode was the 164th most watched non-sports event.[53] No non-sports event on any Turner networks, including CNN, TBS or TNT, was among the 500 most watched telecasts as measured by Nielsen.[54]

Figure 5: Number of 500 Highest-Rated Non-Sports Telecasts by Network, 2017



Source: Nielsen, Average Audience Rating (US HH); Ratings: Live+7 Days DVR, Composite Viewership (Includes OTA) (trailing 12 months ended Nov. - 2017 broadcast calendar).

58. In terms of television series, as shown in Figure **6**, Nielsen data indicate that Time Warner networks accounted for only 17 of the top 500 series over this period (6 for HBO, 5 for

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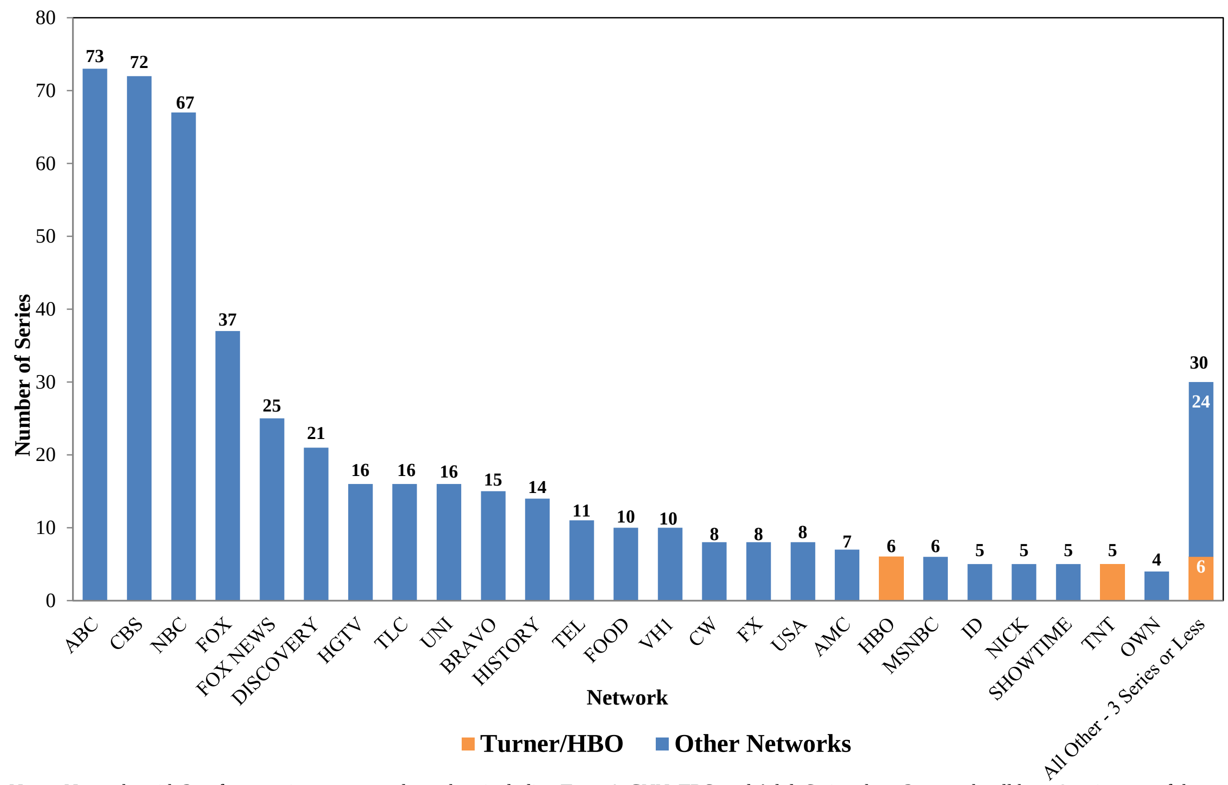
53 HBO has announced that the upcoming 8th season of Game of Thrones, consisting of six episodes airing in 2019, will be its last season. Joe Otterson, "'Game of Thrones' Season 8 Set to Air in 2019," Variety, January 4, 2018, *available at* http://variety.com/2018/tv/news/game-of-thrones-season-8-premiere-date-1202653371/.

54 These reflect live viewership plus viewership in the 7 days after the original telecast.

TNT, and 2 each for CNN, TBS and Adult Swim). Time Warner's highest rated series was HBO's Game of Thrones (rated 13 of 500), and the next highest rated series was TNT's Major Crimes (rated 152 of 500).[55]

Figure 6: Number of 500 Highest-Rated Series by Network, 2017



Notes: Networks with 3 or fewer series are grouped together, including Turner's CNN, TBS, and Adult Swim; these 3 networks all have 2 series; out of the 30 networks in this category, 6 are from Turner networks.
Series exclude sports events/commentary, movies, repeats and series with only 1 or 2 telecasts (specials/events).
Source: Nielsen, Average Audience Rating (US HH); Ratings: Live+7 Days DVR, Composite Viewership (Includes OTA) (trailing 12 months ended Nov. - 2017 broadcast calendar).

59. Plaintiff also cites Turner's sports programming, including the NCAA college basketball tournament, regular season and playoff games of Major League Baseball and the NBA as well as the PGA Championship, to support its claim that Turner has market power and that the proposed merger will harm competition.[56]

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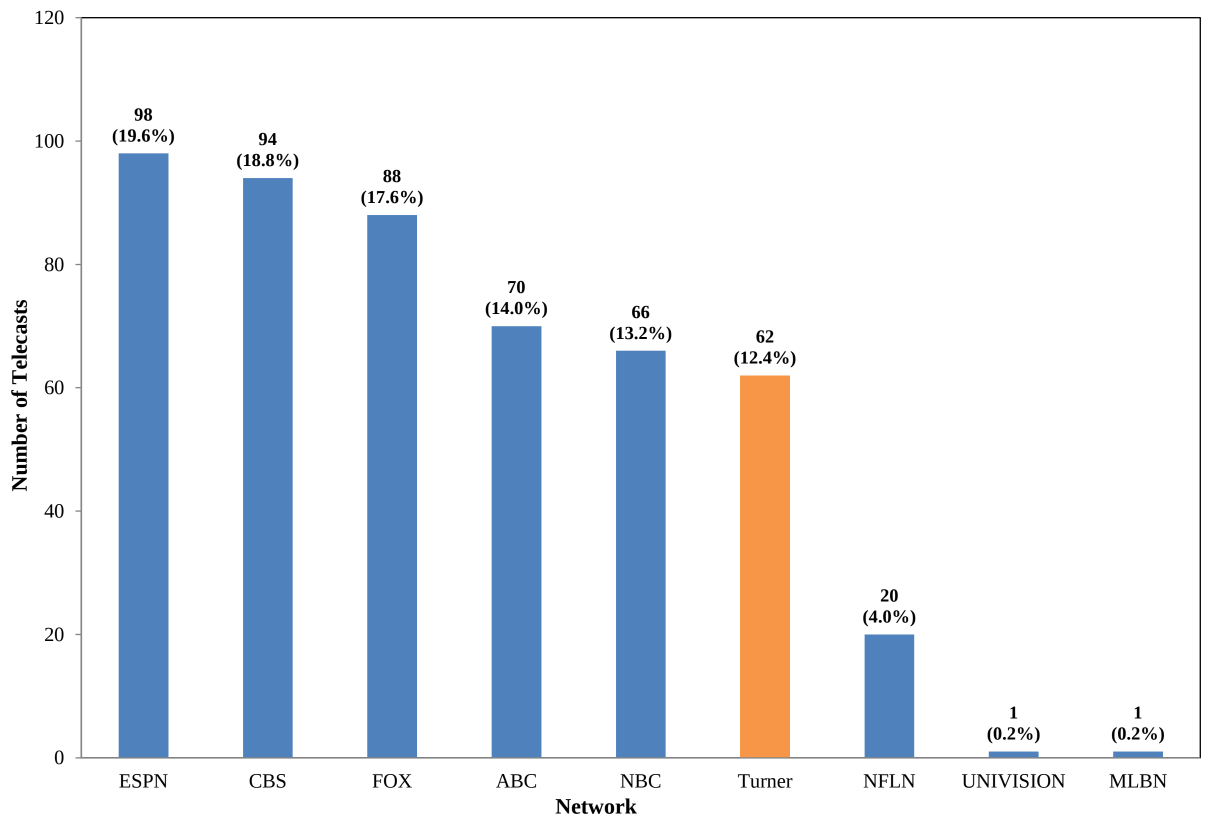
55 Nielsen, Average Audience Rating (US HH); Ratings: Live+7 Days DVR, Composite Viewership (Includes OTA), trailing 12 months ending Nov. – 2017 broadcast calendar.

56 Complaint, ¶ 35.

60. However, Plaintiff again fails to recognize Turner's limited sports programming. It accounted for only 12% of the top 500 nationally televised sporting events in 2017. As shown in Figure 7, Turner networks accounted for only 62 of the top 500 (12%) sporting events telecasts. The top rated Turner sports telecast event was a NCAA playoff "March Madness" regional final, which was the 161st most viewed national sport telecast.[57] The other Turner events among the top 500 sports telecasts were NCAA, NBA and MLB playoff games, the 2017 NBA All-Star events, and four regular-season NBA games. None of these events gained more viewers than the 500th most viewed non-sports telecast. So while there is no question that Turner content contains some high-quality sports, its overall share in sports programming is only 12%.

57 Turner networks did not carry the NCAA Men's Final Four in 2017. In 2016, the national final averaged 17.8 million viewers across the Turner networks. Rick Kissell, "Ratings: NCAA Men's Basketball Title Game Tumbles in First Year on Cable," *Variety*, April 5, 2016, *available at* http://variety.com/2016/tv/news/ncaa-mens-basketball-title-game-ratings-tumble-on-cable-1201745947/.

Figure 7: Number of 500 Highest-Rated Sports Telecasts by Network, 2017



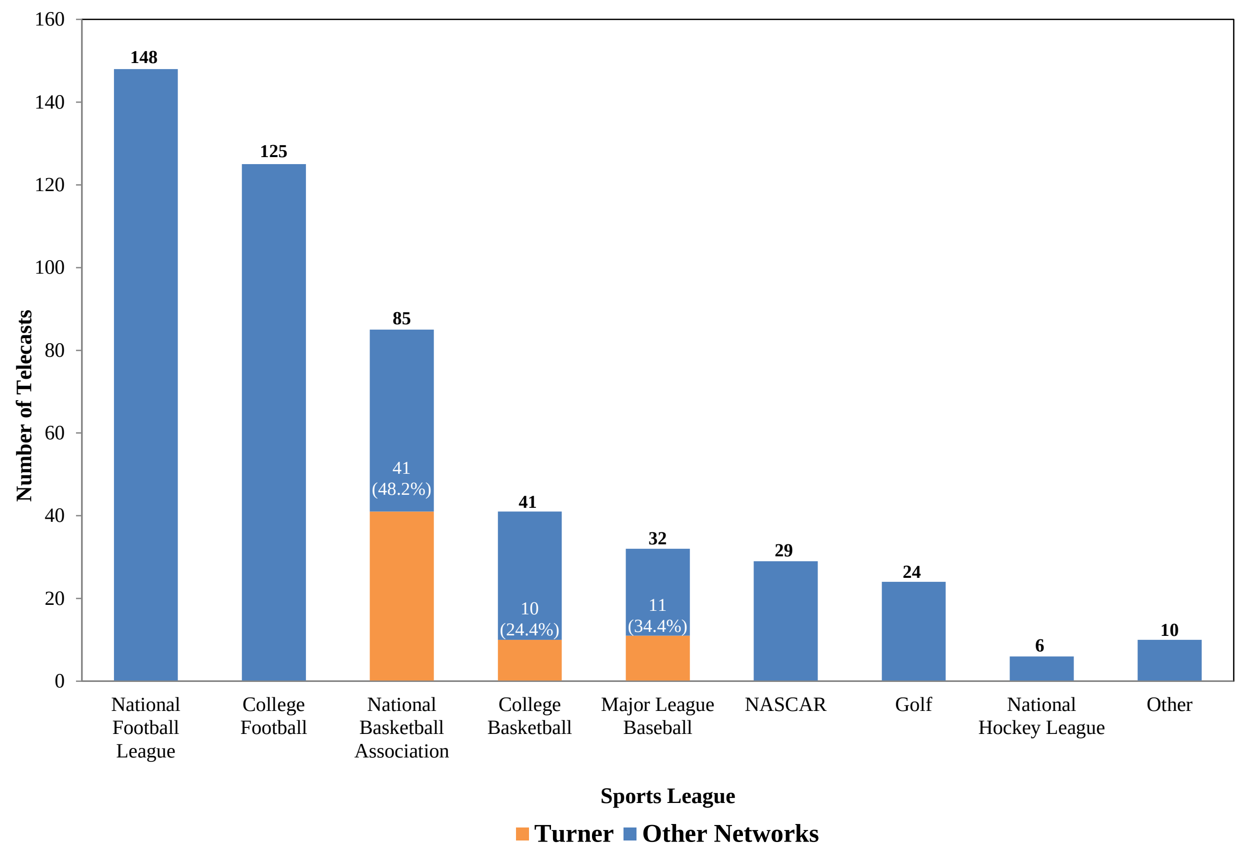
Notes: FOX and FS1 are groupd as FOX; NBCS and NBC are grouped as NBC; ESPN and ESPN2 are grouped as ESPN .
Source: Nielsen, Average Audience Rating (US HH); Ratings: Live+7 Days DVR, Composite Viewership (Includes OTA) (2017 broadcast calendar).

61. Turner's limited role in sports programming is further reflected in its complete or near absence from the sports that account for the most peak sports viewership. As Figure **8** indicates, these peak viewership events are dominated by National Football League ("NFL") and college football games (more than 50% of the top 500 telecasts), and Turner has no NFL or college football broadcast rights. Turner has no broadcast rights for Olympic coverage, the National Hockey League, NASCAR, Major League Soccer, or tennis. Turner has rights to roughly 1% of MLB games and less than 8% of NBA games, and games broadcast on Turner are available online through "alternate angle" broadcasts without a pay-TV subscription via TNT Overtime

and MLB.TV (for post-season games) in any event.[58] Many local baseball games are also available through regional sports networks even when they are also on Turner.

[58] Calculation assumes maximum number of playoff games for both sports. Turner Sports Rights Landscape, December 7, 2017. "NBA Frequently Asked Questions," NBA.com, September 23, 2016, *available at* http://www.nba.com/news/faq#/; Meggie Zahneis, "Scheduling an MLB season is no easy task," MLB.com, January 23, 2012, *available at* http://mlb.mlb.com/news/print.jsp?ymd=20120123&content_id=26438868; "Postseason Picture", MLB.com, *available at* http://mlb.mlb.com/mlb/standings/postseason-picture/. [redacted] The MLB website does require a subscription. MLB website, "MLB.TV Subscription Access," *available at* http://mlb.mlb.com/mlbtv/help-center/subscription_access.jsp.

Figure 8: Number of 500 Highest-Rated Sports Telecasts by Sports League, 2017



Source: Nielsen, Average Audience Rating (US HH); Ratings: Live+7 Days DVR, Composite Viewership (Includes OTA) (2017 broadcast calendar).

62. As another metric to measure Turner's importance in content, I have also analyzed Turner's share of peak viewing events based on 2016 set top box viewing data from DIRECTV.[59] I define a "peak event" as any 30-minute block of programming watched by at least 5%, 10% or 15% of all viewers. This simply measures how often there are popular blocks of programming on a given network, regardless of the particular content being broadcast. I then ask what networks have the largest shares of these popular blocks. Time Warner's share varies

59 2016 DIRECTV set top box data as previously produced to DOJ on April 26, 2017.

between 1.2% and 3.9% whether including just Turner, or also Time Warner's premium channels.[60]

[60] Details provided in my backup materials.

Table 5: Shares of Set Top Box Peak Viewing Events

Share of the Number of All Peak Viewing Pacific Time Blocks

		Based on Blocks with At Least This Fraction of Viewers Watching		
Rank	**Channel Name**	**5%**	**10%**	**15%**
1	NBC	35.2%	40.3%	36.6%
2	ABC	31.5%	14.1%	8.7%
3	CBS	17.3%	18.3%	17.4%
4	FOX	5.3%	12.7%	20.6%
5	ESPN	2.4%	5.5%	8.7%
6	TNT	1.6%	2.4%	3.9%
7	Bravo	1.0%	0.0%	0.0%
8	FOX News Channel	0.9%	0.6%	0.0%
9	CNN	0.7%	0.7%	0.0%
10	NFL Network	0.6%	0.5%	0.4%
	Others	3.4%	4.9%	3.8%
	All Turner Channels	**2.4%**	**3.2%**	**3.9%**
	All Time Warner Channels	**2.7%**	**4.0%**	**3.9%**

Share of the Number of All Peak Viewing Eastern Time Blocks

		Based on Blocks with At Least This Fraction of Viewers Watching		
Rank	**Channel Name**	**5%**	**10%**	**15%**
1	NBC	35.8%	46.2%	33.7%
2	ABC	29.2%	10.8%	8.6%
3	CBS	24.6%	21.6%	27.0%
4	FOX	3.6%	9.5%	18.6%
5	ESPN	2.5%	6.0%	5.9%
6	FOX News Channel	1.1%	1.6%	0.5%
7	TNT	0.7%	0.5%	0.4%
8	NFL Network	0.4%	0.5%	0.6%
9	AMC	0.3%	1.2%	3.7%
10	CNN	0.3%	0.6%	0.0%
	Others	1.5%	1.6%	0.8%
	All Turner Channels	**1.3%**	**1.8%**	**1.2%**
	All Time Warner Channels	**1.3%**	**2.4%**	**1.2%**

Notes:
Includes live and DVR viewing up to 7 days after the initial broadcast for all programs aired in 2016.
Restricted to households that watched a block for at least 10 minutes total.
Households that are tuned into a channel for longer than 16 contiguous hours or who watched a program for less than 1 minute are dropped.
Analysis is based on UTC time.
Source: DIRECTV 2016 Set Top Box Data Provided to DOJ on April 26, 2017.

63. Overall, then, it is not clear exactly what content Plaintiff can or will point to in support of its claims that Turner content will give AT&T the ability to use that content to substantially lessen competition in video distribution.

64. Instead of presenting any measures of the importance of Turner content, the Plaintiff relies on documents that describe that Turner content as "important" and "must have," which Plaintiff uses as a basis to claim that the owner of Turner content has sufficient power to substantially lessen competition in distribution.

65. From an economic perspective, one should not confuse colloquial use of the term "must have"—which is common among networks—with the claim that the owner of an input has sufficient market power to substantially lessen competition in distribution. In referring to Turner content as "must have," the Complaint refers to Time Warner documents describing its own content.[61] It is common within the industry for owners of high quality video content to tout their programming using terms such as "must have."[62]

66. As far as any reference to data, Plaintiff cites to a Time Warner report stating that Turner networks include "three of the top five basic cable networks" without specifying the year or metric.[63] The reference appears to be to 2016 and for primetime advertising-supported cable networks among adults 18-49, so it is not the general population, and also excludes broadcast

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61 *See, e.g.*, Complaint, ¶¶ 4, 19.

62 *See, e.g.*, Georg Szalai, "Amazon Strikes AMC Studios Int'l Output Deal, Takes Ridley Scott's 'The Terror,'" *Hollywood Reporter*, November 20, 2017, *available at* https://www.hollywoodreporter.com/news/amazon-takes-ridley-scotts-terror-under-amc-studios-output-deal-1060174 (discussing AMC networks as "must have"); Gunnar Wiedenfels, Discovery Communications Chief Financial Officer, Bank of America Merrill Lynch Media, Communications & Entertainment Conference, September 8, 2017 (discussing Discovery networks as "must have"); and Miguel Penella, RLJ Entertainment CEO, "RLJ Entertainment Total Digital Channel Subscribers Surpass 600,000 Mark," Press Release, September 13, 2017 (discussing Acorn TV and UMC networks as "must have").

63 Complaint, ¶ 4.

networks and OVD viewership.[64] As noted above, Turner has none of the top 5 networks when all households and networks are included.

67. Another statistic Plaintiff points to in support of its claim that Time Warner content has market power is that CNN, TBS, and TNT are carried on cable subscription tiers with more than 90 million subscribers.[65] But this statistic cannot possibly identify programming that, in Plaintiff's words, is "sufficiently unique and attractive" to raise substantial competitive concerns.[66] Indeed, the most widely distributed cable networks nationally are the shopping channel QVC and C-Span. More generally, as shown in Table 6, there are nearly 60 networks that are available to over 75 million subscribers, again demonstrating the large range of content options, of which only a small number are controlled by Turner. In short, a broad network reach certainly does not establish or perhaps even suggest that a network has substantial market power.

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64 Time Warner, 2016 Annual Report, *available at* http://www.timewarner.com/sites/timewarner.com/files/downloads/twx_2016_annual_report.pdf, p. 6 (p. 8 of the PDF).

65 Complaint, ¶ 4.

66 Complaint, ¶ 24.

Table 6: Cable Networks with More Than 75 Million Subscribers in 2017

	Network	Parent	Subscribers (millions)		Network	Parent	Subscribers (millions)
1	QVC	LIBERTY INTERACTIVE CORPORATION	106.8	30	CNBC	COMCAST	88.3
2	C-SPAN	NATIONAL CABLE SATELLITE	96.5	31	VH1	VIACOM	87.8
3	FOOD NETWORK	THE EW SCRIPPS COMPANY	93.3	32	ESPN	THE WALT DISNEY COMPANY	87.8
4	TBS	TIME WARNER	92.1	33	ESPN2	THE WALT DISNEY COMPANY	87.7
5	USA	COMCAST	92.0	34	MTV	VIACOM	87.6
6	CNN	TIME WARNER	91.9	35	TV LAND	VIACOM	87.6
7	DISCOVERY CHANNEL	DISCOVERY	91.5	36	BRAVO	COMCAST	87.5
8	HGTV	THE EW SCRIPPS COMPANY	91.5	37	TRUTV	TIME WARNER	87.5
9	DISNEY CHANNEL	THE WALT DISNEY COMPANY	91.4	38	WE TV	AMC NETWORKS	86.8
10	HISTORY	HEARST	THE WALT DISNEY COMPANY	91.4	39	EVINE LIVE	EVINE LIVE INC.	86.1
11	HLN	TIME WARNER	91.3	40	INVESTIGATION DISCOVERY	DISCOVERY	85.1
12	CARTOON NETWORK	TIME WARNER	91.1	41	FOX BUSINESS NETWORK	21ST CENTURY FOX	84.9
13	TNT	TIME WARNER	91.0	42	FOX SPORTS 1	21ST CENTURY FOX	84.8
14	HSN	LIBERTY INTERACTIVE CORPORATION	90.9	43	TRAVEL CHANNEL	THE EW SCRIPPS COMPANY	84.6
15	AMC	AMC NETWORKS	90.8	44	THE WEATHER CHANNEL	THE BLACKSTONE GROUP	BAIN CAPITAL		83.9
16	LIFETIME TELEVISION	HEARST	THE WALT DISNEY COMPANY	90.7	45	BET	VIACOM	83.9
17	FX NETWORK	21ST CENTURY FOX	90.7	46	FXX	21ST CENTURY FOX	83.9
18	NATIONAL GEOGRAPHIC	21ST CENTURY FOX	90.4	47	NBC SPORTS NETWORK	COMCAST	83.8
19	A&E	HEARST	THE WALT DISNEY COMPANY	90.4	48	SPIKE	VIACOM	83.5
20	TLC	DISCOVERY	90.2	49	INSP	INSPIRATION MINISTRIES	82.2
21	SYFY	COMCAST	90.1	50	BBC AMERICA	BBC	80.1
22	E! ENTERTAINMENT TELEVISION	COMCAST	90.0	51	WGN AMERICA	TRIBUNE MEDIA COMPANY	79.6
23	FOX NEWS CHANNEL	21ST CENTURY FOX	90.0	52	TURNER CLASSIC MOVIES	TIME WARNER	78.0
24	MSNBC	COMCAST	89.9	53	OWN: OPRAH WINFREY NETWORK	DISCOVERY	78.0
25	FREEFORM	THE WALT DISNEY COMPANY	89.5	54	GOLF CHANNEL	COMCAST	76.0
26	NICKELODEON	VIACOM	89.5	55	GSN	SONY	75.7
27	COMEDY CENTRAL	VIACOM	89.3	56	OXYGEN	COMCAST	75.5
28	HALLMARK CHANNEL	HALLMARK CARDS	88.9	57	MTV2	VIACOM	75.4
29	ANIMAL PLANET	DISCOVERY	88.8				

Source: SNL Kagan, TV Network Summary: Average Subscribers, data pulled January 11, 2018.

