

Markham C. Erickson  
202 429 8032  
merickson@steptoe.com

**Steptoe**  
STEPTOE & JOHNSON LLP

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

**REDACTED – FOR PUBLIC INSPECTION**

January 15, 2016

**BY ECFS**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

**Re: Notice of *Ex Parte* Letter, Applications of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership for Consent to Assign or Transfer Control of Licenses and Authorizations, MB Docket No. 15-149**

Dear Ms. Dortch:

In accordance with the Protective Order in the above-captioned proceeding, INCOMPAS submits the attached public, redacted version of its *ex parte* letter dated January 15, 2016 and accompanying Declaration from Dr. David S. Evans. Redacted Highly Confidential information is denoted with “{{BEGIN HCI END HCI}}” and redacted Confidential Information is denoted with “{BEGIN CI END CI}.” The designated Highly Confidential Information was taken from or derived from Highly Confidential Information in the Applicants’ filings. The designated Confidential Information is information not otherwise available from publicly available sources and is the type of information subject to projection under the Protective Order. Highly Confidential and Confidential versions of this letter are being simultaneously filed with the Commission.

Please contact me with any questions.

Respectfully submitted,



Markham C. Erickson  
*Counsel for INCOMPAS*

Enclosures

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

**REDACTED – FOR PUBLIC INSPECTION**

January 15, 2016

**By ECFS**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

**Re: Applications of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership for Consent to Assign or Transfer Control of Licenses and Authorizations, MB Docket No. 15-149**

Dear Ms. Dortch:

In response to Petitions to Deny in the above-referenced transaction (“Transaction”), Applicants proposed a new theory to support a newly claimed public interest benefit. Specifically, Charter’s economist, Professor Michael Katz, concluded that the increased scale from the proposed merger would enable New Charter to realize substantial cost savings at the expense of video programmers.<sup>1</sup> Though video programmers undoubtedly would disagree that this is a benefit of the Transaction, Professor Katz further claimed that the video programmers’ losses would result in New Charter’s subscribers’ gains. He theorized that New Charter likely would pass-through a portion<sup>2</sup> of its economic gains to its subscribers, who would save {{BEGIN HCI  
END HCI}} per year and up to {{BEGIN HCI  
END HCI}} by 2018.<sup>3</sup> Neither Professor Katz nor the Applicants meaningfully

---

<sup>1</sup> See Reply Declaration of Michael L. Katz, *Charter-TWC-BHN: Efficiencies Analysis*, MB Docket No. 15-149, at 21 (Nov. 2, 2015) (“Katz Declaration”) {{BEGIN HCI  
END HCI}}.

<sup>2</sup> Professor Katz claims that it is likely that New Charter would pass through approximately 50 to 60 percent of its economic gains to subscribers. Katz Declaration ¶ 65.

<sup>3</sup> *Id.* ¶ 25 n.23; *id.* ¶ 65.

**REDACTED – FOR PUBLIC INSPECTION**

Marlene H. Dortch

January 15, 2016

Page 2

addressed INCOMPAS's argument that this same dynamic would harm competition in the local markets for broadband Internet access services.<sup>4</sup>

Professor Katz provides little empirical evidence for the claimed pass-through. One of his main sources of evidence, and the only one that directly supports his estimate, is an econometric study from 1997 ("Ford and Jackson Study"), which found that lower programming costs are passed through to consumers in the form of lower prices with a pass-through rate of 50 percent.<sup>5</sup>

The reliance upon the Ford and Jackson Study is misplaced. Ford and Jackson clearly support INCOMPAS's conclusion about the perverse effects of such pricing power on competition and the resulting consumer welfare deficit from such harm to competition. The authors conclude clearly and persuasively that the programming cost reductions from a merger could *decrease* consumer welfare because the benefits from the partial pass-through of cost savings are outweighed by the costs of reduced competition resulting from the heightened barriers to entry.<sup>6</sup>

The Ford and Jackson Study makes the following observations:

- "[B]oth wireline and wireless entrants will have considerable difficulty competing with incumbent monopolists privileged by substantial discounts on programming . . . if these discounts are substantial, the large MSOs may be able to effectively impede competitive entry via a first-mover, absolute cost advantage."<sup>7</sup>
- "[T]he evidence presented here in no way constitutes proof that increasing ownership concentration and vertical integration have no anticompetitive effects on cable television markets. . . . [C]oncentration [by large MSOs] can result in substantial programming discounts. These discounts are large enough

---

<sup>4</sup> See INCOMPAS, Petition to Deny, MB Docket No. 15-149 at 5-13 (Oct. 13, 2015); Reply of INCOMPAS, MB Docket No. 15-149 at 8-13 (Nov. 12, 2015).

<sup>5</sup> See Katz Declaration ¶ 50 (citing George S. Ford and John D. Jackson, *Horizontal Concentration and Vertical Integration in the Cable Television Industry*, 12 Review of Industrial Organization No. 4 at 514 (Aug. 1997)).

<sup>6</sup> See Ford & Jackson at 516.

<sup>7</sup> Ford & Jackson at 504.

REDACTED – FOR PUBLIC INSPECTION

Marlene H. Dortch

January 15, 2016

Page 3

so as to potentially constitute an absolute cost advantage for incumbent cable systems vis-à-vis potential entrants and thus a barrier to entry. If so, welfare calculations must take into account the effect on competitive entry. Such entry has been found to have substantial welfare enhancing proper- ties through lower prices and higher quality of service. Since direct competition between cable companies has been shown by numerous studies to reduce basic cable prices by over 20 percent, the relatively modest increase in social welfare due to increased concentration (derived from our estimates) suggests that limits on such concentration may be warranted.<sup>8</sup>

INCOMPAS today files an expert declaration from Dr. David Evans, in which Dr. Evans agrees with Professor Katz that the merger would give New Charter the ability to extract substantial price savings from video programmers.<sup>9</sup> Dr. Evans's report demonstrates, however, that Professor Katz's claim that the merger would result in a net efficiency gain is wrong. In fact, Professor Katz's evidence, correctly interpreted under standard approaches to merger analysis, demonstrate that the proposed transaction would harm competition in the provision of video programming and in the provision of local broadband. Although Dr. Evans disputes Professor Katz's pass-through analysis, he concludes that the Transaction as a whole still would result in a significant increase in prices as a result of the horizontal combination of the Applicants.<sup>10</sup> Dr. Evans provides further evidence to demonstrate that even if he accepts the 50 to 60 percent pass through claimed by Professor Katz, the horizontal combination would significantly increase the total price that video programmers and households pay.<sup>11</sup>

Our analysis *per se* eliminates a major claimed public interest benefit of the Transaction. Without the ability to claim this benefit, the Applicants are left only with the non-merger specific benefits they claim in their Application. The deficiency of those claimed benefits has been noted in the docket.<sup>12</sup>

---

<sup>8</sup> Ford & Jackson at 516-17.

<sup>9</sup> See David S. Evans, *Economic Analysis of the Impact of The Proposed Merger of Charter, Time Warner Cable, And Bright House Networks on Broadband Entry and Competition*, MB Docket No. 15-149, ¶ xx (Jan. 15, 2016) ("Evans Declaration").

<sup>10</sup> See Evans Declaration ¶¶ 16-20, 29, 35-68.

<sup>11</sup> See *id.* ¶¶ 12, 20.

<sup>12</sup> See, e.g., Letter from Pantelis Michalopoulos to Marlene H. Dortch (Nov. 30, 2015) (alleged benefits of Transaction to Bright House Network subscribers are not transaction specific); Letter  
(Continued...)

**REDACTED – FOR PUBLIC INSPECTION**

Marlene H. Dortch

January 15, 2016

Page 4

Dr. Evans further claims that in addition to this significant price increase, the merger would likely harm competition in the market for broadband Internet access services. New Charter's increased market power over video programmers resulting from the merger would discourage entry and expansion by smaller broadband providers that would otherwise compete against Charter or Time Warner Cable for customers.<sup>13</sup>

The Commission correctly has made broadband competition and increased broadband access a top priority.<sup>14</sup> Indeed, the increasing value of broadband has resulted in a few companies that have cautiously begun to invest in new fiber to compete with dominant cable systems. This dynamic already has forced incumbent broadband providers to improve their offerings, by dramatically increasing broadband speeds. The proposed Transaction threatens to chill further broadband competition in roughly one third of the country.<sup>15</sup>

---

from Pantelis Michalopoulos to Marlene H. Dortch (Jan. 4, 2016) (Time Warner Cable had pre-merger plans to complete its all-digital rollout and increase broadband speeds).

<sup>13</sup> See Evans Declaration ¶¶ 26, 29, 69-106.

<sup>14</sup> *Hearing on Oversight of the Federal Communications Commission: Before the Subcomm. on Comm'cns and Tech. Comm. on Energy and Commerce*, 114 Cong. 4 (2014) (statement of FCC Chairman Tom Wheeler) ("To enable greater deployment, the Commission has recognized the importance of 'removing barriers to investment and lowering the costs of broadband build-out.'"); Remarks of FCC Commissioner Ajit Pai on Receiving the 2015 Jerry B. Duvall Public Service Award, Phoenix Center: Annual U.S. Telecoms Symposium, at 1, 4 (Dec. 1, 2015) ("Competition in the communications marketplace is a force to be reckoned with."); Remarks of FCC Commissioner Ajit Pai, NCTA: Telecom Executive Policy Summit, at 1 (Nov. 16, 2015) ("[O]ne of my top priorities as a Commissioner has been to extend digital opportunities to all Americans.").

<sup>15</sup> Approximately 101 million individuals, accounting for roughly one-third of all US citizens, would be in census blocks served by ISPs operated by the Applicants that offer broadband download speeds of at least 10 Mbps. See Evans Declaration at ¶ 33

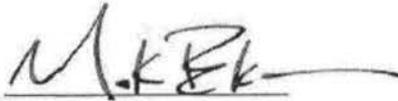
**REDACTED – FOR PUBLIC INSPECTION**

Marlene H. Dortch  
January 15, 2016  
Page 5

\* \* \*

We respectfully urge the Commission to deny the Transaction, as proposed.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. C. Erickson', with a horizontal line extending to the right.

Markham C. Erickson  
*Counsel for INCOMPAS*

Enclosure

CC: Jon Sallet  
Owen Kendler  
Elizabeth McIntyre

**REDACTED – FOR PUBLIC INSPECTION**

**ECONOMIC ANALYSIS OF THE IMPACT OF THE PROPOSED MERGER OF  
CHARTER, TIME WARNER CABLE, AND BRIGHT HOUSE NETWORKS  
ON VIDEO PROGRAMMING PRICES AND BROADBAND ENTRY AND  
COMPETITION**

**EVANS DECLARATION I**

**David S. Evans**

**January 15, 2016**

**Contents**

I. Introduction and Overview of Declaration..... 3

    A. Qualifications ..... 3

    B. Assignment..... 5

    C. Principal Findings..... 5

        1. The Transaction Would Raise Prices Paid for Distributing Video Programming..... 8

        2. The Transaction Would Harm Broadband Competition as a Result of the  
            Increased Market Power over Video Programmers..... 11

    D. Organization of Declaration ..... 14

II. Background on Transaction and the Applicants..... 15

III. Impact of the Transaction on Access and Distribution Fees for Video Programmers ..... 17

    A. The Economics of the Relationship between MVPDs and Video-Programming  
        Providers..... 19

    B. MVPD Bargaining Power over Video Programmers ..... 25

    C. Larger MVPDs Charge Significantly Higher Access and Distribution Fees ..... 26

    D. The Unilateral Effect of the Merger on Video Programmers..... 31

IV. Impact of the Transaction on Competition in Local Broadband Markets ..... 34

    A. Market Failure in the Provision of Broadband..... 34

    B. Economics of Investments in New Broadband Plant ..... 43

    C. The Impact of the Higher Access and Distribution Fees on the Entry and Expansion  
        of Fast Broadband ..... 48

    D. Impact of Decreased Broadband Entry and Competition on Consumers..... 52

V. Charter’s Economic Analysis of the Efficiency Gains from Lower Video  
    Programming Prices ..... 55

    A. Professor Katz’s Analysis of the Economic Efficiency of the Transaction is Wrong ..... 56

    B. Professor Katz’s Analysis of Pass-Through Is Wrong..... 59

VI. Conclusion..... 64

## **I. Introduction and Overview of Declaration**

1. My name is David S. Evans, and I am an economist. This Introduction summarizes my qualifications, my assignment, and my principal findings to date.

### **A. Qualifications**

2. I am the Chairman of Global Economics Group, LLC and based in its Boston office. I am also the Executive Director of the Jevons Institute for Competition Law and Economics and Visiting Professor at the University College London, and Lecturer at the University of Chicago Law School. I have BA, MA, and Ph.D. degrees in economics, all from the University of Chicago, where I specialized in industrial organization and econometrics. My curriculum vitae is attached as Appendix A.

3. As an economist, I specialize in the field of industrial organization, which concerns the behavior of firms and their interactions, and in antitrust economics, which is the portion of industrial organization that concerns the analysis of business practices that could limit competition and harm consumers. I have a particular expertise in the study of multi-sided platforms that serve as intermediaries between several groups of customers.<sup>1</sup>

4. I have written six major books and more than 100 scholarly articles, many of which concern industrial organization and antitrust. My work has been widely read and cited.<sup>2</sup> Over

---

<sup>1</sup> My latest book (with Richard Schmalensee), *Matchmakers: The New Economics of Multisided Platforms*, will be published by Harvard Business School Press in Spring 2016.

<sup>2</sup> I am ranked among the top 3 percent of economists according to quality-weighted citations by IDEAS/Repec, which tracks publications and citations by economists worldwide. Many of my publications and citation rankings are available at <http://ideas.repec.org/e/pev9.html>. Like many social scientists, I post much of my work on the Social Science Research Network (SSRN). As of January 9, 2016, based on quality-weighted citations, I ranked 173 out of the top 30,000 social scientists globally for whom SSRN reports citation data, 82 out of the top 8,000 economics professors globally for whom SSRN reports citation data, and 6 out of the top

**REDACTED – FOR PUBLIC INSPECTION**

the last 25 years, I have taught classes on antitrust economics at Fordham University Law School, University College London Faculty of Laws, and the University of Chicago Law School. In addition, I have served on the faculty for the American Bar Association Annual Antitrust Meetings on three occasions. I also have taught various aspects of antitrust economics to judges in China and the European Union.<sup>3</sup>

5. I have provided expert consulting on antitrust and related regulatory matters since 1975 beginning with *U.S. v. IBM* on behalf of IBM and *U.S. v. AT&T* on behalf of the U.S. Department of Justice. I have testified, or submitted testimony, to courts and regulatory authorities, in the United States as well as Australia, Brazil, China, the European Union, Singapore, and Thailand. In addition, I have testified before several committees of the U.S. Congress, including the Senate Banking Committee, and the House Financial Services Committee, and the House Oversight Committee, and the U.K.'s House of Lords.

6. I have conducted research, published, or submitted testimony on industries that are relevant to the proposed merger (the "Transaction") of Charter Communications, Inc. ("Charter"), Time Warner Cable, Inc. ("TWC"), and Advance/Newhouse Partnership ("BHN or "Bright House Networks") (together, "Applicants"), including the cable television industry, the media industry, Internet Service Providers, Internet content providers, and the telecommunications industry. I have been invited to lecture on Internet-based industries by the Chinese Ministry of Industry and Information Technology, the Mexican Federal Commission

---

3,000 law professors globally for whom SSRN reports citation data. My SSRN publications are available at [http://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=268756](http://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=268756).

<sup>3</sup> In 2009 and 2010, I taught classes for judges, including basic economic principles and intellectual property, in the European Union for a program sponsored jointly by the University College London and the Toulouse School of Economics. At the request of the Chinese State Ministry of Industry and Information Technology (MIIT), in 2013 and 2014, I taught certain aspects of antitrust economics, including Internet-based and platform-based industries, to judges from the Chinese Supreme People's Court and provincial appeal courts.