68. The growth in both the amount and the sources of video content, leading to low and declining shares for Turner across a wide variety of metrics, undermines Plaintiff's claim that Turner has the power to be used to substantially lessen competition in the video distribution market.

C. EVIDENCE ON BLACKOUTS AND OVDS' AVOIDANCE OF TURNER FURTHER UNDERMINES PLAINTIFF'S CLAIM THAT THE TURNER CONTENT CAN BE USED TO SUBSTANTIALLY HARM COMPETITION IN VIDEO DISTRIBUTION

69. When possible, economic analysis looks to empirical evidence, such as historical events or "natural experiments," that are informative regarding the potential competitive effects of a proposed merger.[67] Such evidence is valuable because it provides a way to test the Plaintiff's theory that Turner content is so competitively significant that AT&T could use its control over that content to substantially harm competition in video distribution.

70. I discuss two examples of evidence below (and other evidence in the following sections): Long-term blackouts of a major cable programmer, and entry by VMVPDs that do not carry Turner networks.

1. Prior Long-Term Blackouts of Viacom Have Not Resulted in Substantial Harm to MVPDs

71. In order to test Plaintiff's theory that Turner content can be used to substantially harm competition, I looked for prior events in which an MVPD lost access to cable networks comparable to Turner for an extended period.[68] If Plaintiff is correct that Turner content can be used to substantially harm competition in video distribution, then I would expect to see large

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[67] *See* Horizontal Merger Guidelines, § 2.1.2.

[68] Importantly, there are few such events available to study. The scarcity of such events is itself economically significant, because it demonstrates that both content providers and distributors have much to gain from reaching a carriage deal; by the same token, not only the distributor but also the programmer will suffer losses if the parties fail to make a deal. It is presumably for this reason that Plaintiff does not allege that Turner would be likely to withhold content from MVPDs after the merger.

subscriber losses from the MVPD blacked out from content. But the evidence is that the impact of losing long-term access to content like Turner's is quite limited.

72. The best available estimate of the likely consequence of the long-term loss of the Turner networks on an MVPD is the subscriber loss experienced by cable operator Suddenlink when it did not reach agreement for access to Viacom's networks (including Nickelodeon, Comedy Central, MTV and others) from the fourth quarter of 2014 to the third quarter of 2017.[69] For such "blackout" evidence to be informative about the importance of Turner, it should meet two criteria.

- First, the blackout needs to be long lasting, both so that existing and potential new subscribers have time to react, and, equally importantly, so that the MVPD has time to react competitively to the loss of content. Possible MVPD reactions include: (i) moving new content onto affected programming tiers, obtaining additional networks, or moving networks from higher tiers to lower tiers; (ii) improving save desk offers;[70] or (iii) reducing subscription prices (which would be consistent with the fact that its content costs fall when content is lost). It is important to note that pursuit of some of these options makes economic sense only for truly long-term blackouts, e.g., replacing dropped networks with new networks can involve signing new long-term contracts with the replacement networks.[71] MVPDs that have had long-term blackouts can and do

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69 The blackout did not end until after Suddenlink was acquired by Altice, which subsequently negotiated with Viacom for carriage. (Mike Farrell, "Altice Closes Suddenlink Deal," *Multichannel News*, December 21, 2015, *available at* http://www.multichannel.com/news/cable-operators/altice-closes-suddenlink-deal/396139; Greg Evans, "Viacom & Altice USA Announce Advertising And Content Distribution Pact," *Deadline Hollywood*, May 25, 2017, *available at* http://deadline.com/2017/05/viacom-altice-usa-advertising-distribution-1202102661/.)

70 Generally speaking, customers can only discontinue service with an MVPD by calling the MVPD. MVPDs maintain "save desks" of customer service representatives that are empowered to make offers to entice valuable customers to remain with the MVPD.

71 *See, e.g.*, [redacted] "Viacom Update," undated, [redacted]

undertake exactly these responses, including signing new contracts for replacement networks.[72] The relevant issue for assessing the market power of some specific content to harm competition in video distribution markets is not whether withholding content would lead to departures from the MVPD if MVPDs were not permitted to react to its loss, but rather whether MVPDs can find ways to react that enable them to continue to compete effectively.

- Second, the content involved in the observed blackout needs to be sufficiently similar to Turner content to provide a reasonable proxy for the importance of Turner content.

73. The Suddenlink/Viacom blackout meets both criteria. **First**, the Suddenlink/Viacom blackout is the closest thing to a permanent loss of programming for a major group of cable networks of which I am aware, lasting nearly three years (along with the Cable One/Viacom blackout which I discuss next, but for which less information is available). The Suddenlink blackout began on September 30, 2014. Suddenlink adjusted its content offerings to replace the

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[redacted] "Viacom Removal Plan," [redacted]

72 *See, for example*, Suddenlink, Cequel Communications Holdings I, Fourth Quarter and Full Year 2014 Results, February 24, 2015, Slide 4.

For other discussions of replacing networks in event of a blackout, *see* [redacted] "Turner Networks Analysis," [redacted] TWI-LIT-00535324, Turner email re: SNL Kagan article, October 23, 2013, discussing the minimal impact of the blackout.

Viacom content, launching carriage of "alternative channels from Fox, Disney, Discovery, Hallmark, [and] others introduced Oct. 1, 2014."[73]

74. Notably, the observed impacts of the Viacom blackout on Suddenlink confirm the limited competitive significance of such content loss. Suddenlink reported an immediate yet limited impact on subscribers, which lasted only a short while. In the fourth quarter of 2014, Suddenlink reported that the "Viacom decision resulted in Q4 video customer losses of 2.0% - 2.5%,"[74] but the impact was dying out by the end of the quarter: "Two thirds of impact seen in first six weeks, nearly 90% through November. Little impact seen since mid-December."[75] To be clear, Suddenlink is measuring the impact on net gains of subscribers, reflecting both departure of existing subscribers (churn) and decrease in the number of new subscribers.

75. Figure 9 illustrates Suddenlink's public statements to its shareholders about subscriber losses in the quarter following the Viacom blackout. This figure is taken directly from Suddenlink's Fourth Quarter and Full Year 2014 Results presentation.

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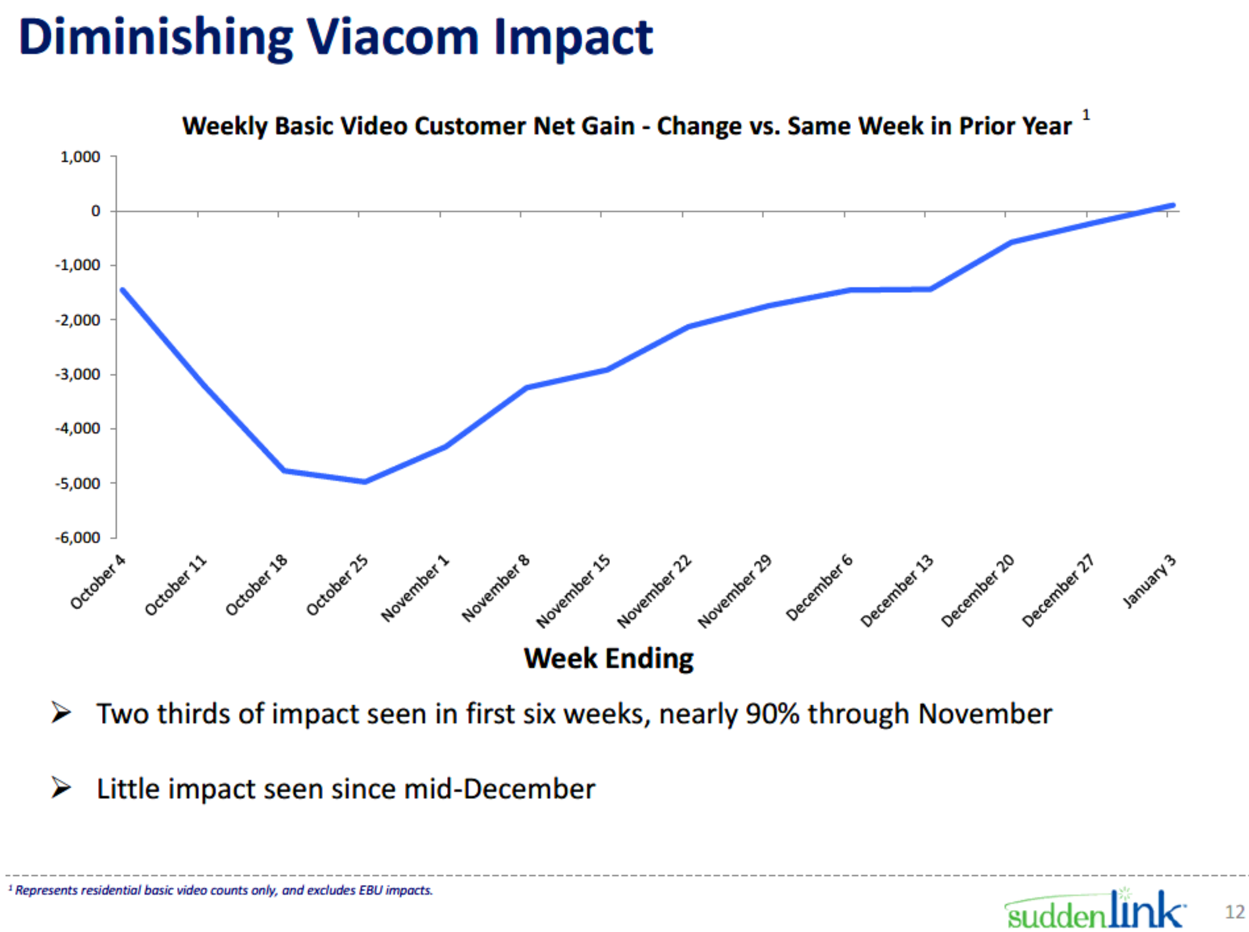
73 Suddenlink, Cequel Communications Holdings I, Fourth Quarter and Full Year 2014 Results, February 24, 2015, Slide 4.

74 Suddenlink, Cequel Communications Holdings I, Fourth Quarter and Full Year 2014 Results, February 24, 2015, Slide 11. *See also* [redacted]

75 Suddenlink, Cequel Communications Holdings I, Fourth Quarter and Full Year 2014 Results, February 24, 2015, Slide 12.

Figure 9: Suddenlink Estimate of Impact of Viacom Blackout on Subscribers (Chart Presented by Suddenlink to Investors)



76. Thus, although there was an impact from the Viacom blackout, Suddenlink found that the ongoing effect on subscribership soon became negligible, resulting in a total loss of subscribers of only 2.0 to 2.5%.

77. **Second**, Viacom in 2014 is a reasonable proxy for a possible Turner blackout. Viacom and Turner have similar ratings; in 2014, based on SNL Kagan data, Viacom's share of broadcast and basic cable viewership was 8.3% and in 2016 Turner's was 7.8%; using Nielsen data, the

shares are 8.8% for Viacom in 2014 and 8.5% for Turner in 2017, respectively.[76] They also have similar programming expenditures; in 2014, SNL Kagan estimated that Viacom's programming expenditures were $3.1 billion and Turner's programming expenditures were $3.7 billion in 2017.[77] Finally, Viacom had a larger share of original shows than Turner; in 2014, Viacom had 12.5% share and Turner had 5.3% share in 2016, according to data from Nielsen.[78] Viacom also had a larger share of top 500 series than Turner and HBO combined, both in 2014 and today.[79]

78. As further support for the relevance of the Viacom blackout in assessing Turner's importance, firms use Viacom generally, and the Suddenlink/Viacom blackout specifically, as a benchmark for a possible Turner blackout.[80] For example, AT&T has itself used Viacom as a proxy for Turner in internal analyses for a blackout. AT&T based its internal forecast of the impact of a blackout of Turner in 2013 on AT&T's experience with a blackout of Viacom in 2012, and AT&T expected the impact of a Turner loss to be very similar to the impact from the Viacom blackout.[81]

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76 Nielsen Local Television Ratings Data; SNL Kagan, "TV Network Summary," data pulled January 11, 2018.

77 SNL Kagan, "TV Network Summary," data pulled January 11, 2018.

78 Competitive Analysis Since 2011 Originals vs All Cable.xlsx, which I understand is based on Nielsen.

79 In 2014, Turner and HBO had 6.8% of the top 500 series, while Viacom had 7.8%. In 2017, Turner and HBO had 3.4% and Viacom had 4.4%. Top 500 Series by AA Rtg 2013-2017.xlsx.

80 *See, e.g.*, Jason Bazinet, Michael Rollins, Catherine O'Neill, Thomas Singlehurst, and Mark May, "The Curtain Falls: How Silicon Valley is Challenging Hollywood," *Citi*, October 2015, pp. 50, 56-57. Citi calculated "Predicted Defection Rates" in October 2015 specifically based on Suddenlink's reported impact. After accounting for differences in ratings, top shows, and user engagement ("passion"), Citi's Predicted Defection Rates for Time Warner and Viacom were identical at 2.9%.

81 ATT-DOJ2R-08581120, DIRECTV, "Turner Renewal Strategy," September 4, 2013, p. 17.

79. Cable One has also had a long-term blackout of Viacom, although [redacted] has expressed the view that Suddenlink took more mitigating actions[82] and Cable One did not provide the detailed public statements on impact that Suddenlink did. This blackout began April 1, 2014 and is still ongoing. Cable One added replacement channels, but fewer than Suddenlink did.[83] Cable One also responded with lower prices.[84] Cable One estimated in 2017 that the Viacom blackout had a total [redacted] impact on subscribership over the course of [redacted] and had [redacted][85]

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82 [redacted] CABLEONE_0000016, Cable One, Inc., Cable One Second Quarter Earnings Conference Call, August 6, 2015, p. 2, Thomas Might, CEO stating during Cable One's 2nd Qtr. Earnings Conference Call that "dropping Viacom was not our strategy; it was a small tactic that fit our strategy very well. It cost just about 2% of our video subs."

83 For a list of Cable One replacement channels, *see* Michael Pineda, "New channel lineup implemented," *The Daily Ardmoreite*, April 2, 2014. For a list of Suddenlink replacement channels, *see* Cablefax staff, "Carriage Wars: Suddenlink to Drop Viacom Nets on Oct 1," *CableFax*, September 30, 2014 *available at* http://www.cablefax.com/programming/carriage-wars-suddenlink-drop-viacom-nets-oct-1; Cass Rains, "No more SpongeBob? Suddenlink, Viacom in dispute over deal," *Enid News and Eagle,* September 30, 2014 *available at* http://www.enidnews.com/news/no-more-spongebob-suddenlink-viacom-in-dispute-over-deal/article_0b87046e-48bd-11e4-9dae-77d7ad4de976.html; Jared Hunt, "Viewers losing options Suddenlink dropping Nickelodeon, MTV, VH1, CMT, others," *Charleston Gazette*, October 1, 2014; Cass Rains, "Viacom: Suddenlink to blame for loss of Comedy Central, other channels," *Enid News and Eagle*, October 1, 2014 *available at* http://www.enidnews.com/news/viacom-suddenlink-to-blame-for-loss-of-comedy-central-other/article_38c2a4bc-4988-11e4-85c0-2f0b6b18aef8.html.

84 Philip Cusick, Richard Choe and Eric Pan, "Cable One: Initiating with a Neutral Rating and YE2016 Price Target of $476," *JP Morgan*, July 1, 2015, pp. 7-8, noting that Cable One took a smaller than usual rate adjustment in second half 2014 after the Viacom dispute.

85 [redacted] *See, also*, a [redacted] estimate from [redacted] estimating the Cable One impact at [redacted] and a [redacted] citation to an [redacted] estimate that Suddenlink lost [redacted] of video subscribers because of the Viacom drop and Cable One lost [redacted]

80. The three year blackout, according to Suddenlink, caused only a small loss[86] and the Cable One blackout likewise led to only a small loss, as discussed above. If multi-year foreclosure of an entire set of popular networks caused only a small loss of subscribers, after the MVPDs took actions to mitigate the competitive impact, then it is hard to see how a non-foreclosure event such as raising prices could have a substantial effect on competition in video distribution.

2. Entry by VMVPDs without Turner as well as AT&T's Contractual Commitments Undermine the Plaintiff's Theory of Harm

81. Plaintiff claims that, after the merger, AT&T/Time Warner would have an incentive to withhold Turner programming from VMVPDs, leading to "severe effects on competition."[87]

82. Virtual MVPDs, like MVPDs, provide distribution of "linear" or live TV over the Internet. Many of these VMVPDs have large corporate owners, including YouTube TV, which is owned by Google; Vue, owned by Sony; Hulu, 90% owned by Disney, Fox, and Comcast and 10% by Time Warner; Stream, owned by CenturyLink; and Sling, owned by DISH.[88]

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86 *See, e.g.*, Altice NV & SFR Group SA Q2 2016 Results – Earnings Call Transcript, pp. 16-17.

87 Complaint, ¶ 40.

88 Todd Spangler, "Skinny Bundles Boom: Charter, CenturyLink Latest to Target Cord Cutters With Streaming Service," Variety, June 30, 2017, *available at* http://variety.com/2017/digital/news/charter-centurylink-cord-cutters-skinny-bundles-tv-1202485093/; Hulu press release, "Time Warner Joins Hulu as Equity Owner and Signs Affiliate Agreement for New Hulu Live-Streaming Service to Carry Turner Networks," August 3, 2016 *available at* https://www.hulu.com/press/time-warner-joins-hulu-as-equity-owner-and-signs-affiliate-agreement-for-new-hulu-live-streaming-service-to-carry-turner-networks/; SNL Kagan, "VSP Channels Comparison," June 2017, data pulled November 21, 2017; SNL Kagan, "U.S. Virtual Service Provider Comparison," data pulled November 21, 2017; SNL Kagan, "The State of Online Video Delivery: An Analysis of Over the Top and TV Everywhere Trends," 2017 Edition; CenturyLink Stream Website, *available at* https://www.centurylinkstream.com/; Philo website, *available at* https://try.philo.com; Cara Lombardo, "Streaming Service Tests Appetite for Low-Cost TV Without Sports," *Wall Street Journal*, November 14, 2017, *available at* https://www.wsj.com/articles/entertainment-channels-launch-16-a-month-tv-bundle-with-

83. Some of these VMVPDs do not use Turner networks. Four VMVPDs have entered prior to 2017. One of those—fuboTV—does not carry Turner networks. fuboTV is a sports oriented VMVPD. That is particularly interesting given Plaintiff's emphasis on the importance of Turner sports content. fuboTV does not consider that it must offer Turner channels. Instead, it offers live NFL, MLB, NBA, NHL, soccer and other college, regional, national and international league games.[89]

84. Four more VMVPDs have entered in 2017. Three of those four did not carry Turner networks at launch—YouTube TV, Philo TV and CenturyLink Stream, even though multiple VMVPDs were already on the market carrying Turner networks. See Table 7.[90]

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no-sports-1510656601; YouTube TV Help, "Available Locations," *available at* https://support.google.com/youtubetv/answer/7068923?hl=en.

89 fuboTV website, *available at* https://www.fubo.tv.

90 In addition, there are two other VMVPDs that are tied to a single broadband provider, e.g., Comcast's Instant TV and Charter's Spectrum TV, which are only available to subscribers of Comcast and Charter's Internet services, respectively. Comcast website, *available at* https://www.xfinity.com/support/articles/xfinity-instant-tv-faqs. Swapna Krishna, "Charter tests streaming-only cable service for $20/month," *engadget*, June 30, 2017, *available at* https://www.engadget.com/2017/06/30/charter-spectrum-streaming-only-cable-service/.

Table 7: VMVPD Carriage of Turner Networks

Launch Date	Provider	Carries Turner Network	Availability	Networks	Standard Pricing
Jan-15	fuboTV	No	National	60+	$14.99 - $49.99
Feb-15	Sling TV	Yes	National	150+	$20.00 - $40.00
Mar-15	PlayStation Vue	Yes	National	90+	$39.99 - $74.99
Nov-16	DIRECTV NOW	Yes	National	120+	$35.00 - $70.00
Apr-17	YouTube TV	No	84 cities	45+	$35.00
May-17	Hulu with Live TV	Yes	National	50+	$38.99 - $43.99
Jun-17	CenturyLink Stream	No	National	90+	$15.00 - $45.00
Nov-17	Philo TV	No	National	37+	$16.00 - $20.00

Sources: SNL Kagan, "VSP Channels Comparison," June 2017, data pulled November 21, 2017; SNL Kagan, "U.S. Virtual Service Provider Comparison," data pulled November 21, 2017; SNL Kagan, "The State of Online Video Delivery: An Analysis of Over the Top and TV Everywhere Trends," 2017 Edition; CenturyLink Stream Website (https://www.centurylinkstream.com/); Philo Website (https://try.philo.com/); Cara Lombardo, "Streaming Service Tests Appetite for Low-Cost TV Without Sports," *WSJ* , November 14, 2017, *available at:* https://www.wsj.com/articles/entertainment-channels-launch-16-a-month-tv-bundle-with-no-sports-1510656601; YouTube TV Help, "Available locations," *available at:* https://support.google.com/youtubetv/answer/7068923?hl=en.

85. The fact that there are already multiple VMVPDs competing today, and several of them found it viable to enter without Turner networks, undermines Plaintiff's theory of harm that withholding Turner programming would have "severe effects on competition." Furthermore, as I discuss next, those VMVPDs that do carry Turner are contractually protected from losing that content and have access to arbitration about prices.[91] Thus any potential harm to competition would have to be based on withholding content or raising prices to additional VMVPDs beyond the existing eight. It is hard to see how such a strategy could produce a substantial harm to competition in video distribution.

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91 I understand that MVPDs that currently carry Turner that wish to launch a VMVPD are guaranteed to be able to do so under the arbitration agreement that Turner has offered to all of its current distributors, conditioned upon the closing of the merger. I also understand that Turner will extend the same arbitration agreement to new OVDs.