## REDACTED – FOR PUBLIC INSPECTION

of Telecommunications, the U.K.'s OfCom, and the InfoComm Development Authority in Singapore.

7. I previously submitted declarations to the Federal Communications Commission in the proposed merger of Comcast Corporation and Time Warner Cable and I made presentations to the FCC staff and participated in the Economist Roundtable organized by the FCC in that transaction review proceeding.<sup>4</sup>

### **B. Assignment**

8. Counsel for INCOMPAS, a trade association for communications and technology companies, asked me to evaluate (a) whether the Transaction would result in an increase in bargaining power over video programmers and, if so, whether that increase would cause competitive harm and (b) whether Charter's claim, supported by Professor Michael Katz, that the reductions in video programming prices paid by Charter as a result of the Transaction should be counted as an efficiency because some portion of those price decreases would be passed on to subscriber households. I am not offering any opinion on any issue other than those identified above including whether the FCC should approve this Transaction.

### **C. Principal Findings**

9. I have found that the Transaction would result in a significant increase in the prices that video programmers pay for access and distribution to the households of the Applicants and that the increased market power over video programmers resulting from the Transaction would raise

---

<sup>4</sup> See David S. Evans, Economic Analysis of the Impact of the Comcast-Time Warner Cable Transaction on Internet Access to Online Video Distributors (Aug. 25, 2014) (submitted with Netflix, Inc., Petition to Deny, MB Docket No. 14-57 (Aug. 27, 2014) ("Evans Comcast Declaration"); David S. Evans, Economic Analysis of the Impact of the Comcast-Time Warner Cable Transaction on Internet Access to Online Video Distributors: Response to Opposition to Petitions to Deny and Response to Comments, MB Docket No. 14-57 (Dec. 23, 2014) ("Evans Comcast Reply Declaration"); Federal Communications Commission, Proposed Comcast-Time Warner Cable-Charter Transaction Economic Analysis Workshop, MB Docket No. 14-57 (Jan. 30, 2015).

## REDACTED – FOR PUBLIC INSPECTION

barriers to entry and reduce competition in local broadband. The Transaction would increase the prices to video programmers under (a) a standard single-sided analysis that focuses only on video programmers as purchasers of intermediation services and a (b) two-sided analysis that considers the partial pass-through of that price increase to subscriber households and the impact of the Transaction on the total price paid by video programmers and households together for intermediation services. My conclusion is based on five major specific findings.

10. First, the Applicants, like all Multichannel Video Programming Distributors (“MVPDs”), are intermediaries between video programmers and households. They provide access and distribution services that enable video programmers to reach households and for households to reach video programmers. The price for access and distribution is part of the exchange of value between MVPDs, including the Applicants, and video programmers. A higher access and distribution price paid to video programmers by MVPDs results in a lower video programming price paid by MVPDs to video programmers. Larger MVPDs pay lower prices to video programmers because the MVPDs can charge higher prices, because of increased bargaining power over video programmers. This situation is analogous to the situation the FCC addressed in the proposed merger between Comcast and Time Warner Cable in which these Internet Service Providers (ISPs) were intermediaries between Internet content providers and subscriber households.

11. Second, the Transaction would significantly increase the market power of the Applicants over the distribution of video programming to households. As a result, it would significantly increase the prices that video programmers would pay the Applicants to distribute their content to subscriber households. There is no dispute that the Transaction would significantly increase the bargaining power of the Applicants, and that they would use that

**REDACTED – FOR PUBLIC INSPECTION**

bargaining power to obtain substantially better terms from the video programmers. Unlike the proposed Comcast-TWC merger, Charter agrees that that the merger with TWC will result in a significant increase in bargaining power which would enable the merged entity to extract better terms for providing access and distribution to the Applicant's households.

12. Third, Professor Katz's claim that the merger increases economic efficiency by reducing the prices the Applicants pay for video programming is wrong. He ignores the increase in intermediation fees, for access and distribution, paid by video programmers and incorrectly claims the partial pass through of the price increase to subscriber households as a merger-specific efficiency.<sup>5</sup> In fact, based on the empirical evidence he has presented, the Transaction results in an increase in the total price paid by video programmers and households for intermediation services because the increase in the price of access and distribution to video programmers is only partly offset by a decrease in price paid by households according to his analysis. According to his analysis, the increase in the total price is the result of an increase in bargaining power from the Transaction.

13. Fourth, there is a significant market failure in the provision of local broadband service. This market failure results, in part, from the fact that broadband providers must provide video programming and compete as MVPDs, in addition to offering broadband service to attract customers. Video programming accounts for a significant portion of operating costs, and smaller MVPDs pay significantly more for video programming than larger MVPDs.

14. Fifth, the lower video programming costs for the Applicants would reduce investment in the entry and expansion of smaller broadband providers and thereby reduce competition in

---

<sup>5</sup> It would be analogous in the Comcast TWC merger to claim that one could ignore the impact of charging higher prices to Internet content providers on the grounds that some portion of those higher prices would be passed on to households.

the provision of local broadband in the areas served by the Applicants.<sup>6</sup> Recent entry into local broadband markets demonstrates that entry of additional broadband providers results in significantly lower prices and higher quality of broadband and more innovation.<sup>7</sup>

15. I thus conclude that the Transaction would harm competition in the provision of intermediation service to video programmers for access and distribution and in the provision of competitive local broadband services.

**1. The Transaction Would Raise Prices Paid for Distributing Video Programming**

16. The Applicants are MVPDs that operate cable systems in many parts of the country. MVPDs are intermediaries that provide “access and distribution services” to video programmers and a source of video programming to households. Video programmers use MVPDs to distribute their programming, including advertising, to MVPD household subscribers.<sup>8</sup> MVPDs then provide households access to that programming as part of bundles or, in some select instances, standalone video choices. An MVPD earns a margin based in large part on the difference between what it collects from its subscribers and what it pays the video programmer.

17. There is no dispute in this matter that larger MVPDs pay substantially lower prices than smaller MVPDs for video programming.<sup>9</sup> This relationship occurs because MVPDs are often the most efficient, and sometimes the only feasible, way for video programmers to reach

---

<sup>6</sup> For the purposes of this report “broadband” refers to broadband delivered over a fixed wire and does not include mobile wireless or satellite unless indicated otherwise. We report broadband use below based on download speeds of either 10 Mbps or 25 Mbps.

<sup>7</sup> See *infra* at Section IV. D (discussing beneficial effects of increased competition from new broadband entrants).

<sup>8</sup> See, e.g., Katz Declaration at ¶¶ 76 and 77, nn. 86 & 89.

<sup>9</sup> See Katz Declaration at Section II.A.1.

## REDACTED – FOR PUBLIC INSPECTION

households and for households to obtain video programming short of switching to another MVPD. Larger MVPDs can deny video programmers' access to more households and thereby impose significant harm on them.<sup>10</sup>

18. MVPDs and video programmers negotiate complex distribution contracts. The MVPDs get valuable programming for which they can charge households. The video programmers get access to those households, are able to sell advertising spots for them, and benefit from having the MVPD, in effect, collect payments for them from the households. The contracts usually result in a net payment from the MVPD to the video programmer. That net payment, however, reflects an implicit payment paid by the video programmer for access and distribution to the MVPD's households. That is, after all, what the video programmer is buying from the MVPD and is the reason larger MVPDs get lower prices, as I discuss in more detail below.

19. The Transaction would substantially increase the bargaining power of the Applicants over video programmers. In terms of MVPD subscribers, New Charter would be 57 percent larger than TWC and 302 percent larger than Charter.<sup>11</sup> New Charter would be able to *pay less*

---

<sup>10</sup> The economic logic for this statement is similar to that accepted by the FCC and the U.S. Department of Justice concerning ISPs. See Jon Sallet, General Counsel, FCC, Prepared Remarks at the Telecommunications Policy Research Conference: "The Federal Communications Commission and Lessons of Recent Mergers & Acquisitions Reviews," at 13 (Sept. 25, 2015) ("Sallet Remarks"); Bill Baer, DOJ, Keynote Address at the Future of Video Competition and Regulation Conference, (Oct. 9, 2015) ("Baer Keynote"). In his recent speech on the Comcast/TWC and ATT/DIRECTV mergers, Justice Department Assistant Attorney General Bill Baer explained, "Cable companies are essential gatekeepers to what customers watch, and how they watch it. If content companies don't think they have a way to get their product to consumers, they won't invest and won't innovate. Or if cable companies use control over the broadband pipe to increase the charges streaming services must pay to reach customers, then those new services may be less effective in competing with traditional video services." See Baer Keynote at 5. Video programmers collect revenues indirectly from households from the payments they receive from MVPDs and pay large MVPDs for access and distribution. See *infra* at Section III.A.

<sup>11</sup> MVPD subscriber counts are based on data from Public Interest Statement, MB Docket No. 15-149, Public Application of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership For Consent to the Transfer of Control of Licenses and Authorizations, June 25, 2015 at p. 29. As of 2014 Q4, TWC, Charter, and Bright House Networks had 11 million, 4.3 million, and 2 million video subscribers respectively.

**REDACTED – FOR PUBLIC INSPECTION**

to video programmers under its contracts because it would be able to *charge more* to video programmers for access and distribution. New Charter would be able to use its increased bargaining leverage to increase the access and distribution fees to video programmers substantially. Although I do not have the data to calculate this price increase with precision, a rough estimate suggests the Transaction could increase the price that video programmers pay New Charter for access and distribution by { **BEGIN CI**      **END CI** } percent.<sup>12</sup>

20. Professor Katz states that New Charter would pass through about half of the benefits it gets from its increased bargaining power to households in the form of lower prices.<sup>13</sup> If we accepted his finding<sup>14</sup> then even after accounting for the partial pass through to households, the Transaction would result in a significant increase in price charged by New Charter for video distribution. There is no basis in antitrust economics or merger analysis for the approach taken by Professor Katz, which ignores the price increase to one set of customers of an intermediary and then counts a partial offsetting price decrease to another set of customers as an efficiency gain. Under that approach, the merger to monopoly of intermediaries would be pro-competitive so long as the monopoly passes on some of its higher fees to one group of customers. Indeed, under Professor Katz's analysis, the proposed merger of Comcast and TWC would have been pro-competitive even if it was shown that the merged entity would increase prices significantly

---

<sup>12</sup> See *infra* at Section III.D.

<sup>13</sup> Katz Declaration at Section II.B.2.

<sup>14</sup> Professor Katz's analysis of the pass through to subscribers is, however, deeply flawed. His analysis depends critically on an economic model that assumes that New Charter sells a single product at a single price. In fact, the Parties offer many products, engage in product bundling of broadband, video programming and telephone services, and charge different prices based on the bundle of services provided and the household situation (including whether they have risk losing the household to a rival). I would expect that New Charter would do the same. He has not offered any reliable evidence that Charter, or the other Parties, has in fact made across-the-board price changes in response to changes in costs to the degree he claims. See *infra* at Section V.

to Online-Video Distributors (OVDs) so long as some of the price increase was passed on to households.

## 2. The Transaction Would Harm Broadband Competition as a Result of the Increased Market Power over Video Programmers

21. The higher access and distribution fee per subscriber, or lower price paid for video programming per subscriber, would increase New Charter's operating margin for video programming. That would enable New Charter to engage profitably in more aggressive strategies to deter entry and expansion by smaller, competitive broadband providers.<sup>15</sup> In particular, TWC and Charter already use their higher margins on video programming to engage in pricing and product strategies to suppress competition by new and existing broadband providers.<sup>16</sup> The Transaction would further increase those margins and enhance the ability of the Applicants to engage in these strategies.<sup>17</sup> As a result, the Transaction would stifle

---

<sup>15</sup> These smaller broadband providers include new and innovative entrants, smaller telcos, and various competitive broadband providers that are investing in fiber and in some cases offering very fast speeds. I will sometimes refer to these smaller broadband providers as broadband entrants even though some of them are incumbent firms that are replacing DSL with fiber and thereby dramatically increasing the quality of their service offerings.

<sup>16</sup> See *infra* at Section V.B. I am not asserting that Charter or TWC are currently engaging in anticompetitive strategies or would do so following the Transaction. The focus of my analysis is on the merger-specific impact of the Transaction on competition, and consumer welfare, in the related market for broadband. I show that the Transaction would enhance the ability of New Charter to engage in strategies that could reduce consumer welfare but that would not obviously violate the antitrust laws. My analysis hinges on the presence of a significant market failure in the provision of local broadband services today.

<sup>17</sup> Ford and Jackson, who Professor Katz relies on for his estimate of a 50 percent pass through rate, also raised the possibility that increased bargaining power over video programming would reduce local MVPD competition and that the harm from reduced competition could outweigh the benefit from partial pass-through of some savings ("Second, while the results of this simple welfare analysis suggest that increased ownership concentration of cable systems by large MSOs enhances social welfare, we also found that such concentration can result in substantial programming discounts. These discounts are large enough so as to potentially constitute an absolute cost advantage for incumbent cable systems vis-a-vis potential entrants and thus a barrier to entry. If so, welfare calculations must take into account the effect on competitive entry. Such entry has been found to have substantial welfare enhancing properties through lower prices and higher quality of service. Since direct competition between cable companies has been shown by numerous studies to reduce basic cable prices by over 20 percent, the relatively modest increase in social welfare due to increased concentration (derived from our estimates) suggests that limits on such concentration may be warranted. However, more evidence that such concentration does indeed restrain competitive entry is needed.") George Ford & John Jackson, "Horizontal Concentration and Vertical Integration in the Cable Television Industry," *Review of Industrial Organization*, 12

**REDACTED – FOR PUBLIC INSPECTION**

competitive broadband investment and deployment by smaller, competitive broadband providers and thereby harm broadband competition.

22. The conclusion that the Transaction would harm local broadband competition is based on five specific findings.

23. First, there is a significant market failure in the provision of local broadband services in the areas served by the Applicants. The households in what would be New Charter's footprint would have an average of only 0.9 broadband providers other than the Applicants that offer a download speed of at least 10 Mbps and on average only 0.15 alternative providers that offer the same or faster download speeds as the Applicants. Only 14.3 percent of the households in Applicants' footprint have an alternative that offers the same or faster download speeds as the Applicants. There are significant obstacles to entry and expansion of competing systems. Charter and TWC, like other large cable companies, have very low ratings for customer service compared to other U.S. companies.

24. Second, the ability of large MVPDs, which operate many local cable systems, to secure lower video programming prices through their market power over distribution increases the barriers to local broadband competition and thereby exacerbates this market failure. Broadband entrants have to offer video programming services to compete for households.<sup>18</sup> They therefore have to compete as MVPDs as well as broadband internet service providers ("ISPs"). The

---

at 517 (1997). My focus, however, is on the cross-market impact between MVPD and ISP competition while Ford and Jackson focused on the within-market competition among MVPDs.

<sup>18</sup> See Frontier Communications Corp., Response to Information Request, MB Docket No. 15-149 (Oct. 23, 2015) ("While broadband pricing is important, the ability to offer video and voice services, in tandem with high speed Internet – a "triple-play" offering – is a key competitive factor in the market for high speed Internet . . . We agree with the FCC's observation that broadband adoption increases significantly when it is offered together with video services, and that enhanced video competition and broadband deployment are interrelated."). See also, The Federal Communications Commission, "Connecting America: The National Broadband Plan," March 17, 2010, <https://www.fcc.gov/general/national-broadband-plan> ("the vast majority of consumers purchase broadband bundled with voice, video or both.").