IV. THE POST-MERGER CONTRACTUAL COMMITMENTS ELIMINATE PLAINTIFF'S THEORY OF HARM

86. Even if one were to ignore the extensive evidence presented thus far and conclude that the proposed transaction might be one of the rare vertical mergers in which harms outweigh benefits, there would remain an additional question to address. Are there contractual commitments already in place or remedies the Court could impose that preserve the benefits, while eliminating the possibility of alleged harms? If so, then the merger can be approved, thus preserving the benefits while avoiding the harms.[92]

87. The government has a long history of following this logic. There is substantial empirical support for that approach. A 2017 FTC study canvassing the competitive consequences of mergers dating back to 2006 finds that, when imposed, remedies intended to address the risk of harm to competition while allowing the parties to achieve the benefits of vertical integration have been effective at preserving competition in every instance when they have been imposed.[93]

88. Previous vertical mergers in the video industry, including DIRECTV-Fox and Comcast-NBCU, have been approved with conditions imposed by government agencies. In the present case, AT&T has contractually committed to baseball-style arbitration—with no possibility of content withholding since the content will remain available under the old terms during the arbitration—thus matching the key components of the government imposed conditions applied in the 2011 approval of the Comcast-NBCU merger. The AT&T conditions provide contractual rights to each current customer, enforceable by that customer, not promises to a government agency. No government intervention is needed either to create the conditions or to enforce them.

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[92] I do not address the question of whether there are remedies the Court could impose since my ultimate conclusion is that there is no harm from the merger.

[93] Federal Trade Commission, "The FTC's Merger Remedies 2006-2012: A Report of the Bureaus of Competition and Economics," January 2017, *available at*: https://www.ftc.gov/system/files/documents/reports/ftcs-merger-remedies-2006-2012-report-bureaus-competition-economics/p143100_ftc_merger_remedies_2006-2012.pdf.

89. Notably, one of the theories of harm evaluated in the Comcast-NBCU merger—higher prices due to an increase in bargaining leverage—was quite similar to Plaintiff's theory of harm here, and both the DOJ and the FCC concluded then that the conditions attached to the deal would fully resolve any concern. In particular, the FCC stated in its Comcast-NBCU Order that the arbitration provision was sufficient to "maintain the pre-integration balance of bargaining power" and thus "prevent" any exercise of increased market power, and thus would "effectively address" any concerns about price increase strategies due to increased bargaining leverage.

> To address this concern in prior transactions, the Commission has imposed baseball-style arbitration to maintain the pre-integration balance of bargaining power between vertically integrated programming networks and rival MVPDs. … This neutral dispute resolution forum will prevent Comcast-NBCU from exercising its increased market power to force Comcast's MVPD rivals to accept either inordinate fee increases for access to affiliated programming or other unwanted programming concessions, and will effectively address price increase strategies that could otherwise be used to circumvent our program access rules.[94]

90. Plaintiff and the FCC affirmatively claimed that the conditions imposed by them would be effective when they permitted the Comcast-NBCU transaction to proceed. Strikingly, however, Plaintiff in this case argues that the efficacy of the remedies in Comcast-NBCU is "irrelevant" to analysis of the proposed transaction, despite the fact that AT&T has provided contractually (not as part of any government enforced remedy) for the same type of arbitration conditions here.[95]

91. AT&T has asked Plaintiff for its position on the effectiveness of the Comcast-NBCU conditions, and Plaintiff has *not* claimed that the conditions have been ineffective, nor that there have been any price increases of NBCU networks as a result of the theory of harm they advanced

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[94] Comcast-NBCU Order, ¶ 50.

[95] Plaintiff argues in its January 4, 2018 interrogatory responses that "[w]hether the consent decree in the Comcast-NBCU transaction remedied the harm alleged in the underlying complaint is irrelevant to the determination of the likely competitive harm from this Transaction and the measures necessary to remedy that harm." Plaintiff's Objections and Responses to Defendants' First Set of Interrogatories, Case No. 1:17-cv-02511 (RJL), January 4, 2018, p. 30.

here combined with failure of the remedies. Indeed, Plaintiff has explicitly stated that it "does not, at this time, have a position as to whether any prior vertical integration between a programmer and a distributor resulted in higher video programming fees for MVPDs or OVDs or higher prices for consumers of MVPD or OVD services than would have prevailed absent the integration,"[96] and "does not, at this time, have a position as to whether the consent decree in the Comcast-NBCU transaction was, in retrospect, an effective remedy for the competitive harm alleged in the complaint."[97]

92. Plaintiff's refusal to consider how the contractual commitments of AT&T resolve Plaintiff's concerns stands in sharp contrast to government actions in previous cases. And it makes no sense as a matter of economics: given that vertical mergers typically have inherent benefits and this one in particular does, the appropriate goal should always be to find a way to capture those benefits while avoiding any harms, if feasible. As such, the government's claim that the efficacy of conditions like those agreed to here is "irrelevant" indicates that it is not evaluating this vertical merger in the proper economic framework. In fact, the contractual conditions that AT&T has agreed to completely eliminate the Plaintiff's theory of harm in this case. As the Complaint states repeatedly, the Plaintiff's theory of harm depends on a claim that the merged firm will have an improved bargaining position because the firm's situation if no agreement is reached and content is withheld will be improved and that, according to Plaintiff's bargaining model, will lead to increased content prices relative to a world with no merger.[98] But, in fact, the no agreement point in the Plaintiff's model is not possible by the very terms of the AT&T contractual commitment. AT&T has contractually committed that post-merger it will no longer have the ability to withhold content. Any threat to withhold Time Warner content from a current licensee is eliminated post-merger. So, while Time Warner could theoretically threaten

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96 Plaintiff's Objections and Responses to Defendants' First Set of Interrogatories, Case No. 1:17-cv-02511 (RJL), January 4, 2018, pp. 28-29.

97 Plaintiff's Objections and Responses to Defendants' First Set of Interrogatories, Case No. 1:17-cv-02511 (RJL), January 4, 2018, p. 31.

98 Complaint, pp. 1-2, ¶¶ 35, 36.

to withhold content today if a given distributor's offer is too low; post-merger, this threat is lost. As such, any bargaining leverage from this threat is *lost* due to the merger.

93. I find it difficult to see how Plaintiff can possibly ignore this simple logic. The bargaining theory sketched out in the Complaint appears to ignore that AT&T cannot contractually withhold content post-merger with Turner's existing licensees. Moreover, baseball-style arbitration is widely used as a mechanism for resolving commercial disputes because it gives both sides an incentive to make reasonable offers, as the arbitrator must choose one offer or the other and is likely to reject unreasonable offers (that are out of line with general industry content price trends). Not surprisingly, then, with the threat of baseball-style arbitration in the background, parties are often able to reach agreement without arbitration in the vast majority of negotiations, as shown by the rarity of arbitration requests in the Comcast-NBCU transaction.[99]

94. I understand that the Plaintiff has dismissed the contractual commitments as a "behavioral remedy" that requires on-going monitoring and thus will be less likely to be effective than "structural remedies." This argument is incorrect. The arbitration mechanism operates by changing the incentives faced by AT&T in negotiations compared to the incentives it would face absent the contractual commitment. As such, it could be properly considered to be a "structural" remedy," which, once imposed, requires only that firms operate in their own self-interest. In contrast, a "behavioral remedy" requires ongoing monitoring because it typically requires firms to act in ways that are counter to their self-interest.[100] I do not wish to argue about semantics: Plaintiff can call the contractual commitment whatever it likes. I simply make the point here that the contractual commitments of AT&T alter the incentives of the parties post-merger, prevent the

99 *See*, for example, Plaintiff's Objections and Responses to Defendants' First Set of Interrogatories, Case No. 1:17-cv-02511 (RJL), January 4, 2018, Interrogatory No. 10. Plaintiff's Supplemental Responses to Defendants' Interrogatory Nos. 5 and 10, Case No. 1:17-cv-02511 (RJL), January 15, 2018, Interrogatory No. 10. Only one arbitration was completed and that did not involve setting prices.

100 I too am skeptical of remedies that require extensive government monitoring but the AT&T contractual commitments do not.

harms that Plaintiff claims, and are self-enforcing, requiring no government monitoring or regulation.

95. In sum, even if one concluded there were some validity to Plaintiff's theory of harm in this case—contrary to the evidence I have presented above and am about to present in the next sections—the contractual conditions that AT&T has agreed to completely eliminate the mechanism of harm in that theory. Thus, with this condition in place, the benefits of the merger can be obtained with no possibility that the Plaintiff's theory of harm will come to pass.

V. EVALUATION OF THE EVIDENCE FROM PRIOR VERTICAL INTEGRATION IN THIS INDUSTRY REFUTES PLAINTIFF'S THEORY OF HARM

96. When possible, a useful way to study the effects of a proposed vertical merger can be an empirical investigation of past integration events in the industry. In this case there are several recent events to study. In particular, there have been three major integration or dis-integration events in this industry over the last several years: (1) the Comcast/NBCU merger in 2011; (2) the integration of Fox and DIRECTV in 2004 and their subsequent dis-integration in 2008; and (3) the dis-integration of Time Warner and Time Warner Cable in 2009. In this section, I show that the results of these events are not consistent with a claim that vertical integration in the video industry leads to higher prices for the associated content as Plaintiff's theory of harm predicts. I also explain why changes in the marketplace since these past events took place make it *even less likely* that the proposed transaction would harm competition relative to these historical events.[101]

97. Despite the obvious relevance of a study of the effects of recent vertical integration, Plaintiff opines that analysis of the pricing impact of past mergers between content providers and distributors is of no value for evaluating the proposed merger. In particular, Plaintiff claims that "[w]hether price effects are identifiable from any prior transaction is irrelevant to determining the likely competitive harm from this Transaction and the measures necessary to remedy that

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[101] In the body of the text I summarize my findings; the full econometric details of my analysis are presented in Appendix C and my backup materials.

harm."[102] I completely disagree. And I find this statement particularly surprising because, in my experience working at and with the Department of Justice, the Department routinely considers such historical marketplace evidence as part of the merger review process.[103] Plaintiff's theory predicts that vertical integration will lead to higher prices for integrated content; subjecting this economic theory to rigorous empirical testing based on evidence provides a powerful way to assess Plaintiff's claims about the likely effects of this transaction. In the present case, the empirical evidence does not support the theory, yet Plaintiff ignores this finding.

98. In the remainder of this section, I examine these events more closely, explain why they show no support for harm from vertical integration, and explain why marketplace changes since the most recent of these events (Comcast-NBCU) mean that there is even less cause for concern today than historically.

A. THE PRESENCE OF MULTIPLE DIS-INTEGRATION EVENTS DIRECTLY REFUTES PLAINTIFF'S THEORY OF HARM

99. Plaintiff argues that vertical integration between video distributors and content providers harms competition by raising content prices paid by rival distributors thus yielding higher prices to consumers for video distribution. If vertical integration actually created the market power to raise prices in this way, then it would be unlikely for integrated distributors/content providers to voluntarily choose to dis-integrate, since doing so would be expected to result in lower profits. In particular, if Plaintiff is correct that ownership of Turner content enabled Time Warner Cable to raise content prices, harm competition in video distribution and thereby increase its profits

102 Plaintiff's Objections and Responses to Defendants' First Set of Interrogatories, Case No. 1:17-cv-02511 (RJL), January 4, 2018, p. 28.

103 *See, e.g.*, Horizontal Merger Guidelines, §2.1.2 ("The Agencies look for historical events, or 'natural experiments,' that are informative regarding the competitive effects of the merger. For example, the Agencies may examine the impact of recent mergers, entry, expansion, or exit in the relevant market.").

then one would expect that Time Warner Cable would not agree voluntarily to give it up.[104] Similarly, if ownership by DIRECTV of significant content enabled DIRECTV to harm its distribution competitors and thereby gain significant profits—again as Plaintiff alleges—one would not expect to see DIRECTV dis-integrate from a content provider.

100. In fact, however, both such dis-integration events occurred. First, News Corp., which owns Fox networks, acquired a major stake in DIRECTV in 2004, but then the firms dis-integrated in 2008. Similarly, Time Warner Cable separated from Time Warner Inc. (the content company) in 2009. The fact that these two dis-integration events occurred directly counters Plaintiff's theory of harm in this case.

B. EVENTS SINCE THE COMCAST/NBCU MERGER REFUTE PLAINTIFF'S CLAIMS

101. Events since the merger of Comcast and NBCU in 2011 are particularly significant in evaluating the Plaintiff's theory of harm because many of the allegations of the present Complaint echo those in the Complaint that the Plaintiff filed in that case before entering into a consent decree with the merging parties.

102. For example, the Plaintiff alleged that the impact of the Comcast/NBCU merger on "emerging competition from the OVDs is extremely troubling" because "Comcast has an incentive to encumber … the development of" OVDs by denying them access to NBCU content or raising the price of such content. "As a result, … the future evolution of OVDs will likely be muted."[105]

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104 I note that the growth of digital and addressable advertising, and the evolution of related technologies such as the ability to provide addressable advertising over set top boxes, have occurred since those dis-integrations.

105 Complaint, *United States of America, State of California, State of Florida, State of Missouri, State of Texas, and State of Washington, Plaintiffs, v. Comcast Corp., General Electric Co., and NBC Universal, Inc.*, Case No. 1:11-cv-00106 (RJL), January 18, 2011 ("Comcast-NBCU Complaint"), ¶¶ 52-54. The Plaintiff also alleged that Comcast would raise the prices charged for NBCU content from competing MVPDs (or withhold the content entirely). Comcast-NBCU Complaint, ¶¶ 49-51. I discuss the evidence

103. In fact, those concerns have not occurred.

- Contrary to Plaintiff's claim that vertical integration would thwart the emergence of OVDs, several OVDs that were small or nonexistent in 2011 have become potent vertically integrated competitors in providing video content and distribution, including Netflix, Amazon, Hulu, Google, and Facebook, and now attract millions of subscribers. And as shown above, over 90 OVDs have entered the industry since 2011.[106] Since the time of the merger, Comcast/NBCU has seen its share of television viewership drop, with further declines projected, as households obtain service from distributors other than MVPDs, such as the OVDs.[107]

- Contrary to Plaintiff's claim that a vertically integrated Comcast would seek to harm OVDs (and the further claim that Comcast would have an incentive to coordinate with AT&T after this merger to further harm OVDs), Comcast has embraced OVDs. In particular, while there have been claims in the Comcast-NBCU merger that Comcast could use control of the set top box as a way to thwart OVDs, Comcast has actually added Netflix and Sling to its set top box, thus facilitating their growth.

- In addition, output of video content has increased dramatically, as explained in Section II above.

C. PRICE CHANGES FOLLOWING RECENT EVENTS REFUTE PLAINTIFF'S THEORY OF HARM

104. Plaintiff's theory of harm makes a simple, testable empirical prediction: content prices should be higher during periods when content providers are vertically integrated than when they are not. As I show in this section, this prediction is inconsistent with the evidence. Vertical integration does not lead to higher content prices. Whether because of the underlying economics

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concerning the effect of the merger on the prices that MVPDs pay for NBCU content below.

106 *See* Table 2.

107 SNL Kagan, Multichannel: U.S. Multichannel Industry Benchmarks, data pulled January 15, 2018.

or because the conditions imposed by the government in Comcast-NBCU worked (with similar conditions contractually agreed to by AT&T here), the data reject Plaintiff's claim that vertical integration in the video industry yields higher content prices.

1. **DIRECTV and SNL Kagan data**

105. To analyze the effect of the recent integration/disintegration events on content prices, I use two sources of data. One is the per-subscriber affiliate fees paid by DIRECTV for each of the networks it carries. These data reflect actual negotiated prices. Although the data are from only one MVPD, Plaintiff's theory implies that this MVPD, like all others, should pay more for vertically integrated content, so affiliate fees paid by DIRECTV provide an appropriate test of Plaintiff's theory. As an additional check on these results, I also analyze affiliate fee data from SNL Kagan. These data represent Kagan's estimate of average affiliate fees, by network, across all MVPDs. These data are widely used in the industry, including by the FCC in a study of a similar question,[108] and in a recent study of the impact of the Comcast/NBCU merger on affiliate fees.[109] These data reflect industry averages and not the prices of any one MVPD.

106. To see whether Plaintiff's theory with respect to the Comcast-NBCU merger makes sense, I first plot the changes in price for the top 50 networks (by national revenue) between 2010 (the year before the merger) and 2017 (the most recent year with data available) and compare how NBCU prices changed with how other networks' prices changed. I do this

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108 Comcast/NBCU Order, Technical Appendix. During its examination of the Comcast/NBCU merger, the Federal Communications Commission presented an econometric study using SNL Kagan data that it claimed showed that the vertical integration of Fox and DIRECTV had resulted in increased affiliate fees for Fox. I understand that claim was disputed, and I do not find such an effect. (Comcast/NBCU Order, Technical Appendix, ¶¶ 51-52.)

109 George S. Ford (2017), "A Retrospective Analysis of Vertical Mergers in Multichannel Video Programming Distribution Markets: The Comcast-NBCU Merger," Phoenix Center Policy Bulletin No. 43, *available at* http://www.phoenix-center.org/PolicyBulletin/PCPB43Final.pdf.

separately using the DIRECTV data and the SNL Kagan data.[110] See Figure 10 and Figure 11. The figures indicate (as I verify statistically below) that the evidence does not support the Plaintiff's theory that NBCU prices after its merger with Comcast rose faster than other comparable networks' prices. That may be because the conditions imposed on that merger were effective, or because the Plaintiff's theory of harm, which is similar to the theory of harm raised in that transaction, is incorrect, or some combination of the two, but since the same type of conditions are present here to address the same type of pricing concerns, it does not matter which is the case.

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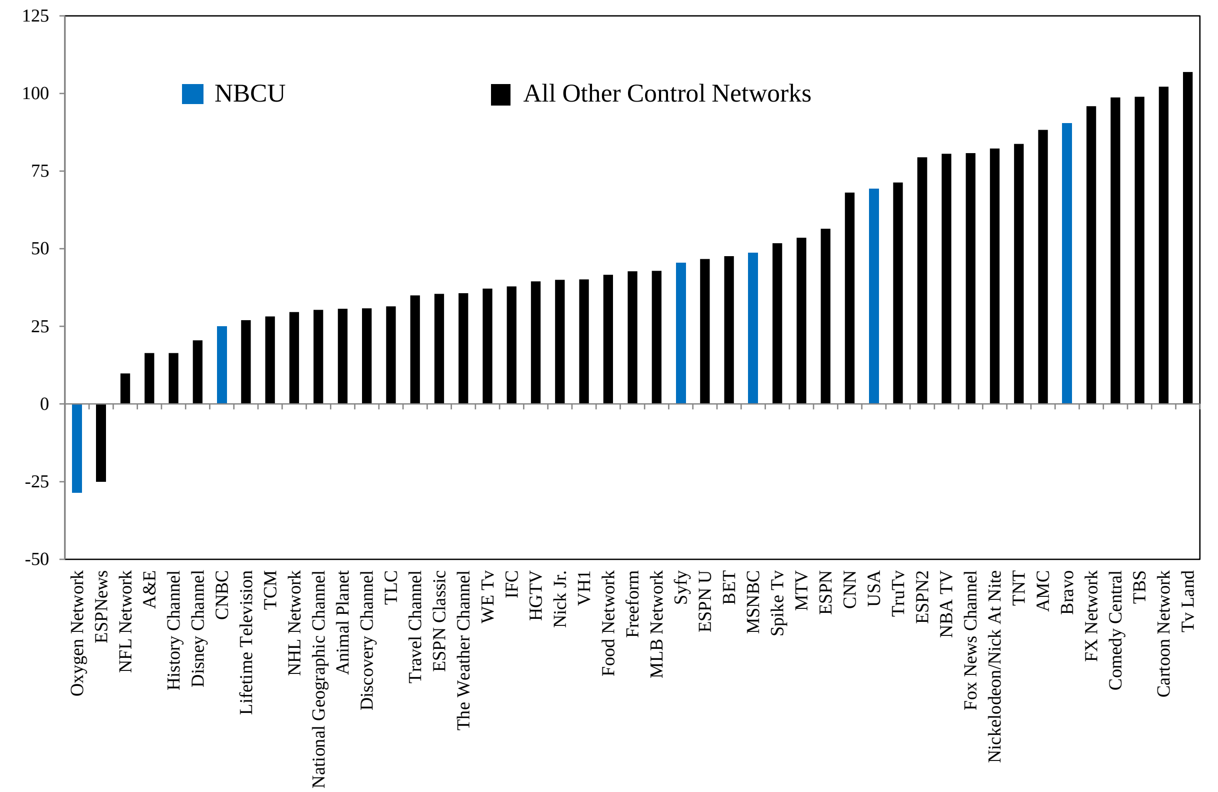
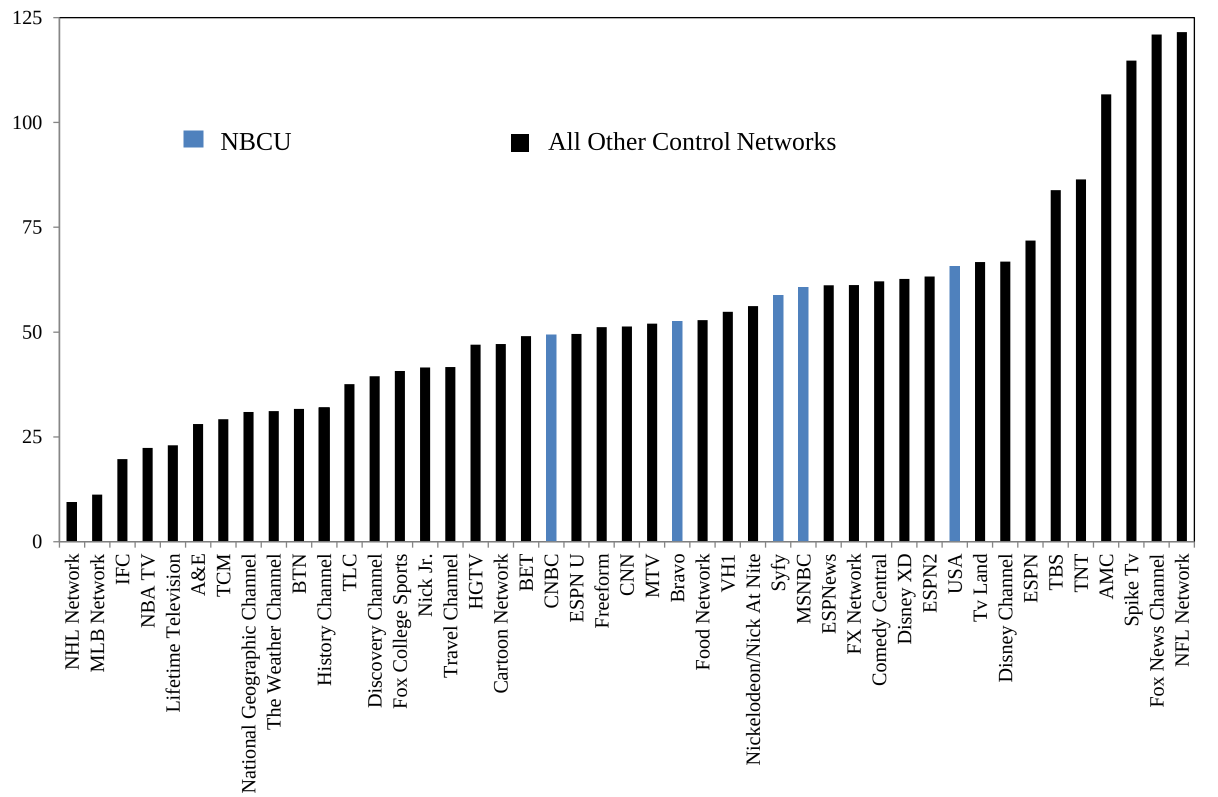
110 I note that if Plaintiff's theory of harm were correct, that Fox and Time Warner affiliate fees should have fallen faster than the industry between 2010 (when some contracts were still in effect that were negotiated when those entities were vertically integrated) and 2017, so including those networks as benchmarks for NBCU prices is conservative.