**REDACTED – FOR PUBLIC INSPECTION**

significantly higher video programming distribution fees received, and lower video programming prices paid, by larger cable systems make it difficult for smaller, competitive broadband providers to compete for households and reduce the incentives of these smaller providers to invest in new and faster broadband plant. That is the case now in the areas served by the Applicants and as discussed below the proposed merger would significantly exacerbate this problem.<sup>19</sup>

25. Third, the Transaction would significantly decrease the video-programming prices paid, increase the implicit video-programming access and distribution fees earned, and increase the margins on video programming received by the cable systems operated by the Applicants. After the Applicants renegotiate their existing contracts, I estimate, roughly, that the Transaction would reduce the programming costs by 17.0 percent for cable systems operated by Charter and 4.3 percent for cable systems operated by TWC or Bright House Networks.<sup>20</sup>

26. Fourth, the Transaction would reduce the incentives for smaller broadband providers to compete in local areas served by cable systems operated by the Applicants through, in particular, investing in new competitive fiber that meets or exceeds the broadband speeds of the Applicants. The incentives to invest in fiber pre-Transaction are low because of the video-programming cost advantage held by each of the merging Applicants. The Transaction would further reduce this and likely deter smaller, competitive broadband providers from entering new areas and laying new fiber.<sup>21</sup>

---

<sup>19</sup> See *infra* at Section IV.

<sup>20</sup> As I discuss below, at Section III.C, about {{BEGIN HCI      END HCI}} percent of the contracts, weighted by revenue, will come up for renewal in {{BEGIN HCI      END HCI}} and almost all within {{BEGIN HCI      END HCI}} years.

<sup>21</sup> See *infra* at Section III.C.

27. Fifth, by suppressing competition the Transaction would, as a result of deterred entry and expansion, likely result in households in local areas served by the Applicants having slower broadband, facing higher prices, getting poorer service, and having no equal or better alternative to the provider operated by one of the Applicants. Where entry has taken place households have received much faster and more innovative broadband service. Moreover, entry has forced large national cable systems to invest in and offer much faster broadband service.<sup>22</sup>

28. The FCC should consider the possible adverse effect of the Transaction on competition in the provision of local broadband in the areas served by New Charter in evaluating whether the Transaction is in the public interest. New Charter would account for 19.4 million of the 92.9 million (21 percent) broadband ISP subscribers in this country.<sup>23</sup> Furthermore, in areas where New Charter offers broadband download speeds at 10 Mbps or greater, 22.5 percent of the population does not have access to an alternative broadband provider and only 14.3 percent of the population has access to a broadband provider with equal or faster speeds.

#### **D. Organization of Declaration**

29. This declaration consists of four main sections in addition to this Introduction. Section II presents background on the Applicants, their products, and their pricing strategies that I rely on in the subsequent sections. Section III shows that the Transaction would result in a significant increase in the prices that video programmers pay for distribution to MVPD

---

<sup>22</sup> See *infra*, at Section IV.D.

<sup>23</sup> As of 2014 Q4, the top cable and telephone companies had 87,340,878 broadband subscribers, which represented 94% of all internet subscribers. Therefore, there were roughly 92.9 million internet subscribers in 2014 Q4 ( $87,340,878 / 0.94 = 92,915,828$ ). New Charter would have 19.4 million of the 92.9 million broadband subscribers in the country, giving it a 21 percent share of all broadband subscribers, based on publicly available data ( $19,400,000/92,900,000 = 0.21$ ). See Charter Communications Inc. Public Interest Statement, In the Matter of Public Application of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership For Consent to the Transfer of Control of Licenses and Authorizations, June 25, 2015 at 29; Leichtman Research Group, “Research Notes 1Q 2015,” [http://www.leichtmanresearch.com/research/notes03\\_2015.pdf](http://www.leichtmanresearch.com/research/notes03_2015.pdf).

households. Section IV shows that the Transaction would likely result in consumer harm resulting from decreased broadband investment and competition. Section V explains why Charter is wrong that lower video programming costs should be counted as an efficiency and why Professor Katz has not provided credible economic evidence of the portion of video programming cost savings that Charter would pass through to consumers. Section VI makes brief concluding remarks.

30. My analysis is ongoing, and I reserve the right to supplement my analysis. The fact that I have not responded to claims made by Charter or its economists does not mean that I agree with those claims.

## **II. Background on Transaction and the Applicants**

31. The Transaction would merge Charter Communications, Time Warner Cable, and Bright House Networks.<sup>24</sup> Each entity provides broadband service operating as an ISP; video programming operating as an MVPD; and Voice-over-IP (VoIP) telephone service. Each entity offers bundles of the various services, including stand-alone broadband and stand-alone video programming, at various prices depending on the broadband speed and the video channels and options included.

32. The proposed merged entity has been referred to as New Charter in these proceedings. Table 1 shows the number of broadband and MVPD subscribers for each system in 2014 Q4 and the ranks of each system among all wired broadband providers in terms of number of

---

<sup>24</sup> Bright House Networks has a relationship with TWC under which TWC negotiates with video programmers on behalf of both companies. *See* Application at 12; *See* Katz Declaration at fn 114 (“With respect to Bright House’s video services, Bright House has the contractual right to rely on TWC to purchase third-party programming and routinely takes advantage of that opportunity with respect to cable programming networks and many broadcast stations.”). Therefore, when I discuss the price of video programming below my references to TWC also refer to Bright House Networks.

subscribers. New Charter would be the second largest wired ISP in the country and the third largest MVPD.<sup>25</sup>

**Table 1: New Charter U.S. Video and Internet Subscriber Rank**

Company	Video Subscribers		Internet Subscribers	
	Number of Subscribers	Rank	Number of Subscribers	Rank
Time Warner Cable	11,000,000	4	12,300,000	3
Bright House Networks, LLC	2,000,000	7	2,100,000	8
Charter	4,300,000	5	5,100,000	6
New Charter	17,300,000	3	19,400,000	2

Sources: Charter Communications Inc. Public Interest Statement, In the Matter of Public Application of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership For Consent to the Transfer of Control of Licenses and Authorizations, June 25, 2015 at p. 29; Leichtman Research Group, “Research Notes 1Q 2015,” [http://www.leichtmanresearch.com/research/notes03\\_2015.pdf](http://www.leichtmanresearch.com/research/notes03_2015.pdf);

33. The Applicants face limited competition in the provision of local broadband service. I have examined the alternatives available to individuals in the census blocks served by each of the Applicants as of December 31, 2014 and report the results in Table 2.<sup>26</sup> Individuals in their service areas have an average of about 0.89 choices of a broadband provider in addition to the Applicants with a broadband download speed of at least 10 Mbps.<sup>27</sup> Almost all individuals lack access to an alternative broadband provider that offers an equal or faster download speed. The alternative provider is usually a telco provider offering DSL or a slower fiber offering than one

<sup>25</sup> Post-transaction, New Charter will be the second largest wired ISP, trailing only Comcast, which had 22 million broadband subscribers in 2014 Q4, and the third largest MVPD behind Comcast and DirecTV, which had 22 million and 20 million subscribers respectively in 2014 Q4.

<sup>26</sup> Broadband provider counts are based on the FCC and NTIA’s broadband availability data. See Federal Communications Commission, “Broadband Deployment Data from FCC Form 477,” <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>; National Telecommunications and Information Administration, “National Broadband Map Datasets,” <http://www2.ntia.doc.gov/broadband-data>. Appendix B describes my methodology and data sources in detail.

<sup>27</sup> If we limited attention to census blocks with access to broadband speeds at the FCC’s current benchmark, individuals in the New Charter service areas have an average of about 0.34 broadband providers in addition to the merging party. The FCC’s current broadband benchmark speeds are 25 megabits per second (Mbps) for downloads and 3 Mbps for uploads. See FCC, “2015 Broadband Progress Report,” (Feb. 4, 2015), <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2015-broadband-progress-report>.

of the merging parties. Approximately 101 million individuals, accounting for roughly one-third of the US population, would be in census blocks served by ISPs operated by the Applicants that offer broadband download speeds of at least 10 Mbps.

**Table 2: Population Weighted Average Number of Competing ISPs in Census Blocks Served by Each of the Applicants**

<b>Company</b>	<b>Average Number of Competing ISPs</b>	<b>Average Number of Competing ISPs with Equal or Faster Download Speeds</b>
Time Warner Cable	0.89	0.16
Bright House Networks	0.97	0.01
Charter	0.87	0.17
New Charter	0.89	0.15

34. Each of the Applicants is the dominant provider of broadband and MVPD services in most of the geographic areas they serve. The three systems do not operate, with minor exceptions, in each other’s territories and therefore do not compete directly with each other for household subscribers.<sup>28</sup> As a result, the Transaction, by itself, does not directly alter competition among the Applicants for households served by the Applicants.

### **III. Impact of the Transaction on Access and Distribution Fees for Video Programmers**

35. The agglomeration of household subscribers across the Applicants’ service areas into a much larger entity does, however, enhance the bargaining position of New Charter (relative to that of each Applicant as they are organized today) over video programmers that want to reach

---

<sup>28</sup> See Letter from John L. Flynn, Charter Communications, Inc., to Marlene H. Dortch, FCC, MB Docket No. 15-149, at 1-2 (July 2, 2015).

**REDACTED – FOR PUBLIC INSPECTION**

MVPD subscribers and Internet content providers that want to reach broadband subscribers.<sup>29</sup>

There appears to be no dispute that the Transaction, as a result of the increased size of the Applicant's combined systems, would significantly increase the bargaining power of New Charter over video programmers, and that the increased bargaining power would enable New Charter to secure significantly lower prices for video programming.<sup>30</sup>

36. That decrease in the prices paid to video programmers results from an increase in the access and distribution fee that video programmers pay to New Charter. The Transaction would therefore result in a significant increase in the price of video programming distribution charged by the Applicants to reach their household subscribers. Charter agrees that only a portion of that price increase would be passed on to subscriber households so that the overall price of providing access and distribution services to video programmers and households combined would increase as well.

37. Part A shows that the video programmers pay MVPDs for access and distribution to households and that this access and distribution fee is reflected in the net price that MVPDs pay video programmers. Part B explains why an increase in control over households enables larger MVPDs to demand and obtain higher access and distribution fees. Part C summarizes the evidence that large MVPDs pay significantly lower prices for video programming and implicitly earn significantly higher access and distribution fees. Part D explains why this

---

<sup>29</sup> Although the precise details differ, the increased bargaining power over video programmers is analogous to the increased bargaining power over Internet content providers that U.S. Department of Justice and FCC considered in the proposed merger of Comcast and TWC. *See* Sallet Remarks at 8-9, 10-14; Baer Keynote at 3-5. I analyzed the horizontal effect of the Comcast and TWC merger on edge providers in several submissions to the FCC. *See* Evans Comcast Declaration at 12-17, 52-99; Evans Comcast Reply Declaration at iii-v; 59-70, 70-88.

<sup>30</sup> *See* Katz Declaration at pp. 9-29. Charter and INCOMPAS agree that the merger will enhance the bargaining position of the Applicants and result in lower video programming costs. To my knowledge, there is no dispute over this in the submissions to date. *See, e.g.*, INCOMPAS, Petition to Deny, MB Docket No. 15-149, at 8-13 (Oct. 13, 2015); INCOMPAS, Reply, MB Docket No. 15-149, at 12 (Nov. 12, 2015); Letter from Markham C. Erickson, Counsel to INCOMPAS, to Marlene H. Dortch, FCC, MB Docket No. 15-149, at 1-2 (Dec. 4, 2015).

amounts to a significant increase in price and substantial lessening of competition in video programming distribution under either a traditional single-sided merger analysis or a two-sided platform analysis.

**A. The Economics of the Relationship between MVPDs and Video-Programming Providers**

38. Video-programming costs include licensing for a wide variety of content types that are often referred to as linear programming. These include among others: (1) local broadcast stations such as WBZ in Boston offering variety of content; (2) cable programming networks offering a variety of content such as Fox News (live news content), ESPN (live sports and commentary), and USA (prerecorded and syndicated content); and (3) premium and pay-per-view channels such as HBO. Video programming also includes the content for video on-demand-services, including TV series, movies, and some live sporting events. Video programmers typically make money from fees paid by MVPDs that are proportional to the number of subscribers who have access to their programming and from advertising that they insert at various points in the programming.<sup>31</sup>

39. Video programmers are interested in maximizing the size of the audiences for their programs and reaching the most valuable demographics for advertisers. They value having their programming placed in popular tiers, on a low channel number, and near other desirable

---

<sup>31</sup> See Katz Declaration at 10 (“Content costs are determined as a result of negotiations between a programmer and a video service provider that wants to transmit the content to its customers. For a multichannel video programming distributor (“MVPD”), the license fees usually take the form of a per subscriber, per-month payment from the MVPD to the programmer”). *Id.* At pp. 10-11 (“service provider’s profits decline to the extent that it loses subscribers and advertising revenues when it cannot transmit the programming.”)

**REDACTED – FOR PUBLIC INSPECTION**

channels. They also value having their programming distributed to geographic areas or demographic groups that are more desirable to them.<sup>32</sup>

40. Video programmers have various ways of distributing their programming including increasingly over the Internet through streaming. However, although streaming is increasing, the primary way that American households obtain linear programming is through wired or satellite MVPDs. According to eMarketer, as of the end of 2015, there were 100.7 million pay-TV households, compared to 4.9 million cord-cutting households and 15.9 million cord-never households. It projected that by the end of 2019, the number of pay-TV households would remain above 96.4 million, while the number of cord-cutter households and cord-never households would rise to only 8.4 million and 19.8 million, respectively.<sup>33</sup>

41. Video streaming services are partial substitutes for the distribution of linear programming at this time. For example, a 2013 survey by eMarketer found that 37 percent of U.S. Internet users strongly disagreed with the question “Would you consider Replacing Cable TV with a Streaming Media Subscription in 2013,” while 21 percent of respondents somewhat disagreed. A recent study by Leichtman Research found that the percentage of households that subscribe to pay-TV service was higher in 2015 compared to 2005. It noted, “[t]he misdirection that people take with cord cutting is the idea that there's been a significant acceleration.”<sup>34</sup> As a

---

<sup>32</sup> See Katz Declaration at ¶¶ 29-30; SNL Kagan “Economics of Basic Cable” December 4, 2014 at p. 93 (“ESPN's advertising revenues benefit largely from the network's exclusive sports content, which draws the coveted demographic group of males aged 18 to 49.”).

<sup>33</sup> eMarketer, “Americans Cutting the Cable TV Cord at Increasing Pace,” Dec. 10, 2015, <http://www.emarketer.com/Article/Americans-Cutting-Cable-TV-Cord-Increasing-Pace/1013327>.

<sup>34</sup> Ad Week, “With So Many Americans Dropping Cable, Will Cord Cutting Doom TV as We Know It? Observers argue the pace of change is greatly exaggerated,” October 27, 2015, <http://www.adweek.com/news/television/so-many-americans-dropping-cable-will-cord-cutting-doom-tv-we-know-it-167749>.

**REDACTED – FOR PUBLIC INSPECTION**

result, MVPDs remain important avenues of distribution for video programmers and a major source of programming for many households.

42. MVPDs and video programmers enter into complex contracts that govern the distribution of video programming and the intermediation services received by the video programmers.<sup>35</sup> Typically, the exchange of value between MVPDs and video programmers involves the following terms. The MVPD pays the video programmer fees based on the number of individuals who have access to the video programmer's programming.<sup>36</sup> The video programmer has the ability to insert advertisements into that programming and earn the revenue from selling those spots.<sup>37</sup> And sometimes the MVPD gets the ability to insert advertisements into spots and earn some of that revenue. As a result of these contract terms, the MVPDs typically pay video programmers.

43. {{ BEGIN HCI

---

<sup>35</sup> See Katz Declaration, ¶ 29.