Figure 10: Percentage Change in Affiliate Fee Between 2010 and 2017 for DIRECTV



Notes: Sample based on the largest 50 DIRECTV networks in terms of the affiliate fee revenue in 2010 (see backup materials for excluded networks) in SNL Kagan.
Source: DIRECTV: Rates 2010-2017. SNL Kagan "TV Network Summary: Financial and Ratings", pulled Jan 11, 2018.

Figure 11: Percentage Change in Affiliate Fee Between 2010 and 2017 per SNL Kagan



Notes: Sample based on the largest 50 SNL Kagan networks in terms of the affiliate fee revenue in 2010 (see backup materials for excluded networks) in SNL Kagan.
Source: SNL Kagan "TV Network Summary: Financial and Ratings", pulled Jan 11, 2018.

107. As another way of looking at prices over time, I plot the weighted average prices for NBCU networks against the weighted average prices of other networks between 2010 and 2017. I index both to a value of 100 as of 2010 for ease of comparison (i.e., I take the price levels as of 2010 as the starting place for both NBCU networks and other networks, and then compare how they grow relative to one another). Again, the figure suggests that NBCU networks' prices overall did not grow faster than the rest of the industry after its merger with Comcast.

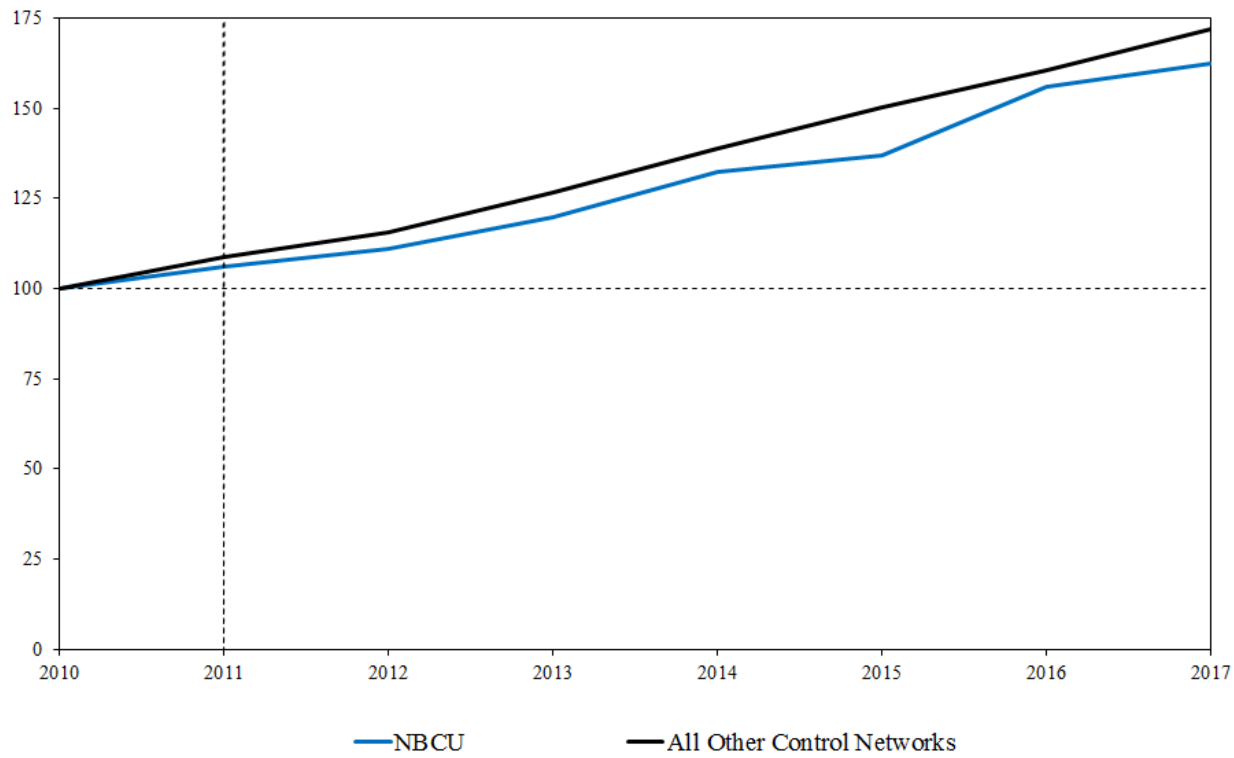
Figure 12: DIRECTV Price Index for NBCU and All Other Control Networks

[redacted]

NBCU
All Other Control Networks

Sample based on the largest 50 DIRECTV networks in terms of the affiliate fee revenue in 2010 (see backup materials for excluded networks) in SNL Kagan. NBCU/control network series are weighted averages of NBCU networks'/control networks' affiliate fee in each year, weighted by the affiliate fee revenue in 2010 (across all MVPDs) for each network in SNL Kagan.
Source: DIRECTV: Rates 2010-2017. SNL Kagan "TV Network Summary: Financial and Ratings", pulled Jan 11, 2018.

Figure 13: SNL Kagan Price Index for NBCU and All Other Control Networks



Sample based on the largest 50 SNL Kagan networks in terms of the affiliate fee revenue in 2010 (see backup materials for excluded networks) in SNL Kagan. NBCU/control network series are weighted averages of NBCU/control networks' affiliate fee in of each year, weighted by the affiliate fee revenue in 2010 (across all MVPDs) for each network in SNL Kagan.
Source: SNL Kagan "TV Network Summary: Financial and Ratings", pulled Jan 11, 2018.

108. To confirm these findings statistically, I implement an econometric regression analysis to evaluate whether affiliate fees are higher for networks when they are integrated with distributors. Regression analysis is an econometric technique that allows an economist to study the effects of some particular variable, such as vertical integration, while controlling for other factors. In this case, the question is whether vertical integration permits an owner of content to charge higher prices than it would otherwise be able to charge. To answer that question, the regression analysis systematically compares the prices charged by the networks undergoing an integration (or dis-integration) event to other networks with no such event.

109. To analyze the effect of the integration events, I analyze affiliate fees between 2008 and 2017 paid by DIRECTV for NBCU, Fox, Time Warner and other networks, controlling for

vertical integration and other factors. In this way, I measure the effect of vertical integration (or dis-integration) relative to a "control group" of networks that underwent no such change. I use this time-period because it captures DIRECTV prices pre- and post-event in each case. In particular, although Comcast merged with NBCU in 2011, DIRECTV continued to operate under an existing contract with NBCU until [redacted] with a new contract and new rates going into effect at the beginning of [redacted] Similarly, although Fox and Time Warner dis-integrated in 2008 and 2009, respectively, the rates DIRECTV paid for those networks in 2008 were based on contracts made at the time that Fox and Time Warner were vertically integrated with MVPDs.[111] By 2017, the effective rates were negotiated after Fox and Time Warner were no longer vertically integrated with distributors.

110. I also perform the same analysis using the SNL Kagan data. There, the data reflect industry averages, but the basic approach is the same.

111. The full details of my regression methodology, along with a range of sensitivity analyses, are presented in Appendix C. Here I simply note that, just as in the figures above, I base my analysis on the top 50 basic cable networks. These networks account for more than 70% of affiliate fees in the industry.[112] The regression controls for programming expenditures for each network (as estimated by SNL Kagan) and ratings[113] so that the effect of programming expenditures and ratings on prices for the content are not confounded with vertical integration effects. To deal with potential heteroscedasticity (an econometric issue that I explain in more detail in Appendix C) in the regressions I present weighted regression results here so that the analysis puts more weight on prices for larger networks than for smaller networks.[114]

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111 DIRECTV contracts with Fox and Time Warner.

112 *See* Appendix C, especially fn. 195.

113 SNL Kagan, "TV Network Summary," pulled January 11, 2018.

114 The weighting I use does not alter my conclusions from those I would reach if I did not weight. Unweighted results are presented in Appendix C.

112. Overall, then, I ask whether the coefficient on the indicator for vertical integration is positive and statistically significant, i.e., whether there is statistical support for the claim that vertical integration is associated with higher prices (after accounting for other factors that impact prices). This is a direct test of Plaintiff's theory of harm.

113. As shown below, looking at all three events, whether I use DIRECTV data or SNL Kagan data, the evidence provides no statistical support for the Plaintiff's theory that vertical integration leads to higher statistically significant prices. Indeed, the estimates are both negative, implying lower, not higher prices (and in the regression involving DIRECTV data the result is negative and statistically significantly different from zero[115]). The evidence thus provides no statistical support for Plaintiff's theory that vertical integration leads to higher prices.

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115 I use the 5% level of significance here and elsewhere when I discuss statistical significance.

Table 8: Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, DIRECTV/Fox, and TWC/TWI (Based on Top 50 Networks)

	DIRECTV 2008-17	SNL Kagan 2008-17
Est. Impact (approx. pct. effect)	-0.131*	-0.035
Standard Error	(0.051)	(0.028)

Notes:
Standard errors in parentheses, clustered by owner.
* p<0.05, ** p<0.01
Top 50 networks are based on the largest 50 networks in DIRECTV/SNL Kagan data in terms of the average of the affiliate fee revenue in 2008 and 2017 in SNL Kagan data (see backup materials for networks excluded from top 50).
Dependent variable is the natural logarithm of network's affiliate fee per sub per month; Independent variables include a variable measuring the impact of vertical integration across the three (Comcast/NBCU, DIRECTV/Fox, and TWC/TWI) events, network and year fixed effects, natural logarithm of the 3-year moving average of programming expenses, Regressions with ratings include 3-year moving average of prime time ratings; Regressions use as weights the average of 2008 and 2017 network's total affiliate revenues (across all MVPDs) obtained from SNL Kagan data.

Sources: DIRECTV: Rates 2008-2017. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

114. I also test whether NBCU rates in particular are higher than other networks, including Fox and Turner, following the Comcast-NBCU merger. As above, I analyze affiliate fees paid for NBCU and other networks between 2010 and 2017, controlling for program expenditures and ratings. The results are shown below. Indeed, the estimates, though not statistically significant, are both negative, implying lower, not higher prices. Again, the evidence provides no statistical support for Plaintiff’s theory that NBCU prices were higher as a result of the merger with Comcast.

Table 9: Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU (Based on Top 50 Networks)

	DIRECTV 2010-17	SNL Kagan 2010-17
Est. Impact (approx. pct. effect)	-0.047	-0.028
Standard Error	(0.095)	(0.024)

Notes:
Standard errors in parentheses, clustered by owner.
* p<0.05, ** p<0.01
Top 50 networks are based on the largest 50 networks in DIRECTV/Kagan data in terms of the affiliate fee revenue in 2010 in SNL Kagan data (see backup materials for networks excluded from top
Dependent variable is the natural logarithm of network's affiliate fee per sub per month. Independent variables include a variable measuring the impact of vertical integration for the Comcast/NBCU event, network and year fixed effects, natural logarithm of the 3-year moving average of programming expenses. Regressions with ratings include 3-year moving average of prime time ratings; regressions use as weights the network's total affiliate revenues in 2010 (across all MVPDs) obtained from SNL Kagan data.

Sources: DIRECTV: Rates 2008-2017. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

115. Yet another way that I can test Plaintiff's theory of harm is to analyze current prices for vertically integrated networks (NBCU networks) and compare them with current prices for non-vertically integrated networks, attempting to control for differences in quality such as ratings. This is referred to as a cross-sectional analysis.[116] Again, I perform these analyses on both the DIRECTV and SNL Kagan data. Indeed, the estimates are again both negative, implying lower, not higher prices (and in the regression involving SNL Kagan data the result is negative and statistically significant). And again, the evidence provides no statistical support for Plaintiff's theory that NBCU prices were higher as a result of the merger with Comcast.

[116] *See* Appendix C.

Table 10: Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU - Cross Sectional Regression (Based on Top 50 Networks)

	DIRECTV 2017	SNL Kagan 2017
Est. Impact (approx. pct. effect)	-0.044	-0.146*
Standard Error	(0.093)	(0.066)

Notes:
Standard errors in parentheses, clustered by owner.
* p<0.05, ** p<0.01
Top 50 networks are based on the largest 50 networks in DIRECTV/Kagan data in terms of the affiliate fee revenue in 2017 in SNL Kagan data.
Dependent variable is the natural logarithm of network's affiliate fee per sub per month. Independent variables include a dummy variable for NBCU networks, natural logarithm of the 3-year moving average of programming expenses and 3-year moving averages of rating variables (prime time rating, 24 hours rating, natural logs of prime time and 24 hours delivery), dummy variables for network's genre as reflected in SNL Kagan, and network's age in months. Regressions use as weights 2017 network's total affiliate revenues (across all MVPDs) obtained from SNL Kagan data.

Sources: DIRECTV: Rates 2008-2017. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

116. I note that I am not alone in concluding based on econometric analysis that vertical integration does not have a statistically significant impact on increasing network affiliate fees. In December 2017, George Ford of the Phoenix Center published "A Retrospective Analysis of Vertical mergers in Multichannel Video Programming Distribution Markets: The Comcast-NBCU Merger," in which he used SNL Kagan data to analyze price effects of the Comcast/NBCU merger.[117] Results of his study are consistent with my own. Specifically, that study concludes that, "[t]he evidence suggests either that there was no net positive effect on

117 George S. Ford (2017), "A Retrospective Analysis of Vertical Mergers in Multichannel Video Programming Distribution Markets: The Comcast-NBCU Merger," Phoenix Center Policy Bulletin No. 43, *available at* http://www.phoenix-center.org/PolicyBulletin/PCPB43Final.pdf.

incentives to raise prices above competitive levels following the vertical merger, or else that the behavioral remedies placed on the Comcast-NBCU merger have been effective."[118]

2. Third party production data

117. Data from other MVPDs and programmers is being produced on a rolling basis. As of today, I have been able to apply the same methodology described above that I use for DIRECTV's data to data produced by Charter, another MVPD. The Charter data are available for a shorter period of time than are data for DIRECTV, where I have data for 2008 to 2017. Here, I use Charter's data for [redacted][119] I provide the same set of sensitivities in Appendix C and my backup materials as I do for the DIRECTV data.

118. In Appendix C, I present the same set of tables for Charter as I do for DIRECTV. The results are consistent with those for DIRECTV and provide no statistical support for Plaintiff's claim that vertical integration leads to higher content prices. Since I just recently received this data, I reserve the right to update my analysis using this data.[120]

D. CHANGES IN THE VIDEO INDUSTRY SINCE THE COMCAST-NBCU INTEGRATION FURTHER LESSEN ANY CAUSE FOR CONCERN

119. A standard question to ask about studies of previous integration events is how changes in the marketplace since the previous event affect the likelihood of harm and thus the applicability of the results to this transaction. In this case, the answer is clear: as detailed throughout this report, the video industry has become much more competitive over the last several years,

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118 George S. Ford (2017), "A Retrospective Analysis of Vertical Mergers in Multichannel Video Programming Distribution Markets: The Comcast-NBCU Merger," Phoenix Center Policy Bulletin No. 43, *available at* http://www.phoenix-center.org/PolicyBulletin/PCPB43Final.pdf, p. 1.

119 I have confirmed that Charter's prices for Time Warner and NBCU in [redacted] were negotiated [redacted] and that the Fox prices in [redacted] I assume that the Fox [redacted] rates were signed [redacted]. *See* my backup materials.

120 Additional data from third parties continues to be produced. I reserve the right to update my analysis using these data as I obtain, review and combine them.

especially since the Comcast-NBCU transaction. As I explain below, my study of previous integration and dis-integration events is therefore a conservative one in the sense that, under Plaintiff's theory, competitive harm was more likely to result from the previous vertical integration events than from the AT&T/Time Warner transaction. Thus, the absence of evidence of higher content prices or other harm to competition in distribution markets from the prior transactions provides strong evidence that the proposed merger will not harm competition in video distribution markets.

120. As explained in the Complaint, under Plaintiff's theory of harm, the size of the predicted content price increase depends on: "(1) how many customers competing distributors would lose or fail to add without Turner programming (their subscriber loss rate); (2) the percentage of those departing customers that would likely become subscribers of the merged company (the diversion rate): and (3) how much AT&T/DirecTV profits from its customers (its margins)."[121] In the remainder of this section, I explain why along each of these dimensions, the Comcast/NBCU transaction would have been expected to generate greater increases in prices compared to AT&T/Time Warner.

1. **Subscriber loss rates**

121. As to the "subscriber loss rate," the loss of NBCU content would have been expected to drive greater subscriber losses in 2010 compared to the loss of Time Warner content today. NBCU owns (and owned) a major national broadcast network; Time Warner does not. Moreover, overall viewership of NBCU networks in 2010 was considerably higher than that of Time Warner networks today. Per Nielsen, NBCU's share of viewership for basic cable,

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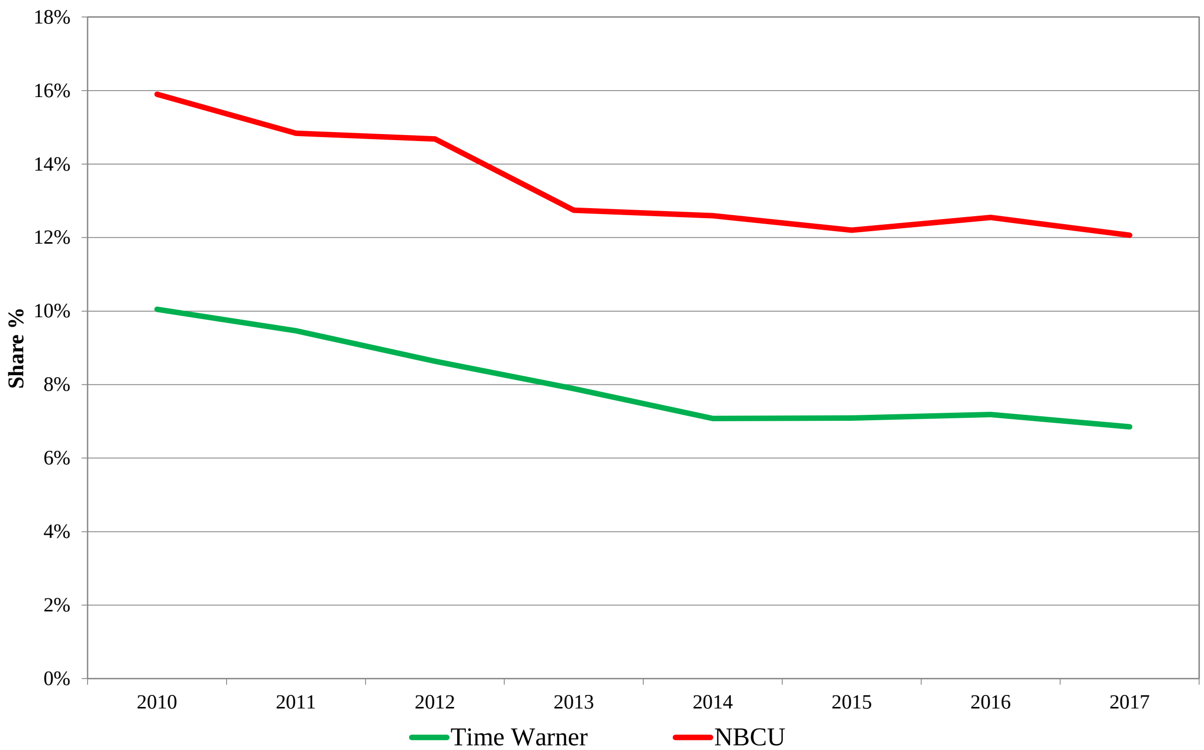
[121] There is actually an error in this formulation. What matters to AT&T is not how much it profits from its customers overall, as the formulation implies. What matters is how much AT&T expects to profit from those subscribers it captures from other distributors. As described above, given that these are switching subscribers (showing a lack of stickiness), who have not been saved by save desk efforts made by their distributors, and for whom there will likely be competition from all MVPDs in the marketplace (each of which recognizes the opportunity to poach customers from the affected distributor under Plaintiff's theory), the margins on these switching customers will likely be lower than AT&T's average profit margin.

premium cable, broadcast networks and OVD was 15.9% in 2010, and Time Warner's share was only 6.9% in 2017. (See Figure 14 and Table 11.)

Figure 14: Time Warner (Turner + HBO) and NBCU Nielsen Shares of Broadcast, Basic Cable, Premium and OVD Viewership



Notes: Shares adjusted for OVD viewership reported. The OVD adjustment is based on DIRECTV surveys of OVD viewership. The OVD adjustment is calculated based on year-specific estimates. 2010, 2011, and 2015 OVD adjustments were imputed. 2017 Nielsen figures include Q1 to Q3. Prime feeds of premium networks included.
Sources: Nielsen Local Television Ratings data; 726-035 DIRECTV OTT Wave 3 report 07.12.13; ATT-DOJ2R-14653253, DIRECTV, "Impact of OTT on DIRECTV," September 15, 2014; ATT-LIT-01655099, "Impact of OTT on AT&T/DIRECTV," December 14, 2016; Fall 2017 OTT Tracker Report.

122. Furthermore, NBCU accounted for a larger share of total programming expenses in 2010 compared to Time Warner in 2017. In 2010, NBCU accounted for 14.6% of total programming expenses across all basic cable, broadcast, and premium channels, while Time Warner (including HBO) accounted for only 8.8% of expenses in 2017 (including expenditures from Netflix, Amazon and Hulu). (See Table 11.)

Table 11: NBCU and Time Warner Programming Expense and Viewership

	Without OVD Adjustment		With OVD Adjustment	
	NBCU - 2010	Time Warner - 2017	NBCU - 2010	Time Warner - 2017
Programming Expense[1]				
Share of US Basic Cable and Broadcast	16.0%	7.5%	15.9%	6.1%
Share of US Basic Cable, Broadcast and Premium	14.7%	10.7%	14.6%	8.8%
Viewership - Based on SNL Kagan Data[2]				
Share of US Basic Cable and Broadcast - 24 Hour	13.6%	7.7%	13.0%	6.0%
Share of US Basic Cable and Broadcast - Prime Time	16.6%	7.8%	15.9%	6.1%
Viewership - Based on Nielsen Data[3]				
Share of US Basic Cable and Broadcast	16.9%	8.5%	16.2%	6.4%
Share of US Basic Cable, Broadcast and Premium	16.6%	9.1%	15.9%	6.9%

Notes:

[1] The 2017 programming expenses with OVD adjustment include programming expenses of Netflix, Hulu and Amazon Prime in the denominator; the 2010 programming expenses with OVD adjustment include programming expenses of Netflix in the denominator.

[2] The 2017 SNL Viewership calculations use 2016 SNL data since 2017 data is not available yet.

[2] - [3]: The OVD adjustment is based on DIRECTV surveys of OVD viewership. The OVD adjustment is calculated based on year-specific estimates. 2010, 2011, and 2015 OVD adjustments were imputed. 2017 Nielsen figures include Q1 to Q3. Prime feeds of premium networks included.

Sources:

[1] SNL Kagan, TV Network Summary: Programming Expenses, data pulled January 11, 2018; SNL Kagan, "Profile: Amazon Prime Video (US)", January 30, 2017; SNL Kagan, "Profile: Hulu," February 22, 2017; SNL Kagan, Profile: "Netflix (U.S.)," March 6, 2017; Netflix Form 10-K for the year ending 2011, p. 51.