<sup>36</sup> See *Id.* at p. 14 (“Content costs are determined as a result of negotiations between a programmer and a video service provider that wants to transmit the content to its customers. For an MVPD, the license fees usually take the form of a per subscriber, per-month payment from the MVPD to the programmer”). {{BEGIN HCI

END HCI }}

<sup>37</sup> { BEGIN CI

END CI }

<sup>38</sup> Katz Declaration at ¶ 30.

END HCI }}<sup>39</sup>

44. As these contract terms indicate, MVPDs, including Charter and TWC, provide access and distribution services to video programmers. They assist the video programmers in securing viewers for their programs and the embedded advertisements. They collect money from their subscribers on behalf of the video programmers. Roughly speaking, the MVPD makes a margin on the difference between what it charges households and what it pays video programming providers plus maybe some advertising revenue for spots the MVPD sells.<sup>40</sup> MVPDs carefully track the average revenue per subscriber and the average video programming cost per subscriber. That business model is common for distributors and other intermediaries.<sup>41</sup>

45. The fact that Professor Katz refers to this economic relationship, on occasion, as the purchase of “video programming distribution rights” doesn’t change the reality of what is going on. As his own description makes clear<sup>42</sup> the video programmers use MVPDs as intermediaries that can connect them with households and pay them for promoting their programs. The video-programmer and the household have a relationship. People watch A&E, not Charter, and

---

<sup>39</sup> Id.

<sup>40</sup> More precisely the MVPDs’ expected margin per subscriber for a video programming contract is the difference between the incremental revenue from including the video programming in its packages and the incremental costs of that programming.

<sup>41</sup> It is a standard model for multi-sided platforms. See David Evans and Richard Schmalensee (2014) “The Antitrust Analysis of Multisided Platform Businesses,” in Blair and Sokol, ed, *The Oxford handbook of International Antitrust Economics, Volume 1* at pp. 411-413 discussing Jean-Charles Rochet and Jean Tirole (2003) “Platform Competition in Two-Sided Markets” *Journal of the European Economic Association* 1(4) and Mark Armstrong (2006) “Competition in Two-Sided Markets” *Rand Journal of Economics* 37(3); Andrei Hagiu “Strategic Decisions for Multisided Platforms” *MIT Sloan Management Review*, December 19, 2013 Andrei Hagiu (2009) “Two-Sided Platforms: Product Variety and Pricing Structures,” *Journal of Economics & Management Strategy* 18(4).

<sup>42</sup> See, e.g., Katz Declaration at ¶¶ 29-31.

**REDACTED – FOR PUBLIC INSPECTION**

whether they like A&E or not has a direct impact on how much money A&E will make. This is not at all like an automobile maker buying vinyl for car seats.

46. The fact that contracts between MVPDs and video programmers result in a payment from the MVPD to the video programmers does not mean that the MVPDs are buying inputs. In fact, video programmers are paying MVPDs for collecting money from households and for providing access and distribution to the subscribers on the systems operated by the MVPDs. To see this, it is useful to consider Internet distribution of video programming.<sup>43</sup>

47. An Online Video Distributor (“OVD”) enters into a direct relationship with a household that agrees to pay the OVD \$10 per month. (The dollar figures I use here are made up just to illustrate the point.) The household then sends requests for OVD content to its ISP, which results in OVD video streams being distributed over the Internet. The ISP might charge the OVD a access and distribution fee per subscriber,  $d_S$ , of \$1 per month to obtain access to the household and distribute its content to that household; some very large ISPs have effectively done so. The ISP collects \$1 per subscriber, which is its margin  $m$ , and the OVD receives a net payment of  $\$9 = \$10 - \$1$ .

48. There is a different way this business could be organized. The ISP could provide the OVD service to its customers for \$10 and pay the OVD \$9. The ISP would get to keep  $\$1 = \$10 - \$9$ , which is its margin. That difference reflects the services the ISP provides for billing and collecting revenue from the subscriber and a possible access and distribution fee.

49. That economic result is the same as in the previous arrangement. In both cases the OVD gets a fee per subscriber,  $P_S$ , of \$9 and the ISP gets \$1. In the first case, the ISP charged the

---

<sup>43</sup> Professor Katz points to Internet distribution as a substitute for MVPD distribution. See Katz Declaration at ¶ 76. It is therefore particularly useful to compare the business models for these methods of distribution for video programmers.

**REDACTED – FOR PUBLIC INSPECTION**

access and distribution fee of  $\$l$  explicitly. In the second case, the ISP took the distribution fee as the margin between what it charged the household and what it rebated to the OVD.

50. Suppose now that larger ISPs were able to charge significantly higher access and distribution fees. In the first arrangement that would be seen directly in the access and distribution fee of  $\$d_s$  per subscriber increasing significantly with the number of subscribers. Larger ISPs would be paid more per subscriber for access and distribution. In the second arrangement this would be seen in the ISP paying a lower price to the OVD for the service and getting to keep a higher margin  $\$m$  per subscriber. Either way the larger ISP realizes a higher margin per subscriber for providing access and distribution services.

51. We know from the public record in the proposed Comcast/Time Warner Cable merger that smaller ISPs do not have sufficient market power to charge access and distribution fees to OVDs<sup>44</sup> and that larger ISPs charge greater access and distribution fees.<sup>45</sup>

---

<sup>44</sup> See David S. Evans, *Economic Analysis of the Impact of the Comcast-Time Warner Cable Transaction on Internet Access to Online Video Distributors* (Aug. 25, 2014) (submitted with Netflix, Inc., Petition to Deny, MB Docket No. 14-57 (Aug. 27, 2014) (“Evans Comcast Declaration”) at ¶ 142 (“Excluding the largest four ISPs, ISPs have not been able to impose terminating access fees on Netflix. Smaller ISPs have been unable to demand and receive payment. They continue to adhere to the zero price equilibrium.”)

<sup>45</sup> *Id.* at ¶28 (“Further research I have conducted has found consistent and substantial evidence that, in fact, larger ISPs charge higher terminating access fees on a per unit of traffic basis.”). See Evans Comcast Declaration ¶¶ 135-41 (“[L]arger ISPs have more bargaining leverage and can therefore likely demand and receive higher prices for terminating access.”); Declaration of Joseph Farrell, MB Docket No. 14-57, ¶ 13 (Aug. 25, 2014) (“Larger ISPs showed themselves more willing and able to adopt tough bargaining positions that did smaller ISPs in certain recent disputes and negotiations with Netflix and with Cogent. . . . Subsequently, Comcast, Verizon, AT&T, and TWC appear to have reached more lucrative agreements with Netflix than did the smaller ISPs. Information from Cogent also indicates that larger ISPs are less likely to pay for interconnection and likely to pay less if they do so. All this suggests that larger ISPs have greater bargaining power than smaller ISPs, as evidenced both by the adoption of tougher tactics and in the financial outcomes.”); Netflix, Inc., Petition to Deny, MB Docket No. 14-57, at 52 (Aug. 27, 2014) (“[L]arge access ISPs’ market power depends on the size of their subscriber base and also on their ability to route traffic through many settlement-free and paid interconnection points. Smaller access terminating access networks have neither the subscriber base nor the plethora of routing options to exercise power in this way.”).

See also Declaration of Joseph Farrell, DPhil, *In the Matter of Applications of Comcast Corp. and Time Warner Cable, Inc. for Consent to Transfer Control of Licenses and Authorizations*, MB Docket No. 14-57 (Aug 25, 2014), at ¶ 13 (“Third, it appears that larger ISPs showed themselves more willing and able to adopt tough bargaining positions than did smaller ISPs in certain recent disputes and negotiations with Netflix and with

52. MVPDs and video programmers follow the second model described above. The MVPD collects money from household subscribers, rebates a portion of that to the video programmers, and takes its access and distribution fees as the difference between the two. Smaller MVPDs do not have sufficient market power to charge significant access and distribution fees.<sup>46</sup> Larger MVPDs are able to charge increasingly higher access and distribution fees, which they realize as increasing differences between the incremental revenues and costs from video programming.