[2] - [3]: SNL Kagan, TV Network Summary: Average 24-Hour TVHH Delivery, data pulled January 11, 2018; SNL Kagan, TV Network Summary; Average Prime Time TVHH Delivery, data pulled January 11, 2018; Nielsen Local Television Ratings data; 726-035 DIRECTV OTT Wave 3 report 07.12.13; ATT-DOJ2R-14653253, DIRECTV, “Impact of OTT on DIRECTV,” September 15, 2014; ATT-LIT-01655099, “Impact of OTT on AT&T/DIRECTV,” December 14, 2016; Fall 2017 OTT Tracker Report.

123. The growth of OVDs since 2010 is particularly important for an analysis of cable network loss rates as OVD options provide many ways for a consumer to obtain content without leaving his preferred MVPD, as does the increasing amounts of new content from other cable and broadcast networks. If an MVPD were to lose the Turner networks, not only could the MVPD substitute other networks onto its basic tier to compensate for the lost programming, but

subscribers today (unlike in 2010) could choose from a wide range of OVD options to compensate for the lost programming. Adding an OVD or simply watching other content from the much larger selection available today would both involve less subscriber effort and cost than having to switch to another MVPD. Plaintiff has noted that there are substantial switching costs to moving between MVPDs, but these subscribers need not expend these costs if they can replace Turner content from sources other than through traditional MVPDs.[122] Hence, as a result of this development, the likelihood of an MVPD losing subscribers to Comcast in 2010 was likely higher than that likelihood facing AT&T today, even holding content importance constant.

124. These factors all indicate that any competitive concerns that depend on loss rates from rival MVPDs would be lower for AT&T/Time Warner than for Comcast/NBCU.

2. **Diversion rates**

125. I understand that the claimed high diversion rates from increases in NBCU content prices in the Comcast-NBCU proceeding were driven largely by Comcast's high shares in local distribution, particularly in local markets in which DOJ argued Comcast could implement targeted content price increases or content foreclosure using a combination of broadcast networks, RSNs, and targeted cable network strategies. These concerns are much weaker here because AT&T's overall share of distribution is much lower. In particular, there is no local area in which the present transaction brings together a broadcast station, an RSN, and a high market share in distribution. More generally, NBC owned one of the "big four" broadcast networks along with owned and operated broadcast stations, while Time Warner does not,[123] and AT&T owns only four RSNs.

126. In addition, consumers leaving their MVPD today have more options than merely switching to another MVPD. Cord cutting is clearly an ongoing trend. Consumers that leave

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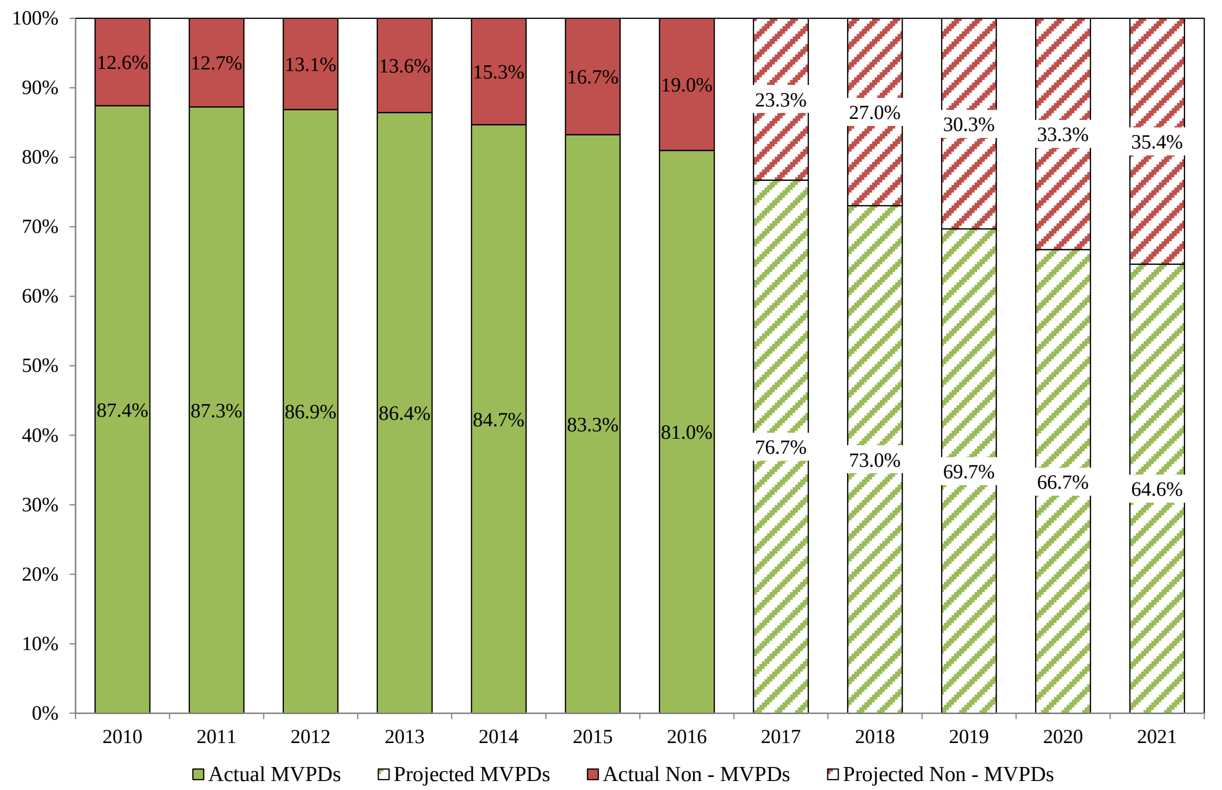
122 Complaint, ¶ 32.

123 The CW Television Network is a 50/50 joint venture of WB Communications and CBS. The CW accounts for less than 2% of television viewing. Nielsen Local Television Ratings Data.

MVPDs today often leave the MVPD "ecosystem" altogether in favor of OVD options. As shown in Figure 15, the share of video households that subscribe to MVPD services has declined in recent years and is projected to decline further given the growth of "cord cutting," which occurs when households drop traditional MVPD services in favor of Internet-based services from OVDs. As of 2016, roughly 20% of television households obtained their television service from non-MVPD providers and SNL Kagan projects that fraction to increase to 30% by next year.[124]

Figure 15: Percentage of U.S. Television Households Obtaining Service from an MVPD



Source: SNL Kagan, Multichannel: U.S. Multichannel Industry Benchmarks, data pulled January 15, 2018.

127. The implication of the growth of cord cutters is that any loss of subscribers from a rival MVPD generates a lower likelihood now (and in later years) that the subscriber will wind up

124 SNL Kagan, Multichannel: U.S. Multichannel Industry Benchmarks, data pulled January 15, 2018. *See* Figure 15.

with another MVPD such as DIRECTV, compared to the situation at the time of the Comcast NBCU transaction.[125]

3. **Profit margins**

128. Finally, as to the third component, profit margins, Comcast likely generates (and generated in 2010) higher margins than AT&T on subscribers captured from rival MVPDs. Comcast's higher margins are, in large part, due to the fact that it can offer broadband service to its customers, which is generally faster (and priced higher) than what AT&T can offer within its landline footprint. And AT&T does not even offer broadband service outside its landline footprint.

129. I do not have data for Comcast on its margins on new customers, but I can compare publicly available data on average margins for the two companies, recognizing that any such comparison can only be suggestive.[126] As shown in Table 12, Comcast's 2010 EBITDA margins were roughly 75% higher than DIRECTV's 2016 EBITDA margins.

Table 12: Comcast-NBCU and AT&T Margins

	Comcast - 2010	AT&T - 2016
EBITDA Margins	40.7%	23.3%

Notes: Includes the cable segment of Comcast, and Entertainment Group segment of AT&T.

Sources: Comcast 2010 10K at 89, AT&T 2016 10K Attachment A at 52.

130. Changes over time make the margin difference between Comcast in 2011 and AT&T today even more striking. In particular, the average expected profit that AT&T derives from a

125 *See, e.g.,* [redacted]

126 A comparison of such margins is not definitive evidence on the relative profitability of new customers going forward.

new customer (known as a lifetime values, or "LTV") has fallen dramatically in recent years and is substantially lower than in 2012, due in part to the increased willingness of subscribers to switch video distributors. AT&T's video LTV has fallen roughly [redacted] in the last five years alone.[127] The share of households served by traditional MVPDs is declining as OVDs grow. As the Complaint notes repeatedly, an important competitive force in video distribution markets today—and in future years when the competitive effects of the merger will play out—is the rapid growth of OVDs. The Complaint refers to OVDs as bringing "increasing competition to traditional video distributors—competition that benefits consumers," refers to their ability to constrain profit margins, describes the competition from OVDs as "disruptive" competition that has led to "cheaper prices," and discusses VMVPDs remaining "the competitive force they are today."[128] The recurring theme is that OVDs are a prime competitive force that constrains MVPDs including AT&T. Again, this constraint is much more important now than it was at the time of the Comcast NBCU merger.

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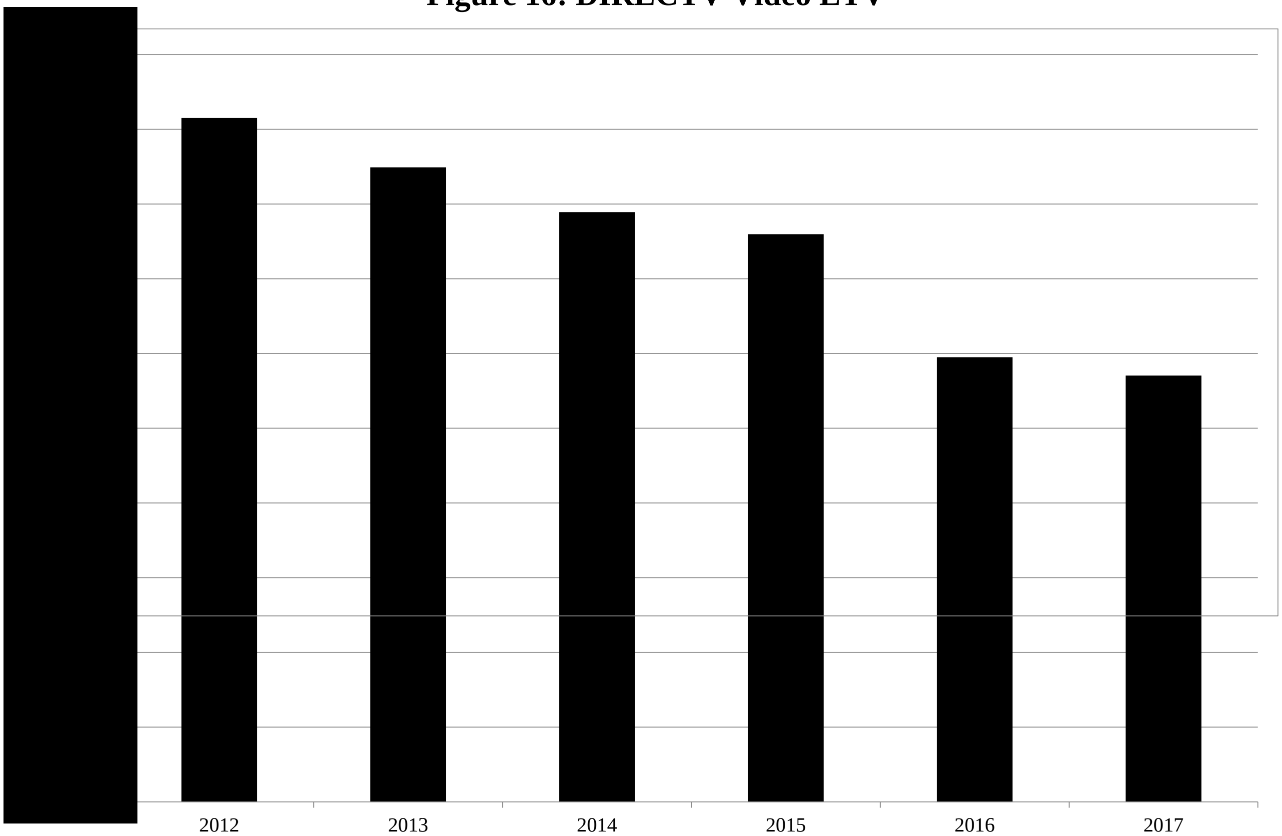
127 DIRECTV has changed the discount rate used in its LTV calculations over time, with lower discount rates used in later years. This series has been standardized for use in this litigation by AT&T using the same discount rate for each year. I also note that to the extent substitution occurs to DIRECTV NOW, the margins on that product are lower than the margins on DIRECTV. DTV NOW_11.21.17_ATT_TW-xlsx.

128 Complaint, ¶¶ 2, 8, 40.

Figure 16: DIRECTV Video LTV



Note: 5.75% discount rate used.
Source: LTV Annual Trend - Normalized for 5.75% CoC.xlsx.

E. PRO-COMPETITIVE BENEFITS

131. Not only has any probability of harm to competition decreased since the Comcast/NBCU transaction, but the benefits to vertical integration have likely increased significantly. The use of "big data," the development of data-driven advertising, and the use of data to help develop content have all grown enormously since 2010. The AT&T/Time Warner transaction raises the potential to emulate and challenge the success of Google and Facebook's digital advertising platforms, which include highly targeted advertisements that are currently very rare in the linear television space. Digital advertising is forecast to grow from $71.6 billion in 2016 to $105.4

billion in 2019.[129] Linear television advertising, however, is projected to be largely flat.[130] Indeed, digital advertising was much smaller than linear television advertising in 2010, but today is larger.[131]

VI. EVIDENCE ON VIDEO DISTRIBUTION IS INCONSISTENT WITH PLAINTIFF'S THEORY OF HARM

132. I have discussed above why the evidence is inconsistent with any claim that the transaction will lead to higher prices for Turner content. But as I noted above, one of the fundamental economic questions the Plaintiff must address is whether it can show harm to competition, not just harm to competitors. Even if the price of Turner content did increase, that would not by itself establish substantial harm to competition in the video distribution markets alleged in the Complaint. To establish a substantial reduction in competition in video distribution, Plaintiff should show that there will be substantially higher prices for goods or services sold in that market, substantially reduced output, or substantially reduced innovation.

133. Higher prices for Turner content do not themselves establish any of those possibilities—that content is only one input into the video distribution services. I am not saying that higher prices for an input cannot result in substantial harm to competition in a downstream market, but that cannot be assumed. It is also possible that even if Turner prices do increase, any resulting increased price in video distribution is so trivial that it does not amount to a substantial lessening of competition and that such a trivial "harm" can easily be offset by efficiencies.

134. Any prediction about potential harm to competition in video distribution should take account of the magnitude of the forecast price increase for Turner content relative to the downstream prices. When an input's price is small relative to the downstream price, it is hard to see how even a large percentage increase in the price of the input would cause substantial harm

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129 *See* Figure 1.

130 *See* Figure 1.

131 *See* Figure 1.

to competition downstream. For example, if the price of a final product is $100 and the price of some input rises by $0.50, even with full pass through, it is hard to conclude that such a small price increase will lead to a substantial lessening of competition in the downstream product market. But I will await the Plaintiff's expert's statement on this point.

135. The Complaint is not clear as to exactly how Plaintiff expects to support the claim of substantial harm to competition in video distribution, even assuming there is a significant increase in the price of Turner content. I reserve the right to address Plaintiff's claims in my rebuttal report after reviewing how Plaintiff's experts attempt to support that claim. However, it is clear that any theory of harm to competition in video distribution that Plaintiff advances here should consider a number of factors that make any harm in the video distribution market unlikely.[132]

136. Competing distributors of video content include traditional MVPDs such as cable companies, including Comcast, Charter, Altice, and Cox; direct broadcast satellite providers DISH and DIRECTV; telephone companies Verizon (FiOS), AT&T (U-Verse), and CenturyLink; and "overbuilders," that built their own cable distribution facilities to compete with cable incumbents. As I have described above, traditional MVPDs' share of the market has declined in recent years and is expected to continue to decline as OVDs continue to grow and capture a larger portion of the market.

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[132] Plaintiff defines two relevant video distribution markets. First, Plaintiff defines a product market of "distribut[ion] of professionally produced, full-length video programming subscription services to residential customers in the United States." This includes MVPDs, VMVPDs, and SVODs. Complaint, ¶ 27. Plaintiff defines a "submarket" of "Multichannel Video Distribution" which includes MVPDs and VMVPDs but excludes SVODs. Complaint, ¶ 28. MVPDs, VMVPDs, and SVODs all aggregate and distribute video content, but Plaintiff asserts that MVPDs and VMVPDs "charge different prices and serve different customer needs" than SVODs. *Id.* I reserve the right to address these proposed market definitions once Plaintiff's expert explains the basis for these allegations.

137. As noted above, the Complaint refers to OVDs as bringing greater competition to video distribution markets, delivering lower prices to consumers.[133] As I explained in the prior section, this increasing competition will not be altered by the merger because of AT&T's contractual commitment and because many OVDs do not depend upon Turner. This continuing and increasing competition will constrain or eliminate any possibility of substantial harm to competition in video distribution.

138. In many cases firms in video distribution are in video distribution to aid their complementary businesses. That is, these firms are not concerned only about the stand-alone profitability of these products, but rather they use them to support a larger business strategy.[134] A small change in the price of Turner content is unlikely to have a significant effect on their incentive to compete in video distribution. Google's YouTube TV, for example, is estimated by analysts to be a loss leader.[135] That is, Google is not making money directly off of YouTube TV, but it is an important part of Google's overall strategic plan, particularly with regard to its continued growth in digital advertising. Similarly, Amazon offers video to complement its other businesses.[136]

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133 Complaint, ¶¶ 2, 8, 40.

134 As Amazon CEO Jeff Bezos has explained, "[w]e get to monetize [our subscription video] in a very unusual way. … When we win a Golden Globe, it helps us sell more shoes." Nathan McAlone, "Amazon CEO Jeff Bezos said something about Prime Video that should scare Netflix," *Business Insider*, June 2, 2016, *available at* http://www.businessinsider.com/amazon-ceo-jeff-bezos-said-something-about-prime-video-that-should-scare-netflix-2016-6.

135 Andy Hargreaves, Evan Wingren, and Tyler Parker, "GOOGL: YouTube TV: Significant Strategic Benefits Offset Likely Lack of Near-Term Profits," KeyBanc Capital Markets, October 2, 2017. *See also,* Deposition of Robert Kyncl, Chief Business Officer of YouTube, May 23, 2017, pp. 38-39 indicating that YouTube TV is currently operating at a $2 per sub per month loss "just on the content."

136 Nathan McAlone, "Amazon CEO Jeff Bezos said something about Prime Video that should scare Netflix," *Business Insider*, June 2, 2016, *available at* http://www.businessinsider.com/amazon-ceo-jeff-bezos-said-something-about-prime-video-that-should-scare-netflix-2016-6. *See also* Brian T. Olsavsky (Amazon Senior

139. Even if there were a significant increase in the price of Turner content, whether video distributors would pass through that increase to their customers cannot be assumed, particularly if Plaintiff were correct that passing through such a price increase would result in substantial losses of subscribers. If there is no or very limited pass-through, it is hard to see how there would be substantial harm in video distribution competition. Each of these competitors has different business plans, different competitive strengths, and different opportunities to adapt to any loss or increase in price of Turner content. For example, cable incumbents—which are available to 99% of all U.S. homes[137]—generally have the strongest broadband service option and the ability to make additional content available over broadband, as Comcast has done by making Netflix and Sling available on its X1 set-top boxes. DISH has positioned itself as a low-cost provider of content and it is heavily promoting its Sling VMVPD service. As explained above, MVPDs use "save desks" to retain valued customers—with such save desk offers providing significant price discounts to prevent subscribers from leaving. To the extent the price increases in content are not significant or that such prices are not passed along, then there would be no reason to assume that prices in the video distribution market would be significantly increased.

140. The Plaintiff's claim of higher consumer prices also completely ignores other aspects of the transaction that will serve to reduce AT&T costs and provide it with incentives to lower prices for video distribution, as well as increase the benefits of distributing Turner content.

Vice President and CFO), Amazon Q3 2017 Earnings Call, October 26, 2017, *available at* https://seekingalpha.com/article/4117120-amazon-com-amzn-q3-2017-results-earnings-call-transcript?part=single ("We're going to continue to invest in video and increase that investment in 2018. And why are we going to do that? It's because the video business is having great results with our most important customer base, which is our Prime customers. It continues to drive better conversion of free trials, higher membership renewal rates for existing subscribers and higher overall engagement. We're seeing the engagement go up year-after-year in video and also music and a lot of the other Prime benefits. We also know Prime members who watch video also spend more on Amazon.").

137 FCC, *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, Eighteenth Report, January 17, 2017, ¶ 20 ("We assume that cable MVPDs are available to over 99 percent of housing units.").

VII. BY BRINGING TOGETHER COMPLEMENTARY PRODUCTS AND ASSETS, THE PROPOSED MERGER WILL LIKELY GENERATE SIGNIFICANT PRO-COMPETITIVE BENEFITS

141. In this section, I discuss the benefits that would result from bringing together the complementary products and assets at issue in this transaction: AT&T's distribution, consumer relationships, and data, with Time Warner's content and advertising inventory. I make four points. First, increasing the value of Time Warner content and advertising inventory through use of AT&T consumer relationships and data is simply following in the footsteps of other vertically integrated firms in the industry, creates more value from distribution of Time Warner content, and thus places downward pressure on prices in order to expand, not contract, the distribution of Time Warner content. Second, cost savings produce downward pressure on prices. Third, the elimination of double marginalization produces downward pressure on prices downstream. And finally, innovation can be difficult to quantify but can be important to consumer welfare.

142. As explained earlier, from an economic perspective, bringing *complementary* assets under common control through vertical integration is generally beneficial, in part because it provides an incentive for investment by enabling the combined firm to internalize the benefits from investments at multiple levels of the vertical chain.[138] Notably, it is often difficult or impossible to replicate these incentives by arm's-length contracts between separate firms. One reason for this difficulty, which was famously explained by Ronald Coase and Oliver Williamson, is transaction costs.[139] It can be less costly to conduct transactions within a firm than to try to conduct transactions by contract between separate firms. The internalization benefits described above require that each investment and pricing decision made by either firm

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138 *See, e.g.*, James C. Cooper, Luke M. Froeb, Dan O'Brien, and Michael G. Vita (2005), "A Critique of Professor Church's Report on the Impact of Vertical and Conglomerate Mergers on Competition," *Journal of Competition Law and Economics* 1(4): 785-795, pp.785, 794 ("[C]ertain transactions, particularly vertical mergers . . . generally have efficiencies that are intrinsic to the transaction and do not result from production cost savings").

139 *See, e.g.*, Dennis Carlton and Jeffrey Perloff (2005), *Modern Industrial Organization*, 4th ed., p. 5.

incorporate the full effect on the total profits combining both firms. But as long as there are separate firms involved, each firm can often capture only a fraction of the profits, limiting its incentive to cut prices or make beneficial investments. In many cases, only by acting as a single entity that maximizes combined profits can the benefits of internalization fully be achieved. For example, in a situation known as "double moral hazard," in which each firm must make costly, hard-to-monitor investments to produce a product, vertical integration is often the only way to create the proper incentives since doing so by contract is too difficult. As the FCC explained when approving the merger of Comcast and NBCU in 2011:

> [T]he transaction will likely reduce some of the barriers and friction that exist when unaffiliated content providers and distributors negotiate to reach agreements. Particularly in a time of uncertainty and change, the difficulty of accurately predicting (and therefore allocating) the risks and rewards in agreements that involve departures from standard business models can inhibit the bargaining process and slow innovation.[140]

143. In addition to the incentive effects due to internalization and reduced transaction costs, vertical integration facilitates optimal use of complementary assets in innovative ways, which can be extremely difficult to accomplish by contract. In particular, vertical mergers can create efficiencies and accelerate innovation by reducing the transaction costs that arise when a supplier (such as a video content provider) and a distributor (such as an MVPD or OVD) try to negotiate an arm's-length contract about the use of complementary assets (such as intellectual property rights). For example, it has proven extremely difficult for distributors and content providers to reach agreements allowing for the use of distributors' data on viewers' habits to improve content providers' content offerings, with those agreements that have been reached generally putting tight restrictions on the usage.[141] This illustrates what the economic literature has well described as some of the circumstances under which transaction costs are likely to be high. In rapidly changing markets, in new markets, and in markets where actions of each firm are costly to

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140 Comcast-NBCU Order, ¶ 231.

141 *See, e.g.*, Deposition of Michael Welch, DIRECTV Vice President, Strategy, Product and Business Development, AT&T AdWorks, April 28, 2017, pp. 35-36, 189-196. Deposition of David Levy, President of Turner, May 15, 2017, pp. 89-104.

monitor, transaction costs of using contracts can be so high that vertical integration is the best way to accomplish the coordination needed to operate and innovate.

A. INCREASING THE VALUE OF TIME WARNER CONTENT AND ADVERTISING THROUGH INTEGRATION WITH AT&T DATA AND CONSUMER RELATIONSHIPS CAN CREATE SUBSTANTIAL BENEFITS

144. I understand the mechanics and valuation of the integration of Time Warner content and advertising with AT&T data and customer relationships are described in detail in the reports of Rajiv Gokhale and Michael Kearns.[142] I note here that the ability to use data obtained from customers to help create and market programming, and to improve the advertising on such programming through better targeting, is an important element of competition in the video industry today, and is likely to become even more important going forward. Vertical integration allows the information that the distributor has about what people are watching to be used by the programmer to create programming that consumers want to watch, to better market and distribute existing content, and to better advise advertisers who seek to reach certain types of viewers. Comcast/NBCU, Netflix, Amazon, Hulu, Apple, and Google are all examples of firms that combine knowledge of what consumers are watching—gained from their role as either an MVPD or OVD—with the creation and distribution of content.

145. Vertical integration has permitted these firms (and OVDs more generally) to use customer-specific information to improve both their content and their advertising. For example, Netflix combines customer information it obtains from its direct-to-consumer online service to help design programming that appeals specifically to different types of viewers, and to market content to consumers more effectively. Netflix executives have stated publicly that the use of consumer data to create and market programming gives Netflix an advantage over traditional linear television content creators,[143] and that this strategy drives subscriber growth.[144]

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142 Expert Report of Rajiv Gokhale, February 2, 2018. Expert Report of Michael Kearns, February 2, 2018.

143 Netflix, Inc. at Bank of America Merrill Lynch Media, Communications & Entertainment Conference – Final, FD Wire, September 13, 2012 (Netflix Chief Content Officer Ted

146. Like Netflix, Amazon uses data generated through its direct distribution to subscribers to develop exclusive original content. The then-head of Amazon Studios emphasized in August 2017 that "viewership is fundamental" as a measure of success, and that the quality of the produced content is essential to grow the company's Prime Video service.[145] As discussed earlier, Amazon uses customer-focused data to "inform the decision as to what content to choose."[146] As described earlier, Amazon is moving away from more traditional models of

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Sarandos: "We're doing something dramatically different than [a Fox or Warner] are. So we are – these are very data-centric decisions, which shows we pursue and what economics we pursue for those shows. So we establish early on whether or not there is an audience for the show, based on comparable content and the viewing behavior that we know about our subscribers, that when they watch this they also watch this. …So when I crunch all the data – of the people who love David Fincher movies; who love political thrillers; who love Kevin Spacey's – everything he does; who were big fans of the original House of Cards; on and on and on – you get a very addressable audience. And better than that, I know exactly who they are…."); Netflix Chief Content Officer Ted Sarandos, Netflix Inc. at MoffettNathanson Media & Communications Summit – Final, FD Wire, May 13, 2015 (Netflix Chief Content Officer Ted Sarandos: data analytics are "a very important part" of assessing what content to acquire. "[T]he data analytics that we have going into May screenings to say what shows we are going to target, it's mind-boggling. And how good it is getting every year in terms of when you can look in shows, you can look at the writers, track records. … It is not foolproof, it is not bulletproof, but it definitely gives us a much better course than most.").

144 Joerg Niessing, "How 'demand-analytics' made Netflix's House of Cards possible," Financial Review, October 24, 2014, *available at* http://www.afr.com/it-pro/how-demandanalytics-made-netflixs-house-of-cards-possible-20141024-11b6aa. Netflix CEO Reed Hastings, Q2 2015 Netflix Inc. Earnings Call – Final, FD Wire, July 15, 2015 (Netflix CEO Reed Hastings: "With each programming investment, we not only increase the viewing and increase the satisfaction, but we learn – is that the kind of programming we should do more of. So you really want to think of us as just a learning machine in terms of the programming, the variety of what we've done. We get so much data about how people watch, how fast they watch, that it really propels our programming.").

145 Henry Chu, "Amazon Expects More Straight-to-Series Orders, Output Deals," *Variety*, August 25, 2017, *available at* http://variety.com/2017/biz/news/amazon-roy-price-straight-to-series-orders-output-deals-1202538880/.

146 Andrew Wallenstein, "What the TV Biz Could Learn from Amazon Studios: Soliciting viewer feedback during the development process makes a lot of sense," *Variety*, May 1,

offering pilots and soliciting customer feedback and increasing "its straight-to-series orders as the company tries to remain nimble and competitive."[147]

147. Vertically integrated firms also have been using data obtained from consumers to improve advertising, making it more effective (and less costly) for advertisers and more relevant to consumers. Most notably, Google and Facebook are both content providers (of search and video services and social media services respectively) that are integrated into the delivery of content to consumers via the Internet. As described earlier, these companies also have recently begun combining their newly launched video distribution services with their access to consumer data to provide more individually targeted—and thus much more valuable—advertising than traditional media companies have been able to offer.[148] That higher-value advertising strengthens the already dominant position of Google and Facebook as providers of addressable (customer-specific) digital advertising.

148. The marketplace for targeted digital advertising is steadily increasing, supplanting traditional television advertising. For example, as I discussed earlier, digital advertising was less than half the size of linear television advertising in 2010 but has been growing steadily and exceeded television advertising in 2016, with digital advertising projected to be roughly 75% greater than television advertising spending in 2021.

149. Although digital advertising is growing rapidly, it is a highly concentrated business. As shown in Table 13, Facebook and Google represent more than two-thirds of all digital advertising dollars (a market projected to exceed $100 billion per year by 2019).

2013, *available at* http://variety.com/2013/biz/news/amazon-viewer-data-for-development-process-1200429921/.

147 Henry Chu, "Amazon Expects More Straight-to-Series Orders, Output Deals," *Variety*, August 25, 2017, *available at* http://variety.com/2017/biz/news/amazon-roy-price-straight-to-series-orders-output-deals-1202538880/.

148 *See, e.g.*, Sheryl Sandberg, Facebook Presentation at Morgan Stanley Technology, Media and Telecom Conference, February 28, 2017, pp. 3-4; [redacted]

Table 13: Net US Digital Ad Revenues by Company, 2016-2019

(billions)	**2016**	**2017**	**2018**	**2019**
Google	$29.4	$35.0	$40.1	$45.7
Facebook	$12.4	$17.4	$21.6	$25.6
Microsoft (Microsoft and Linkedin)	$3.3	$3.6	$3.8	$4.0
Oath*	$1.3	$3.6	$3.7	$3.8
Amazon	$1.1	$1.7	$2.4	$3.2
Twitter	$1.4	$1.2	$1.2	$1.2
Yelp	$0.6	$0.7	$0.8	$1.0
Snapchat	$0.3	$0.6	$1.2	$2.0
Yahoo	$2.3	-	-	-
IAC	$0.5	$0.5	$0.4	$0.4
Other	$19.0	$18.8	$18.6	$18.6
Total digital ad spending	**$71.6**	**$83.0**	**$93.8**	**$105.4**

Notes: Includes advertising that appears on desktop and laptop computers as well as mobile phones, tablets and other internet-connected devices, and includes all the various formats of advertising on those platforms; net ad revenues after companies pay traffic acquisition costs (TAC) to partner sites. Ad revenues are actual for 2016, expected as of September for 2017, and forecasts for 2018 amd 2019.
*Oath is a subsidiary of Verizon Communications that serves as the umbrella company for its digital properties. Digital ad revenues for Oath reported in this table include Verizon, AOL and Millennial Media. Yahoo is included after 2016.

Source: eMarketer, "Google and Facebook Tighten Grip on US Digital Ad Market," September 21, 2017.

150. The proposed transaction will enable AT&T and Turner to use data in the same way as vertically integrated Netflix, Facebook, and Google. And by using data for targeted advertising, AT&T will offer a more powerful alternative to Google and Facebook, benefitting both consumers and advertisers. Furthermore, as the value of Time Warner's content and advertising inventory grow, the gains to having that content widely distributed also increase, thus producing downward pricing pressure. Plaintiff does not address that effect in its Complaint, and Plaintiff instead seeks to prevent AT&T and Time Warner from responding to vertically integrated competitors with vertical integration of their own.

B. COST SAVINGS PRODUCE DOWNWARD PRICING PRESSURE

151. I understand that the report of Rajiv Gokhale describes a number of areas of cost savings.[149] Some of these are reductions in marginal costs, which standard economics indicates produces downward pricing pressure. Some of the cost savings are fixed costs which can benefit consumers by reducing the costs of research and development projects and thus further increasing incentive to invest and innovate, especially over the longer-term.[150] Consumer benefits from fixed-cost savings due to a merger, including increased incentives to invest and innovate, have been highlighted by Katz and Shelanski who say that "even a small change in fixed costs can lead to a large change in consumer welfare [when] the cost change (or other merger efficiency) tips the balance in favor of a supplier's undertaking a discrete investment that generates a large amount of consumer surplus, such as the introduction of a new product."[151] Other efficiencies increase the profits that Time Warner can obtain by reaching deals with distributors, thus creating greater incentives to expand distribution and thus downward pressure on prices for Time Warner content.

C. ELIMINATION OF DOUBLE MARGINALIZATION

152. Another well-known benefit from vertical integration is the elimination of double marginalization, which is recognized to create incentives to reduce prices to consumers. In the context of the present transaction, it is easy to explain. Content providers including Turner and others generally sell their networks to distributors on a "per-sub, per-month" basis—e.g., $5 per-subscriber, per-month for Turner content. So from the point of view of the MVPD, the marginal cost of adding an additional subscriber includes that $5 per-sub, per-month. Yet, the true cost to

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149 Expert Report of Rajiv Gokhale, February 2, 2018.

150 Horizontal Merger Guidelines, § 10, note 15 ("Efficiencies relating to costs that are fixed in the short term are unlikely to benefit customers in the short term, but can benefit customers in the longer run, e.g., if they make new product introduction less expensive.").

151 Michael L. Katz and Howard A. Shelanski (2007), "Mergers and Innovation," *Antitrust Law Journal* 74(1):1-85, p. 56.

Turner of adding one more subscriber is generally *negative*: Not only is there no incremental cost to the network as more subscribers are added, the network actually *earns* advertising revenue, which is the equivalent of a negative marginal cost.

153. Hence, pre-merger, when AT&T chose the optimal price of its distribution service, it included the per-subscriber per-month value for Turner content as a cost. Post-merger, it will internalize the true *negative* marginal cost of the Turner content (since any payment to Turner is just an intra-company transfer), meaning this acts exactly like a content cost decrease in terms of its effect on optimal AT&T distribution prices.[152] The consequence is lower prices to AT&T's distribution customers.

D. INNOVATION BENEFITS CAN BE LARGE

154. Although the exact amount of future innovation from the merger is hard to predict and quantify, when innovation does occur the benefits can be enormous. That is because innovation is the key driver in the growth of consumer welfare over time.[153] Nobel Prize-winning economist Robert Solow calculated in 1957 that, during the first half of the 20th century, more than 87% of economic growth was attributable to technological change.[154] Modern economics

[152] A complication arises on this simple story in the case where new subscribers attracted to AT&T via lower prices (due to the elimination of double marginalization) would otherwise have obtained Turner content from another distributor. In that case, while AT&T does not treat any payment to Turner as a real cost, it does recognize the opportunity cost of lost Turner fees and advertising revenue at other distributors as a cost. However, as noted above, cord cutting is a growing phenomenon, so some customers who would switch to AT&T in response to a price cut would come from the subset of OVDs that do not carry Turner, eliminating the opportunity cost. Indeed, as discussed above, an increasing percentage of outflows from AT&T involve cord-cutting, so one effect of lowering AT&T's prices would likely be to reduce such cord cutting.

[153] *See* Timothy F. Bresnahan and Robert J. Gordon (2006), "The Economics of New Goods," *National Bureau of Economic Research*, p. 1 ("Clearly, new goods are at the heart of economic progress.").

[154] Robert Solow (1957), "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics* 39(3):312-320, p. 320 ("Gross output per man hour

textbooks continue to recognize the importance of technological progress for growth.[155] Other economic studies indicate that even innovations that might be considered "small" in the grand scheme of the economy can nevertheless have large impacts on consumer welfare.[156] Economic evidence also indicates that the vast majority of the value of innovation generally accrues to consumers, not the firms or individuals responsible for new innovations.[157]

155. Because of the critical importance and outsized benefits of innovation, antitrust officials and economists frequently recognize increased innovation as a "dynamic efficiency" that must be considered in merger analysis, even when such efficiencies cannot be precisely quantified. For example, the Antitrust Modernization Commission (on which I served, along with now-Assistant

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doubled over the interval [1909-1949], with 87 ½ per cent of the increase attributable to technical change and the remaining 12 ½ per cent to increased use of capital.").

155 Robert J. Barro (2000), *Macroeconomics*, MIT Press, pp. 399-400 ("[T]echnological progress … is, in fact, crucial to the long-term per capital growth that the U.S. economy has been able to sustain for two centuries.").

156 *See, e.g.*, Jerry A. Hausman and Gregory K. Leonard (2002), "The Competitive Effects of a New Product Introduction: A Case Study," *Journal of Industrial Economics*, L(3):237-263 (estimating welfare effect of introduction of "Kleenex Bath Tissue" as $69.2 million across 30 cities, representing approximately 7% of bath tissue expenditure in those cities); Austan Goolsbee and Amil Petrin (2004), "The Consumer Gains from Direct Broadcast Satellites and the Competition with Cable TV," *Econometrica* 72(2):351-81, p. 351 ("We find a welfare gain of between $127 and $190 per year (aggregate $2.5 billion) for satellite buyers, and about $50 (aggregate $3 billion) for cable subscribers."); Erik Brynjolfsson, Michael D. Smith, and Yu (Jeffrey) Hu (2003), "Consumer Surplus in the Digital Economy: Estimating the Value of Increased Product Variety at Online Booksellers," *Management Science* 49(11):1580-96, p. 1580 ("Our analysis indicates that the increased product variety of online bookstores enhanced consumer welfare by $731 million to $1.03 billion in the year 2000, which is at least five times as large as the consumer welfare gain from increased competition and lower prices in this market.").

157 *See, generally*, Robert Gordon, *The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War*, Princeton University Press (2016). William D. Nordhaus (2004), "Schumpeterian Profits in the American Economy: Theory and Measurement," *NBER Working Paper* 10433 ("We conclude that only a miniscule fraction of the social returns from technological advances over the 1948-2001 period was captured by producers, indicating that most of the benefits of technological change are passed on to consumers rather than captured by producers.").

Attorney General Makan Delrahim and Deputy Assistant Attorney General Donald Kempf) concluded, "[t]o improve the application of antitrust in new economy industries, antitrust enforcers should give further consideration to efficiencies that lead to more rapid or enhanced innovation. The potential benefits to consumer welfare from such efficiencies are great, thus warranting careful assessments of the potential for certain business conduct to create more rapid or enhanced innovation."[158] Numerous economists and antitrust officials have likewise recognized the critical and growing importance of innovation efficiencies.[159] Vertical integration of firms with complementary assets can increase innovation.[160]

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158 Antitrust Modernization Commission, Report and Recommendations, April 2007, Chapter I.A: Antitrust Law and the 'New Economy,' p. 40.

159 *See, e.g.,* Michael L. Katz and Howard A. Shelanski (2007), "Mergers and Innovation," *Antitrust Law Journal* 74(1):1-85 (indicating that there is "substantial sentiment in favor of retreat from applying conventional enforcement guidelines and presumptions where innovation is at stake."); William J. Kolasky and Andrew R. Dick (2003), "The Merger Guidelines and the Integration of Efficiencies into Antitrust Review of Horizontal Mergers," *Antitrust Law Journal* 7(1): pp. 247-248 ("T]he dynamic efficiency principle, most closely associated with Austrian economist Joseph Schumpeter, suggests that the short-run costs associated with allocative and productive inefficiencies stemming from market power can more than be offset by benefits from encouraging dynamic efficiencies through 'creative destruction.'").

160 *See, e.g.*, Timothy Bresnahan and Jonathan Levin (2013), "Vertical Integration and Market Structure," in *Handbook of Organizational Economics*, Robert Gibbons and John Roberts, eds., Princeton University Press, p. 880 ("A potential benefit of integrating the invention of complementary technologies is that investments may be better coordinated. A basic price theory intuition is that creators of complementary inventions may end up in a position of bilateral or multilateral monopoly, and they may fail to coordinate their pricing and other ex post decisions. This can lead to a form of hold-up where the full returns on ex ante investment are not appropriated. Kenneth Arrow (1974) famously pointed out one particular problem with contracting over innovation, which is that firms seeking to reach an agreement may find it difficult to exchange information in a way that protects their ideas. For these reasons, vertical integration, or a similar contract to internalize externalities in complementary invention, can increase the private return from innovative activity."). The hold-up concern discussed is particularly relevant where firms must make large investments that require the participation of the other party to fully realize the benefits. For example, Time Warner would likely be reluctant to make large

156. It is impossible to predict with specificity all of the likely innovations a merger between AT&T and Time Warner would create and the benefits that would result. However, if, for example, AT&T succeeds in developing addressable advertising at scale it would be a positive pro-competitive effect on a market that is becoming highly concentrated, as I have already discussed, and therefore has the potential to create large benefits.

E. FAILURE TO ACCOUNT FOR PRO-COMPETITIVE BENEFITS WILL LEAD TO AN OVERSTATEMENT OF HARMS

157. Plaintiff has dismissed pro-competitive benefits in its Complaint, but pro-competitive benefits are an important part of assessing the net effect of a merger. Once Plaintiff has explained how it is implementing its theory of harm, I reserve the right to investigate how those pro-competitive benefits described above should affect Plaintiff's analysis and whether taking those pro-competitive benefits into account in Plaintiff's analysis would result in no net harm. Here, I note that each of the types of efficiencies discussed above should be considered when evaluating Plaintiff's theory of harm generally and its model specifically.

158. First, increasing the value of Time Warner content and advertising inventory through use of AT&T consumer relationships and data creates more value from distribution of Time Warner content and thus creates incentives to expand distribution of Time Warner content and thus places downward pressure on prices. Such incentives can offset the incentives Plaintiff claims might exist to raise prices and can lead to net decreases in prices.

159. Second, the cost reductions discussed above (e.g., reductions in marketing expenses and input prices) can also benefit consumers in a variety of ways that should be taken into account when assessing the net impact of the merger on consumers. As I explained above, such cost reductions can create downward pricing pressure, encourage investment or both, which can produce substantial benefits for consumers. For example, if the merged firm is able to reduce its

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investments in experimenting with tailoring its content or advertisements to use AT&T data, or assisting AT&T with improving its data analysis, absent vertical integration, as once it made those investments in using the data from AT&T it would be subject to hold-up. I understand that AT&T and Time Warner have, in fact, failed to reach contractual agreement on use of AT&T data.

marginal subscriber acquisition costs through cost reductions, those reductions can provide an incentive to compete harder for new customers.

160. Third, the elimination of double marginalization, as I explained above, will result in downward pressure on prices to AT&T's distribution subscribers, which will also create competitive pressure for AT&T's competitors to respond.

161. Fourth, as I discussed above, reducing transaction costs (e.g., bargaining friction) can benefit consumers in a variety of ways including increasing incentives to invest and innovate. Innovations that produce a more desirable or valuable product would obviously be a benefit to competition and consumers.

VIII. HBO IS OF LIMITED COMPETITIVE SIGNIFICANCE

162. Plaintiff argues that "the merger would likely give the merged firm the incentive and ability to use its control of HBO to substantially lessen competition."[161] In particular, the Complaint points to the possibility of "additional leverage" when negotiating with rival MVPDs over HBO, presumably implying the possibility of higher prices due to the power of HBO to drive departures from other distributors, similar to the bargaining leverage theory for Turner. The Complaint also argues that HBO is a particularly important promotional tool "to entice new customers and dissuade unhappy customers from leaving," and argues that the merged firm would have the incentive and ability to impede rival MVPDs from using HBO as such a promotional tool.

163. The discussion of this bargaining theory above—which focused on Turner—applies to HBO also. In this section, I further explain why—whether through the mechanisms identified in the Complaint or any others—the available evidence undermines Plaintiff's claim that HBO content is sufficiently powerful to substantially harm competition in video distribution.

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[161] Complaint, ¶ 39.

164. **First**, while it is true that HBO has successful shows, only about 33% of subscribers take HBO.[162] HBO exists today in a "golden age" of television in which the set of "premium" video content is larger than ever, including from other premium networks like Showtime or Starz, traditional cable networks like FX, A&E, or AMC, and OVDs like Netflix, Amazon, and Hulu. Even more importantly, similar to my earlier analysis for Turner, what ultimately matters in assessing the possibility of harm to competition in video distribution is whether HBO is a unique "factory" for the supply of such premium content. It is not: HBO is just one of many firms that sponsor the production and sale of such content, with an increasing proportion of premium content coming from vertically integrated studios such as Netflix and Amazon. In order to keep up with Netflix's investment in original programming, HBO would have to more than triple its own investment over the next two years, which is not predicted.[163]

165. **Second**, an exact replica of HBO exists online, in the form of HBO NOW (or other digital HBO offerings such as the one offered through the Amazon Prime channel). These online HBO offerings are available without a contractual commitment at a price generally equal to or less than the standard price charged by MVPDs. Because HBO NOW provides an effectively identical substitute to HBO that does not require leaving one's MVPD, it is unlikely that AT&T could expect to gain substantial subscribers if it were to withhold HBO from other MVPDs, particularly given that it is substantially easier to switch to HBO NOW (or to one of these other

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162 HBO had 32.2 million MVPD subscribers in September 2016. HBO Subscription Revenue_2008-2016 by month.xlsx. There were 95.1 million MVPD subscribers in 3Q 2016. SNL Kagan, MediaCensus: All Video by DMA 2016Q3, data extracted September 23, 2017.

163 As of 2016, Netflix's content budget was $5.2 billion, while HBO/Cinemax's was $1.9 billion, with original content spending of $0.837 billion and $0.962 billion, respectively. SNL Kagan expects Netflix original content spending to increase to $3 billion by 2020. SNL Kagan, "Profile: Netflix (U.S.)," March 6, 2017; Deana Myers, "Breaking down premium networks content spend," SNL Kagan, December 14, 2017. As I discussed earlier, Netflix announced in January 2018 that it was increasing its 2018 content budget past its prior projections.

substitute options) than to switch away from one's preferred MVPD.[164] As a result, the number of subscribers that would switch MVPDs (and thus potentially be diverted to AT&T/DIRECTV) in response to an HBO price increase or loss of HBO content would be quite small, undermining Plaintiff's bargaining leverage theory. Indeed, as I describe below, there is ample empirical evidence to confirm this fact. And the marketplace has recognized this: For example, Charter CEO Thomas Rutledge stated that "all of our customers now have the ability to get HBO, and we don't need HBO anymore to satisfy our customers."[165]

166. **Third**, other evidence shows that HBO is not the type of content that AT&T could use to create significant departures from other MVPDs, as would be required for Plaintiff's theories of harm. Most notably, AT&T itself conducts regular, controlled marketing experiments, in which a subset of HBO subscribers are charged higher prices, while others, for a period of a few months, are not. These studies consistently find at most insignificant subscriber losses among those facing the price increases relative to those who do not. For example, DIRECTV conducted a 2013 study, in which the impact on customer retention was isolated by comparing existing HBO subscribers receiving a price increase (including a $2 increase on HBO, along with price increases on the base packages) to a "hold-out" group that did not face such an increase. Based on this study, DIRECTV determined that the total churn effect of this price increase on HBO subscribers was tiny: Only *five one hundredths of a percent* (0.05%) of affected customers departed the DIRECTV platform because of the price increase.[166] That means that churn from a

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164 Plaintiff may claim that HBO could discontinue its online offerings post-merger, but HBO has long-term contracts in place with online distributors that prevent it from doing so, or from raising price to those distributors. For example, Amazon is the single largest online distributor of HBO with well over a million subscribers as of June 2017, and its contract does not expire until November of [redacted]. Domestic Digital Subscribers - As of June 2017 Month-End.pdf; TWI-07852137, HBO and Amazon Distribution Agreement, November 30, [redacted].

165 HBO has risks: Charter CEO, CNBC (November 12, 2015), *available at* https://www.cnbc.com/video/2015/11/12/hbo-has-risks-charter-ceo.html.

166 DIRECTV, "Price Increase Analysis Holistic Impact," May 2, 2013, ATT-DOJ2R-13142841, slide 5. The incremental churn among HBO subscribers with $7+ price

price increase this size on HBO customers would be only roughly [redacted] customers across DIRECTV's entire 2013 customer base of about [redacted] HBO and [redacted] MVPD subscribers.[167] DIRECTV also conducted similar studies in 2015 and 2016, in which the price increases were applied to all premium customers, not just HBO customers. In each, the number of departures was tiny.[168] This evidence undermines Plaintiff's claim that HBO pricing can be used to substantially disadvantage competitors.

167. **Fourth,** AT&T pricing studies make plain that AT&T does not expect large MVPD subscriber churn effects from a price increase on premium channels. And they also make plain that the primary concern is with downgrades—as opposed to departures—particularly given new and improving OVD options. For example, the studies say that AT&T needs to "[p]roceed with caution" on such increases due to "risk from new OTT services."[169] Because AT&T post-merger would make no additional profits when a subscriber at another MVPD downgrades (as opposed to departs and switches to AT&T) downgrades do not represent a competitive concern under Plaintiff's theory of harm. In sum then, while AT&T does not expect significant departures due to HBO price increases—a key ingredient in Plaintiff's bargaining theory—such price increases

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increase was 0.18%. DIRECTV, "Price Increase Analysis Holistic Impact," May 2, 2013, ATT-DOJ2R-13142841, slide 13.

167 DIRECTV had [redacted] HBO subscribers in January 2013. HBO Subscription Revenue_2008-2016 by month.xlsx. DIRECTV had [redacted] subscribers in January 2013. ATT-DOJ2R-04527565, excel file.

168 *See* DIRECTV, "2015 Price Increase Impact," July 2015, ATT-DOJ2R-04590676, Slide 12 ("Premiums subs largely indifferent to price increase"); AT&T, "DBS Platform Price Increase 2016 – Results and Insights," July 1, 2016, ATT-DOJ2R-10251450, at 29 ("Premium subs are more price resilient than non-premium subs. However aggressive price increase did result in [redacted] premium downgrades.").

169 DIRECTV, "2015 Price Increase Impact," July 2015, ATT-DOJ2R-04590676, Slide 5; *see also* ATT-LIT-02678082, DIRECTV, "Price Increase for Paid Premium = [redacted]," undated, p. 1 (noting that DIRECTV had "[o]riginally recommended an increase of [redacted] on HBO ([redacted]) to cover higher content cost" but "redesigned the approach" and did not raise price on HBO, or on Pick 1 and Pick 2 subs generally, because of the "new threat of HBO OTT offering").

are constrained by the risk of downgrades, with that risk growing with the rise of OVD services like HBO NOW. Again, the evidence undermines Plaintiff's theory of harm.

168. **Fifth**, additional empirical evidence related to [redacted]. In 2015 Comcast "de-packaged" HBO, which means it dropped HBO out of some of its bundled packages and ceased promoting HBO. As the graph below shows, [redacted] Total Comcast subscribers began growing in fall 2015, reversing a prior downward trend, and continued growing through the de-packaging.[170] By contrast, [redacted] During this period, however, Comcast's total subscriber counts increased.[171] This is not consistent with Plaintiff's theory, [redacted][172] (See Figure 17.)

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170 Indeed, Comcast touted its strong subscriber performance during 2016. *See*, for example, Comcast Q4 2016 Earnings Call, January 26, 2017, Brian Roberts, Chairman & CEO, pp. 1-2 ("Starting with cable; we added 161,000 video subscribers. This is our best result and also the first time we have added video subscribers in a decade, ending with almost 23 million strong. This is a fantastic accomplishment.").

171 As noted above, Comcast added 161,000 video subscribers, the first time Comcast had had a net gain in video subscribers in a decade.

172 [redacted]

Figure 17: Comcast HBO Subscribers and All Subscribers, Jan. 2015 – June 2017

[redacted] Total subs data interpolated from quarterly to monthly.
Sources: SNL Kagan, MediaCensus: All Video by DMA 2014Q1 - 2017Q2, data extracted September 23, 2017; HBO Subscription Revenue_2008-2016 by month.xlsx; 9.25.2017 Comcast Subs Actualized.xlsx.

169. **Sixth**, HBO's own pricing strategy is not economically consistent with Plaintiff's theory that HBO content can drive significant departures. HBO structures its largest MVPD contracts to use low or zero marginal cost "bands" at designated subscriber thresholds. This structure creates incentives for MVPDs to increase HBO volume by providing the opportunity for it to sell HBO at low or no marginal cost to the MVPD. If it were true, as Plaintiff's theory of harm requires, that HBO pricing drove significant substitution across MVPDs, it would be economically irrational for HBO (and the MVPDs that resell HBO) to institute a strategy to charge zero marginal prices for its content. If Plaintiff's theory were correct, HBO would recognize that zero marginal prices would lead to intense competition across MVPDs on HBO pricing, eroding the profits available for HBO and MVPDs to share via their negotiations. That is, one can use the level of the marginal price on HBO to reflect the extent of cross-MVPD substitution, with zero marginal pricing indicating that there must be no substitution, and low

marginal pricing indicating that any such substitution must be small. So the observed zero or very low marginal price contracts provide evidence that undermines Plaintiff's claim of significant MVPD switching based on HBO pricing.

170. **Seventh**, while Plaintiff also claims that HBO has unique value as a promotional tool—arguing that HBO plays "'a key role in attracting and retaining' subscribers," citing to HBO marketing materials[173]—similar claims are made by many networks, as I discussed earlier.[174] HBO is but one of many promotional tools used by MVPDs, with others including other premium networks (such as Showtime or Starz), other premium content (such as Netflix, which Comcast and others have recently used as promotional offerings), other promotional gifts (such as gift cards), or simple price reductions. And, indeed, many MVPDs make little or no use of HBO at all. ATT's competitive intelligence data document this phenomenon. In 2017, AT&T tracked promotional activity of 27 different MVPDs, and the offers captured include various promotional elements, such as cash, equipment, premium channels, and others, again showing premiums are but one of many promotional options. Indeed, of the 27 MVPDs tracked in 2017, seven MVPDs, including Brighthouse, Cable One, and Google Fiber never included any premium channels in their tracked promotions. An additional seven MVPDs, including Charter, Comcast, and Mediacom, never included HBO specifically in its promotions tracked by AT&T. A further three MVPDs (Cablevision, Time Warner Cable, and Centurylink) used HBO in their tracked promotions very sparingly. And as I discussed above, Comcast had deliberately chosen to cease promoting HBO for a time.[175] In addition, HBO's role as a promotional tool has declined with the rise of OVDs.[176]

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173 Complaint, ¶ 25.

174 *See* note 62

175 AT&T Market Intelligence Dashboard: Pricing and Offers Database (ATT-LIT-03121569, excel file; MID 2017 Jun-Dec 2018-01-12.xlsx).

176 For example, [redacted]

171. **Finally**, marketplace realities completely undermine Plaintiff's suggestion that the merged company could harm VMVPDs in particular by withholding HBO.[177] As discussed above, four of the eight VMVPDs do not carry, and have never carried, either Turner or HBO, and three of the four most recent entrants do not carry Turner or HBO. Thus, HBO is clearly not required for the launch of a VMVPD.

IX. THE CLAIM THAT AT&T WILL BE ABLE TO EXTRACT HIGHER PRICES FOR TURNER CONTENT AFTER THE MERGER DUE TO INCREASED BARGAINING LEVERAGE APPEARS TO BE BASED ON A FRAGILE THEORY THAT IS INCONSISTENT WITH MARKETPLACE EVIDENCE

172. Plaintiff claims it can demonstrate that prices for Turner content will rise after the merger by using "a standard bargaining model."[178] Neither the details of the model nor the results have been provided yet. The Complaint summarizes the theory as (1) AT&T will gain "significant profits" if Time Warner fails to reach a deal with a rival distributor because customers of that rival will divert to AT&T, (2) this will improve Time Warner's "best alternative to a deal," and thus (3) this will enable Time Warner to successfully "demand higher prices than it otherwise would" from distributors. I therefore can provide general comments at this stage but reserve specific responses until I have reviewed the Plaintiff's model.

173. I do note that a general concern with models in merger review is whether they can make accurate predictions. Here, the predictions claimed by Plaintiff are inconsistent with what has actually happened in recent years. As the current Deputy Assistant Attorney General for Economic Analysis of the Antitrust Division has stated: "Do the models abstract away from crucial pieces of behavior, of reality?"[179] If a model is inconsistent with observed facts, it is

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[redacted]

177 Complaint, ¶ 40.

178 Complaint, ¶¶ 37-38.

179 Luke Froeb, "Whither Merger Simulation," *Antitrust Source*, May 2004, p. 7.

difficult to justify using it in this case to justify blocking a merger. Overall, no theory should be given credence if it fails to square with the empirical evidence.[180]

174. One key point is that AT&T has contractually committed not to withdraw its content and, if needed, to submit to binding baseball-style arbitration. The Plaintiff simply ignores that the contractual conditions that AT&T has imposed do not allow an outcome where "no deal is reached, resulting in a blackout of such networks."[181] This means that the "best alternative to a deal"[182] is not what the Plaintiff claims—foreclosure and diversion of customers to AT&T—but instead is no foreclosure, continued access to content and access to binding arbitration to determine price. The Plaintiff simply ignores this contractual obligation of Turner that fundamentally renders their bargaining model not applicable to this transaction.

175. Even in the absence of this fundamental error, the Plaintiff ignores the evidence on, among other things, the limited role of Time Warner in the exploding content universe, the range of competitive options open to distributors, and the increasing entry in the distribution market.

X. INDUSTRY CHARACTERISTICS INCREASE THE DIFFICULTY OF COORDINATION

176. In addition to theories involving unilateral actions by AT&T/Time Warner, the Complaint also includes vague theories regarding the possibility of "oligopolistic coordination," which appear to focus primarily on coordination between Comcast and AT&T to impede

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180 *See, for example*, Bruce Hoffman, the FTC's current Acting Director of the Bureau of Competition, who has stated that "there are plenty of theories of anticompetitive harm from vertical mergers. But the problem is that those theories don't generally predict harm from vertical mergers; they simply show that harm is possible under certain conditions. … These theoretical issues are important. But empirical data is also very important. Here, empirical work has tended to show that vertical mergers (and vertical restraints) are typically procompetitive." D. Bruce Hoffman, "Vertical Merger Enforcement at the FTC," Credit Suisse 2018 Washington Perspectives Conference, January 10, 2018.

181 Complaint, ¶ 5.

182 Complaint, ¶ 5.

"emerging online competition" and increase the prices of their networks.[183] The Complaint is nearly silent on how the merger would actually result in such coordination. And, importantly, the Complaint seems not to recognize that its primary theory implies that Comcast will be harmed by AT&T post-merger price increases on the one hand, but then that Comcast will become a willing partner with AT&T to harm online distributors.

177. Given that the Complaint offers no specific theory of coordination, my response must largely wait for Plaintiff's experts to specify how and why this merger would create anticompetitive coordination with respect to content.[184] For now, I simply note that Plaintiff's theory will need to explain how firms as different as Comcast and AT&T would effectively coordinate in light of several industry characteristics that normally indicate to economists that coordination becomes less likely as a result of the characteristics.

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183 Complaint, ¶¶ 9, 41.

184 I do note that the FCC rejected similar claims in the Charter/Time Warner Cable merger. *See, e.g.*, FCC, Memorandum Opinion and Order, *In the Matter of Applications of Charter Communications, Inc., Time Warner Cable, Inc., and Advance/Newhouse Partnership For Consent to Assign or Transfer Control of Licenses and Authorizations*, FCC 16-59, May 5, 2016, ¶¶ 228, 234-235 ("Based on our review of the record, we find that the transaction is unlikely to induce more coordinated action at the national or local level that would harm consumers and lead to a lessening of competition for BIAS [broadband Internet access services]." "[C]ollusion between a pair of BIAS providers in an environment with differentiated competitors may be harder to sustain. … Similarly, the businesses of AT&T, DISH, and Verizon are very distinct from each other, and from those of Comcast and New Charter. For example, among these companies: only AT&T and Verizon provide mobile phone service; AT&T has a significantly larger MVPD subscriber base (due in large part to its acquisition of DirecTV) compared to Verizon; Verizon has a higher proportion of FTTH [fiber-to-the-home]—and with it larger capacity on its network—than does AT&T, Comcast, or New Charter; and DISH is a pure satellite operator with almost no wireline operations. While each of these three quite different non-cable companies competes head-to-head with Comcast and New Charter, they do so in different locations and using different strategies, thus making coordinated action between Comcast and New Charter more difficult against each of these different rival providers.").

178. For example, as I have explained above, the content market is relatively unconcentrated and dynamic with firms offering a variety of different products and using different business models. As described in my textbook, two of the factors that facilitate coordination are whether there are few firms in the market and whether they are selling identical products.[185] That is certainly not the case with respect to the content market.

179. Moreover, Comcast and AT&T are very different on a wide variety of dimensions, creating incentives for each to behave differently. Each of the following differences in AT&T and Comcast's businesses would hinder their ability to arrive at and maintain any coordinated outcome:

- While Comcast focuses heavily on fixed broadband offerings through its footprint, AT&T only offers fixed broadband service within the limited U-Verse footprint. In contrast, however, AT&T offers mobile broadband service nationwide and views the merger as a way to increase the quality of its mobile offerings, meaning that the merger serves to *increase* the importance of this difference between AT&T and Comcast.
- AT&T's and Comcast's contracts with distributors [redacted]
- AT&T and Comcast have different geographic footprints, with AT&T providing video service nationwide, but broadband service only in its U-Verse footprint, while Comcast provides both video and broadband service each within its entire cable footprint.
- The nature of the content each firm would own post-merger would be quite different, with NBCU's content focused around broadcast networks, RSNs, and national cable networks, while AT&T's content would be focused around national cable networks and a

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185 Dennis W. Carlton and Jeffrey M. Perloff (2005), *Modern Industrial Organization*, 4th edition, p. 136.

premium network. Comcast has no premium network, while AT&T has no broadcast network and only very limited RSNs (gaining no more RSNs through the merger). One would expect the costs and benefits of any alleged strategy to limit OVD access to content to vary across these types of content, hindering prospects for coordination.

180. The importance of these differences between AT&T and Comcast is heightened by the dynamic nature of the video content and distribution markets, highlighted above. Any change to the video marketplace would have differential effects on AT&T and Comcast. For example, improvements in the technology for video distribution over wired or wireless broadband would affect the two companies (and their incentives in dealing with OVDs) differently due to their differential strengths with these two technologies.

Dennis W. Carlton

February 2, 2018

Date

APPENDIX A: CURRICULUM VITAE

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Ph.D., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Economics, 1975

M.S., MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts: Operations Research, 1974

A.B., HARVARD UNIVERSITY (Summa cum laude): Applied Math and Economics, 1972

<u>EMPLOYMENT</u>

COMPASS LEXECON (formerly Lexecon), (2008 – present) Senior Managing Director; LEXECON INC., (1977 – 2006), President 1997 – 2001, Senior Managing Director 2003 - 2006

UNIVERSITY OF CHICAGO, Booth School of Business, David McDaniel Keller Professor of Economics (2011 – present); Katherine Dusak Miller Professor of Economics (2008 – 2011); Professor of Economics (1984 – 2008); Law School, Professor of Economics (1980 – 1984); Department of Economics, Assistant Professor (1976 – 1979); Associate Professor (1979)

U.S. DEPARTMENT OF JUSTICE, Washington, District of Columbia (2006 – 2008) Deputy Assistant Attorney General for Economic Analysis, Antitrust Division

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Massachusetts, Department of Economics (1975 – 1976) Instructor in Economics

OTHER PROFESSIONAL EXPERIENCE

HARVARD UNIVERSITY, Public Policy Summer Course in Economics (1977), Professor

BELL TELEPHONE LABORATORIES (Summers 1976, 1977)

JOINT CENTER FOR URBAN STUDIES OF M.I.T. AND HARVARD UNIVERSITY, Cambridge, Massachusetts (1974 - 1975)

CHARLES RIVER ASSOCIATES, Cambridge, Massachusetts (Summers 1971, 1972) Research Assistant

FIELDS OF SPECIALIZATION

Theoretical and Applied Microeconomics
Industrial Organization

ACADEMIC HONORS AND FELLOWSHIPS

Best Academic Economics Article in Antitrust - 2016 Antitrust Writing Awards, given by Concurrences and George Washington University Law School for the article "Rethinking Antitrust in the Presence of Transaction Costs: Coasian Implications" (with B. Keating) in *Review of Industrial Organization*
Keynote Address, Federal Trade Commission, Auto Distribution: Current Issues and Future Trends, January 19, 2016
Award for Antitrust Litigation Consultants of the Year 2015, awarded by Corporate Vision
Keynote Address, International Industrial Organization Conference, 2014
The 2014 Distinguished Fellow, Industrial Organization Society
Award for Best Antitrust Economist, Global Competition Review, 2014
Keynote Address, Sixth Annual Federal Trade Commission Microeconomics Conference, 2013
Heath Memorial Lecture, University of Florida, 2013
Award (w. Mark Israel) for Best Antitrust Analysis in Litigated Cases, Global Competition Review, 2013
Keynote Address, 21st Annual Workshop of the Competition Law & Policy Institute of New Zealand, 2010
Keynote Address, Japanese Symposium on Competition, sponsored by Japan Fair Trade Commission, 2009
Recipient of Inaugural Robert F. Lanzilotti Prize, awarded by the Industrial Organization Society for Best Paper in Antitrust Economics, 2008
Keynote Address to Israel Antitrust Conference, 2008
Lewis Bernstein Memorial Antitrust Lecture, Washington, D.C., 2006
Distinguished Visitor, University of Melbourne, April 2005
Milton Handler Lecture, New York, 2004
Keynote Address to the International Competition Network, Mexico, 2004

Alexander Brody Distinguished Lecture, Yeshiva University, 2000
Ph.D. Thesis chosen to appear in the Garland Series of Outstanding Dissertations in Economics
Recipient of the 1977 P.W.S. Andrews Memorial Prize Essay, best essay in the field of Industrial Organization by a scholar under the age of thirty
National Science Foundation Grant, 1977 – 1985
Recipient of Post-doctoral Grant from the Lincoln Foundation, 1975
National Science Foundation Fellowship, 1972 – 1975
Phi Beta Kappa, 1971
John Harvard Award, 1970
Detur Book Prize, 1969
Edwards Whitaker Award, 1969
M.I.T., National Scholar Award, 1968

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Co-Organizer and Instructor, Antitrust Judicial Training Institute ,2017
Member, Task Force on International Divergence in Dominance Standards, American Bar Association 2017 - 2018
Board Member, The Taub Center for Social Policy Studies, 2017 - present
Member, U.S. Chamber of Commerce International Competition Policy Expert Group for report on International Trade and Competition, 2017
Appointed Member of the ABA Presidential Transition Task Force, Antitrust Law, 2016
Appointed Member of the ABA Presidential Transition Task Force, Antitrust Law, 2012
Advisory panel to the Department of Justice and the FTC on the merger guidelines, 2010
Co-editor, Journal of Law and Economics, 1980 - present
Visiting Committee, MIT, Department of Economics, 1995 - 2011
Member, Advisory Board, Economics Research Network, 1996 - present
Member, Advisory Board of Antitrust and Regulation Abstracts, Social Science Research Network, 1998 - present
Advisory Board, Massachusetts Institute of Technology, Department of Economics, 1999
Editorial Board, Competition Policy International (CPI), 2010 - present, Co-Editor, Competition Policy International (CPI), 2004 – 2009
Member, Economic Task Force – Antitrust Division, American Bar Association, 2010
Advisory Board, Journal of Competition Law and Economics, 2004 - present
Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice, 2006 – 2008
Presidential Appointment to the Antitrust Modernization Commission, 2004 – 2007
Invited Panelist at Public Hearing on the Retail Banking Sector Inquiry: Payment Cards, before the European Commission in Brussels, Belgium, July 17, 2006
Consultant on Merger Guidelines to the FTC, 2003
Professor, George Mason Institute for Judges, October 2001
Chairman, FTC Round Table on Empirical Industrial Organization (September 11, 2001)

Participant in the Round Table on the Economics of Mergers Between Large ILECS before the Federal Communications Commission, February 5, 1999
Member, Steering Committee, Social Science Research Council, Program in Applied Economics, 1997 - 1999
Participant in roundtable discussions on "The Role of Classical Market Power in Joint Venture Analysis," before the Federal Trade Commission, November 19, 1997 and March 17, 1998.
Participant in meetings with Committee of the Federal Reserve on Payment Systems, June 5, 1997
Associate Editor, Regional Science and Urban Economics, 1987 - 1997
Resident Scholar, Board of Governors of the Federal Reserve System, Summer, 1995
Accreditation Committee, Graduate School of Business, Stanford University, 1995
Associate Editor, The International Journal of Industrial Organization, 1991 - 1995
Editorial Board, Intellectual Property Fraud Reporter, 1990 - 1995
Consultant on Merger Guidelines to the U.S. Department of Justice, 1991 - 1992
Member, Advisory Committee to the Bureau of the Census, 1987 - 1990
National Bureau of Economic Research, Research Associate
Member, American Economic Association, Econometrics Society

BOOKS

Market Behavior Under Uncertainty, Ph.D. Thesis, Massachusetts Institute of Technology (September 1975); Garland Publishing (1984)

Modern Industrial Organization, Scott, Foresman & Co., co-authored with Jeffrey Perloff, first edition (1990), (Chapter 17 of first edition reprinted as “The Economics of Information” for the University of Connecticut, Food Marketing Policy Center (1989)), second edition (1994), translated into Chinese, French, Hungarian and Italian; Addison Wesley Longman, third edition (2000), fourth edition (2005), translated into Chinese (2009)

RESEARCH PAPERS

"The Equilibrium Analysis of Alternative Housing Allowance Payments," (with Joseph Ferreira) Chapter 6 of Analysis of a Direct Housing Allowance Program, The Joint Center for Urban Studies of M.I.T. and Harvard University, (July 1975).

"Theories of Vertical Integration," presented at Fourth Annual Telecommunications Conference. Appears in a volume of Proceedings of the Fourth Annual Telecommunications Conference, Office of Telecommunications Policy, (April 1976).

"Uncertainty, Production Lags, and Pricing," American Economic Review, (February 1977).

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"Vertical Integration in Competitive Markets Under Uncertainty," Journal of Industrial Economics, (March 1979). Awarded the P.W.S. Memorial Prize for the best essay in the field of Industrial Organization by a scholar under the age of thirty.

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"Price Discrimination: Vertical Integration and Divestiture in Natural Resources Markets," (with J. Perloff) Resources and Energy, (March 1981).

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APPENDIX B: MATERIALS RELIED UPON

Court Documents

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APPENDIX C: ECONOMETRIC METHODOLOGY AND RESULTS

Methodology

181. I examine prices over time econometrically to estimate the impact of vertical integration on affiliate fees. I refer to this analysis as my panel data analysis. The methodology I employ is quite standard.[186] It examines whether vertical integration is associated with higher affiliate fees, controlling for other factors that may affect a network's price, such as programming expenses and network ratings. By using multiple observations from before and after an integration (or dis-integration) event for each network, the panel data method also accounts for time-invariant factors that explain variation in prices across networks.

182. As an additional check on my results from the panel data analysis, I use data from a single point in time to compare affiliate fees charged by vertically integrated networks to affiliate fees charged by non-integrated networks, controlling for factors that may affect affiliate fees, such as programming expenses, ratings, genre and network age. I refer to this analysis as the cross-sectional analysis.

Events Analyzed

183. My panel data analysis focuses on the following three events:

- Comcast's integration with NBCU in 2011 (which was subject to conditions that were set and approved by the FCC and this Court).
- DIRECTV's dis-integration from Fox in February 2008.
- Time Warner Cable's dis-integration from Time Warner Inc. in March 2009.

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[186] *See, e.g.*, Jonathan B. Baker, Mark Bykowsky, Patrick DeGraba, Paul LaFontaine, Eric Ralph, and William Sharkey (2011), "The Year in Economics at the FCC, 2010–11: Protecting Competition Online," *Review of Industrial Organization*, 39(4): 297-309 at 304-307; Paul Pautler (2015), "A Brief History of the FTC's Bureau of Economics: Reports, Mergers, and Information Regulation," *Review of Industrial Organization*, 46(1): 59-94 at 79.

184. I estimate an overall effect of vertical integration across the three events by analyzing affiliate fees for NBCU, Fox, and Time Warner networks in periods of vertical integration compared to affiliate fees in periods without integration, accounting for other factors, as described below. I also separately estimate the effect of vertical integration on NBCU networks.

<u>Data and Sources</u>

185. I relied on the following data sources for my analysis:

- Affiliate fees
    - *DIRECTV data:* Affiliate fees paid by DIRECTV to programmers; these data reflect actual payments made by DIRECTV to programmers.
    - *SNL Kagan data:* Affiliate fees paid by the industry as a whole to programmers; these data reflect SNL Kagan's estimates of the average affiliate fee paid for each network across MVPDs. These data are widely used in the industry, were used by the FCC in the Comcast/NBCU proceeding to address a similar question as I address here, and have recently been used in a closely related study of the impact of the Comcast/NBCU merger on affiliate fees conducted by the Phoenix Center for Advanced Legal and Economic Public Policy Studies.[187]
    - *Charter data:* Data for third parties are being produced on a rolling basis. As of the date of this report, I have received data sufficient to analyze affiliate fees paid by Charter.

[187] George S. Ford (2017), "A Retrospective Analysis of Vertical Mergers in Multichannel Video Programming Distribution Markets: The Comcast-NBCU Merger," Phoenix Center Policy Bulletin No. 43, *available at* http://www.phoenix-center.org/PolicyBulletin/PCPB43Final.pdf.

- Explanatory variables
  - SNL Kagan data are used to obtain information on networks' programming expenses, genre and age.[188]
  - Nielsen data, as obtained from SNL Kagan, are used to obtain information on networks ratings.[189]

Regression Specifications

186. My regression specifications using DIRECTV affiliate fee data differ somewhat from the specification using SNL Kagan affiliate fee data because of differences in the two datasets. In particular, because DIRECTV data reflect payments by a single MVPD, I can analyze prices in two specific years that correspond to periods with and without vertical integration for all relevant events of interest. In contrast, because SNL Kagan data are estimates of average prices across all MVPDs, the analysis includes information for each year spanning the time period that correspond to periods with and without vertical integration for all the relevant events of interest. These differences in regression specifications are described in more detail below.

Specifications for DIRECTV data

187. To analyze the aggregate effect of the three integration/dis-integration events using the DIRECTV data, I analyze the prices paid by DIRECTV for NBCU, Fox, Time Warner networks, and other networks in January 2008 and January 2017. I use information from 2008 and 2017 because these years capture the prices paid by DIRECTV in the integrated and un-integrated period for each of the three events.

188. In particular, although Comcast merged with NBCU in 2011, DIRECTV did not sign a new contract with NBCU until [redacted] with the new rates going into effect at the beginning of

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188 Network age is computed using network launch dates obtained from SNL Kagan.

189 Nielsen ratings are generally available for larger networks only. The rating metrics that I used include prime-time and 24-hour ratings. *See* SNL Kagan, "TV Network Summary," pulled January 11, 2018.

[redacted] Thus although NBCU was integrated [redacted] DIRECTV's prices prior to [redacted] were established in a contract signed when NBCU was un-integrated. Likewise, although Fox and Time Warner dis-integrated in 2008 and 2009, respectively, the rates DIRECTV was paying for those networks in 2008 were set while Fox and Time Warner were still vertically integrated with their respective distributor partners. By 2017, new rates were in effect that were negotiated after Fox and Time Warner were no longer vertically integrated. Thus, by analyzing prices in January 2008 and January 2017, I can estimate the vertical integration effect for all three events.

189. To analyze the effect of all three vertical integration events, I use the following regression specification:

$$\log(P_{i,t}) = \beta_1 D_{i,t}{}^{Vert.Int.} + \beta_2 log(Inv_{i,t}) + \beta_3 Rat_{i,t} + \alpha_i + D_{2017} + \varepsilon_{i,t}$$

where:

- $\log(P_{i,t})$ is the natural logarithm of the affiliate fee (per subscriber, per month) for network *i* in year *t*.

- $D_{i,t}{}^{Vert.Int.}$ is the integration indicator variable that takes on a value of "1" for a period in which the network is integrated and "0" for a period in which a network is not integrated. This variable takes a value of 0 for NBCU networks in 2008 and a value of 1 for NBCU networks in 2017. For Fox and Time Warner networks, this variable takes on a value of 1 in 2008 and a value of 0 in 2017. For all other network-year combinations, this variable takes on a value of zero.

- $log(Inv_{i,t})$ is the natural logarithm of the programming investment; I use a three-year moving-average of programming investment to account for the fact that a network's price in any given year may be affected by investments in prior years. These data are published by SNL Kagan.

- $Rat_{i,t}$ is the Nielsen prime time ratings variable for network i. As with programming investments, I use a three year moving-average of ratings to account for the fact that a network's price in any given year may be affected by the ratings in previous years.[190]

- α_i is a network fixed effect, an indicator variable for each network which accounts for network-level, time-invariant unobservable characteristics for each network.

- D_{2017} is an indicator variable for 2017.

190. To analyze the effect of the NBCU integration event alone, I analyze prices paid by DIRECTV for NBCU networks and other networks in January 2010 and January 2017 using the following regression specification:

$$\log(P_{i,t}) = \beta_1 {D_{i,t}}^{NBCU} + \beta_2 log(Inv_{i,t}) + \beta_3 Rat_{i,t} + \alpha_i + D_{2017} + \varepsilon_{i,t}$$

where ${D_{i,t}}^{NBCU}$ takes the value 1 if the network is an NBCU network in 2017 (i.e., after integration), and all other variables are as defined above.

<u>Specifications for SNL Kagan data</u>

191. The regressions using SNL Kagan data use annual data for each year from 2008 to 2017 to estimate the vertical integration effect of the three events, and annual data for each year from 2010 to 2017 to estimate the NBCU-specific integration effect. Instead of relying on just the end-points of the sample as done in the DIRECTV regressions, I use information on all years between the endpoints. I account for the staggered nature of the contracts that gradually roll-off over time across the MVPDs by assuming that 20% of all contracts roll-off in the first year, 40% by the second year, 60% by the third year, 80% by the fourth year, and 100% by the fifth year

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190 In some cases, the three-year moving average cannot be calculated because of missing data for prior years; when this occurs, I use a two-year moving average or the contemporaneous value of the variable.

after the integration/disintegration event occurs. This approach follows that used by the FCC in evaluating prior transactions.[191]

192. To analyze the effect of all three vertical integration events, I use the following regression specification:

$$\log(P_{i,t}) = \beta_1 D_{i,t}{}^{Vert.Int.} + \beta_2 log(Inv_{i,t}) + \beta_3 Rat_{i,t} + \alpha_i + D_t + \varepsilon_{i,t}$$

where:

- $\log(P_{i,t})$, $log(Inv_{i,t})$, $Rat_{i,t}$, and α_i are the same as defined in the DIRECTV specification above.
- $D_{i,t}{}^{Vert.Int.}$ is the integration variable. Because of the staggered nature of the contracts and hence the gradual roll-off assumption discussed above, this variable takes on incremental values ranging between 0 and 1. Thus, for example, for the NBCU observations in the 2008 to 2017 period, it takes a value of 0 for 2008 through 2010, 0.2 for 2011, 0.4 for 2012, 0.6 for 2013, 0.8 for 2014, and 1 for 2015 through 2017.[192] For networks other than ones owned by NBCU, Fox and Time Warner, this variable takes a value of zero in all years.
- D_t is an indicator variable for each year.

191 Comcast-NBCU Order, Technical Appendix.

192 For the Fox observations, $D_{i,t}{}^{Vert.Int.}$ equals 0.83 in 2008 (since DIRECTV acquired Fox in 2004 and divested it in February 2008, the prorated value of $D_{i,t}{}^{Vert.Int.}$ is 0.83 in 2008), 0.63 in 2009, 0.43 in 2010, 0.23 in 2011, 0.03 in 2012, and 0 for 2013 through 2017. For the TW observations in the 2008 to 2017 period, $D_{i,t}{}^{Vert.Int.}$ equals 1 in 2008, 0.85 in 2009 (since TWC divested TW in March 2009, the prorated value of $D_{i,t}{}^{Vert.Int.}$ is 0.85 in 2009), 0.65 in 2010, 0.45 in 2011, 0.25 in 2012, 0.05 in 2013, and 0 for 2014 through 2017.

193. To analyze the effect of the NBCU integration event alone, I analyze prices reflected in the Kagan data for NBCU networks and other networks in each year from 2010 to 2017. To do that I use the following regression specification with Kagan data:

$$\log(P_{i,t}) = \beta_1 D_{i,t}{}^{NBCU} + \beta_2 log(Inv_{i,t}) + \beta_3 Rat_{i,t} + \alpha_i + D_t + \varepsilon_{i,t}$$

where $D_{i,t}{}^{NBCU}$ is a variable reflecting whether the network is an NBCU network whose price was set post-merger and all other variables are as defined above. As described above, because of the staggered nature of the contracts and hence the gradual roll-off assumption, this variable takes on incremental values ranging between 0 and 1 in the same manner as described above, starting in 2010.

Network Selection, Weighting, and Standard Error Corrections

194. The base specifications for the DIRECTV and SNL Kagan regressions presented in the main body of my report are based on the top 50 cable networks to provide a reasonable set of comparable networks and are weighted by network revenue.[193] As discussed in the main body of this report, I deal with potential heteroscedasticity in the regressions by using a weighted regression technique.[194] However, as demonstrated below, my results are not sensitive to restricting the sample to the top 50 networks or to the use of weighting in model estimation.

195. For the aggregate regressions that estimate the vertical integration effect across the three events, the top 50 networks are based on the largest 50 networks in each of the DIRECTV and SNL Kagan data sets, as measured by the average of the affiliate fee revenue in 2008 and

193 The networks included in my regression account for more than 70% of revenues across all cable networks.

194 Heteroscedasticity is an econometric issue arising in situations where the variance of the error term is non-constant. In cases such as this one where the variance of the error term is inversely proportional to network size, giving more weight to observations for larger networks produces a more desirable econometric estimator.

2017.[195] Those revenues are calculated using SNL Kagan data because subscriber data by network for DIRECTV are not readily available. Similarly, the regressions are weighted using the average of each network's 2008 and 2017 total affiliate revenues (across all MVPDs); this data is obtained from SNL Kagan.[196]

196. For NBCU-specific regressions, the top 50 networks are based on the largest 50 networks in the DIRECTV and SNL Kagan data in terms of total affiliate fee revenue in 2010; this affiliate fee revenue is obtained from SNL Kagan data. Likewise, the regressions are weighted using each network's total affiliate revenues (across all MVPDs) in 2010 obtained from SNL Kagan.

197. The standard errors in all regressions are clustered by the owner of the network.[197] This is a standard econometric approach designed to deal with cases where the regression residuals are correlated among particular subsets of observations in the data, as may be the case here given

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195 A few networks were dropped from the top 50 due to the following reasons: i) networks already owned by Comcast prior to acquisition of NBCU that therefore did not undergo a change in their vertical integration status (these include E!, Golf Channel, and NBCSN); ii) control networks that were vertically integrated at any time between 2008 and 2017 and hence did not qualify as being unintegrated during the entire period (examples include AMC and Travel Channel); iii) networks that underwent significant rebranding/repackaging at any time between 2008 and 2017 such that their prices could have been impacted by such a change (examples include Fox Sports 1 and 2, FXX, and Esquire); and iv) and networks without ratings data (examples include TCM, Fox College Sports, Big Ten Network, and ESPN News). The networks included in the regression runs generally account for well above 70% of revenues across all cable networks.

196 I generate the top 50 ranking and the regression weights using the average of the 2008 and 2017 figures because 2008 is the un-integrated period for the NBCU event and 2017 is the un-integrated period for the Fox and TW events.

197 *See, e.g.*, J. Wooldridge (2013), *Introductory Econometrics: A Modern Approach*, Thomson/Southwestern (5th Ed.), p. 483.

that affiliate fees for the various networks of one owner are often set as part of a single negotiation.[198]

Cross-Sectional Specifications

198. A second method of assessing Plaintiff's theory of harm with respect to the Comcast/NBCU transaction is to compare current prices for vertically integrated networks (NBCU networks) to current prices for non-vertically integrated networks, after controlling for differences in cost and quality using variables such as programming investments and ratings. Unlike the panel data method, this cross-section method attempts to control for the relevant factors that explain variation in affiliate fees in a cross-section and uses affiliate fees at one point in time rather than at multiple points in time.[199]

199. I perform the cross-sectional analyses on both the DIRECTV and SNL Kagan data for 2017 using the following specification:

$$\log(P_{i,2017}) = \beta_1 {D_{i,2017}}^{NBCU} + \beta_2 log(Inv_{i,2017}) + \beta_3 Rat_{i,2017} + \beta_4 Age_i + \beta_5 Genre_i + \varepsilon_{i,t}$$

where:

- $log(P_{i,2017})$ is the natural logarithm of the affiliate fee for network i in 2017.
- ${D_{i,2017}}^{NBCU}$ is the indicator variable for NBCU networks.
- Age_i is the network's age.
- $Genre_i$ are indicator variables for a network's genre: "Arts & Entertainment", "Family/Kids", "Film", "General/Variety", "International/Ethnic/Foreign

198 The network ownership status was determined using Kagan's ownership files. These files provide information on the ownership stakes held by various entities in each network in each year. I designate the "top owner" for each network as the entity with the largest stake. Networks for which ownership information is not available are designated to the "others" category.

199 Specifically, the network fixed effects included in the panel data method framework account for time-invariant network-specific factors that affect pricing. For this reason, I prefer the panel data method.

Languages" (e.g., Bet), "Music", "News", "Niche Networks" (e.g., Comedy Central, Syfy, Food and HGTV), "Sports", and "Women's" (e.g., Lifetime)

200. All other variables are the same as defined above. I include multiple ratings variables in this specification to capture as much ratings-related variation in the cross-section as the data permit.[200]

Specifications for Third Party (Charter) data

201. The data available from Charter are similar to those available from DIRECTV, although for a more limited time period. I apply the same analyses to the Charter data as I do to the DIRECTV data, as I discussed in the body of the report. I also report the same sensitivities below as I do for the DIRECTV data.

Results and Robustness Checks

202. Table 14 and Table 15 below present the results for the panel data method for the aggregate and NBCU-specific regressions respectively. Column 1 in both tables reproduces the base-case results from the main body of the report. Other columns report the results of a number of robustness checks to demonstrate that the base-case results are representative and not sensitive to reasonable changes in the specification. Column 2 shows the results for unweighted specifications that assign equal weight to each observation. Columns 3 and 4 show the weighted and unweighted results excluding the Nielsen ratings variable from the specification; since the ratings variable is missing for a few networks in the base specification, this change also includes more of the top 50 networks in the analysis. The results of the sensitivity runs are similar to those in the base specifications, for the aggregate runs and also for the NBCU-specific runs. In particular, I find that vertical integration is associated with lower prices in nearly all of the

[200] The ratings metrics include prime-time and 24-hour ratings as well as prime-time and day-time "delivery" (Nielsen defines "rating" as a measure of the average percentage of households viewing the network in an average minute and "delivery" as a measure of the average number of households viewing a network in an average minute).

regressions, whether I use DIRECTV data or SNL Kagan data, and whether I examine all three integration/dis-integration events together or focus solely on the NBCU integration event. In no case is the estimated coefficient on vertical integration positive and statistically significant, as the Plaintiff's theory of harm implies.[201]

203. I also include below the results for data sets produced by third parties. The results for Charter are given at the end of this section, with the same set of specifications as for DIRECTV. I reach the same conclusions from the Charter data as I did from the DIRECTV and SNL Kagan data.[202]

Table 14: Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, DIRECTV/Fox, and TWC/TWI, Panel Data Regression

		(1)	(2)	(3)	(4)
		With Ratings		Without Ratings	
		Weighted	Unweighted	Weighted	Unweighted
DIRECTV 2008/2017	Est. Impact (approx. pct. effect)	-0.131*	-0.128**	-0.120*	-0.113**
	Standard Error	(0.051)	(0.027)	(0.048)	(0.028)
Kagan 2008-2017	Est. Impact (approx. pct. effect)	-0.035	-0.024	-0.034	-0.043**
	Standard Error	(0.028)	(0.012)	(0.027)	(0.014)

Notes:
Standard errors in parentheses, clustered by owner.
* p<0.05, ** p<0.01
Sources: DIRECTV: Rates 2008-2017. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

201 This conclusion is unchanged if I use the top 100 networks.

202 This conclusion is unchanged if I use the top 100 networks.

Table 15: Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, Panel Data Regression

		(1)	(2)	(3)	(4)
		With Ratings		Without Ratings	
		Weighted	Unweighted	Weighted	Unweighted
DIRECTV 2010/2017	Est. Impact (approx. pct. effect)	-0.047	-0.123	-0.027	-0.084
	Standard Error	(0.095)	(0.068)	(0.055)	(0.063)
Kagan 2010-2017	Est. Impact (approx. pct. effect)	-0.028	0.007	-0.021	0.033
	Standard Error	(0.024)	(0.037)	(0.027)	(0.037)

Notes:
Standard errors in parentheses, clustered by owner.
* p<0.05, ** p<0.01
Sources: DIRECTV: Rates 2008-2017. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

204. Table 16 shows weighted and unweighted sensitivities for the cross-sectional regressions. I find that three of the four coefficients on integration are negative, while the fourth is positive though statistically insignificant. In no case is the coefficient on vertical integration positive and statistically significant as the Plaintiff's theory of harm implies.[203]

Table 16: Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, <u>Cross Sectional Regression</u>

		(1)	(2)
		Weighted	Unweighted
		Top 50	Top 50
DIRECTV 2017	Est. Impact (approx. pct. effect)	-0.044	0.047
	Standard Error	(0.093)	(0.076)
Kagan 2017	Est. Impact (approx. pct. effect)	-0.146*	-0.108
	Standard Error	(0.066)	(0.066)

Notes:
Standard errors in parentheses, clustered by owner.
* p<0.05, ** p<0.01
Sources: DIRECTV: Rates 2008-2017. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

203 This conclusion is unchanged if I use the top 100 networks.

Table 17: Panel Data and Cross Section Regressions using Charter Data

Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, DIRECTV/Fox, and TWC/TWI, <u>Panel Data Regression</u>
Charter 2009-15

	(1)	(2)	(3)	(4)
	With Ratings		Without Ratings	
	Weighted	Unweighted	Weighted	Unweighted
Est. Impact (approx. pct. effect)	-0.128	-0.060	-0.119	-0.041
Standard Error	(0.222)	(0.128)	(0.208)	(0.106)

Notes:
Standard errors in parentheses, clustered by owner
* p<0.05, ** p<0.01
Sources: Charter: Rates 2009-2015. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, <u>Panel Data Regression</u>
Charter 2010-15

	(1)	(2)	(3)	(4)
	With Ratings		Without Ratings	
	Weighted	Unweighted	Weighted	Unweighted
Est. Impact (approx. pct. effect)	-0.112	-0.066	-0.049	-0.032
Standard Error	(0.061)	(0.086)	(0.055)	(0.089)

Notes:
Standard errors in parentheses, clustered by owner
* p<0.05, ** p<0.01
Sources: Charter: Rates 2009-2015. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

Effect on Network Affiliate Fees of the Vertical Integration of Comcast/NBCU, <u>Cross Sectional Regression</u>
Charter 2015

	(1)	(2)
	Weighted	Unweighted
	Top 50	Top 50
Est. Impact (approx. pct. effect)	-0.290**	-0.170*
Standard Error	(0.049)	(0.062)

Notes:
Standard errors in parentheses, clustered by owner
* p<0.05, ** p<0.01
Sources: Charter: Rates 2009-2015. SNL Kagan "TV Network Summary: Financial and Ratings," pulled Jan 11, 2018.

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