### **B. MVPD Bargaining Power over Video Programmers**

53. In the short run, and unless the household switches MVPDs, the MVPD is the primary way the video programming provider can reach the household and is the primary way the household can obtain access to the programming.<sup>47</sup> All else being equal, larger MVPDs can impose far greater damage to a video programmer than smaller MVPDs by denying them access to households. Video programmers have incurred fixed and sunk costs in developing the programming. For most video programming, the video programmer has limited opportunities to earn revenue from a household that it cannot access. Therefore, preventing a video programmer from obtaining access to a large number of households can impose devastating consequences.<sup>48</sup> Of course the MVPD would incur costs too if it did not carry

---

Cogent. Larger ISPs were less willing to agree to Netflix's Open Connect offer and less willing to upgrade interconnection ports with Cogent even at the risk of degrading their users' experience. Subsequently, Comcast, Verizon, AT&T, and TWC appear to have reached more lucrative agreements with Netflix than did the smaller ISPs. Information from Cogent also indicates that larger ISPs are less likely to pay for interconnection and likely to pay less if they do so. All this suggests that larger ISPs have greater bargaining power than smaller ISPs, as evidenced both by the adoption of tougher tactics and in the financial outcomes.”)

<sup>46</sup> See, *infra*, at Section IV.B.

<sup>47</sup> There is no dispute in the record that larger MVPDs pay significantly lower prices to video programmers and therefore no plausible dispute that the availability of alternative methods of distribution, including streaming, does not prevent larger MVPDs securing additional bargaining power.

<sup>48</sup> The view of how bargaining takes place is consistent with the findings of regulatory authorities on the impact of an increase in ISP size on the bargaining power over Internet content providers. See Sallet Remarks at 13 (naming increased bargaining power as “the central concern” in the Commission’s evaluation of the Comcast/TWC merger); Baer Keynote at 6 (naming the risk of “disproportionately increasing the merged firm’s

“must-have” programming. But most programming is not “must have” and would not have devastating consequences to the MVPD if it did not offer that programming.<sup>49</sup>

54. The larger MVPDs can demand lower effective prices from video programmers because, as intermediaries between the video programmers and households, they can demand higher implicit access and distribution fees. That results in lower video programming paid by the MVPD to the video programmer or, equivalently, a lower cost incurred by the MVPD for video programming.<sup>50</sup>

55. Following the arithmetic described above, the payment per subscriber by the MVPD consists of an amount that reflects the collection of payments from the MVPD’s subscribers ( $P_S$ ) per subscriber minus the access and distribution fee  $d_S$  per subscriber. The net payment per subscriber by the MVPD is  $N_S = P_S - d_S$ . Since  $d_S$  *increases* with number of MVPD subscribers, the net payment per subscriber  $N_S$  *decreases* with the number of MVPD subscribers. The “cost savings” realized by larger MVPDs results from charging higher access and distribution fees.

### C. Larger MVPDs Charge Significantly Higher Access and Distribution Fees

56. To my knowledge, all of the participants to these proceedings that have opined on the issue agree that, among the largest MVPDs, larger MVPDs pay video programmers considerably less per subscriber than smaller MVPDs. Figure 1 shows the programming costs

---

bargaining leverage” as a primary reason for taking “tough stands” on the Comcast/TWC merger); *Comcast/AT&T Order*, 17 FCC Rcd. at 23259 ¶ 36 (“MVPDs can negotiate substantial discounts based on the number of subscribers to which the network will be transmitted, as well as other factors such as the network’s placement on a particular tier. Ultimately, the more concentration among buyers, the more likely buyers will possess some market power over programming.”); *id.* at ¶ 34 (explaining “[b]ecause programmers incur high fixed costs associated with the development of programming, programming networks must have access to a critical number of viewers to avoid financial loss.”).

<sup>49</sup> For programming to have such “competitive significance,” it must feature “marquee programming, such as popular sports events.” *See Comcast/AT&T Order*, 17 FCC Rcd. at 23287 ¶ 102 n. 285.

<sup>50</sup> *See Comcast/AT&T Order*, 17 FCC Rcd. at 23259 ¶ 36.

per subscriber per month and the number of subscribers for multiple MVPDs using the data equivalent to that used by Professor Katz for his chart, updated to the year ending 2015 Q3.<sup>51</sup> I have also included Cablevision, for which SNL Kagan reports estimates of video programming costs.<sup>52</sup> The figure shows a strong negative relationship between fees per subscriber and system size.

57. I do not have detailed data on video programming contracts to conduct a careful econometric study of the relationship between MVPD size and video programming prices. However, to get a rough idea of the relationship I performed some simple univariate regression analyses.<sup>53</sup> Using a linear regression, I have found that there is a statistically significant (at the 5 percent level) negative relationship between average video programming cost per subscriber and the number of subscribers. Each additional million video subscribers is associated with a reduction of {BEGIN CI      END CI} in monthly per subscriber programming costs.

58. The regression line is shown in Figure 1, along with the point corresponding to the projected size of New Charter. Based on this regression, New Charter is projected to have monthly per subscriber programming costs of {BEGIN CI      END CI} percent less than Charter, {BEGIN CI      END CI} percent less than TWC, and {BEGIN CI      END CI} percent less than their weighted average costs.<sup>54</sup> I will use these figures to illustrate the

---

<sup>51</sup> Katz Declaration at Figure 1.

<sup>52</sup> {BEGIN CI

END CI}

<sup>53</sup> Due to the limited number of data points, this regression does not control for all potentially important covariates, such as the differing quality of video programming purchased by different MVPDs.

<sup>54</sup> I have also explored the robustness of these results to alternative functional forms. Using a semi-log model yields results that are qualitatively and quantitatively similar: the effect of video subscribers on per subscriber monthly programming costs remains negative and statistically significant at the 5 percent level, with predicted costs for New Charter of {BEGIN CI      END CI} per subscriber per month, which is {BEGIN CI

points made below; to provide more reliable econometric evidence I would need access to video programming contracts, and the detailed terms, across a large number of MVPDs spread across the size distribution of MVPDs.<sup>55</sup>

**Figure 1 {BEGIN CI**

**END CI}**

---

**END CI}** percent less than Charter **{BEGIN CI** **END CI}** percent less than TWC, and **{BEGIN CI** **END CI}** percent less than the Applicants' weighted average. I have focused on the linear functional form in order to be conservative.

<sup>55</sup> The cost data I use in this regression are calculated using the same data source and methodology as Professor Katz used in Figure 1 of his declaration, except using more recent data (programming costs for the year ending 2015 Q3). The programming cost per subscriber per month I use are slightly lower than the figures reported by Professor Katz in Table 1 of his declaration. The main difference in methodology is that Professor Katz's Table 1 divides by "equivalent basic units" rather than raw counts of video subscribers.

**REDACTED – FOR PUBLIC INSPECTION**

59. Table 3 shows the ratio of the average price per subscriber for each system relative to Cablevision. (I use Cablevision in my report as an example of a smaller MVPD, as video-programming costs for Cablevision are reported by SNL Kagan. My understanding is that smaller competitive broadband providers members have rates that are comparable to, or higher than, those of Cablevision.) Comcast, the largest MVPD, pays 28 percent less than the system with the highest costs (Cablevision). TWC pays 20 percent less and Charter 8 percent less than Cablevision.<sup>56</sup> As I explain in more detail below, the difference between the video programming prices paid by each of these large systems and the typical smaller MVPD reflects the access and distribution fee earned by that MVPD as a result of its control over access to the subscribers on its system.

**{ BEGIN CI**

**END CI }**

60. Professor Katz reports an analysis by Charter that its average per subscriber video programming costs will decrease by **{{ BEGIN HCI** **END HCI}}**.<sup>57</sup>

---

<sup>56</sup> Bright House Networks has a contractual agreement with Time Warner Cable to rely on TWC to purchase third party programming. *See supra* at fn 24.

<sup>57</sup> Professor Katz reports estimates by Charter that its average per video subscriber costs per month would decrease by **{{BEGIN HCI** **END HCI}}**. *See* Katz Declaration at Table 1. Katz reports both average



Figure 1 discussed above. Based on that analysis, New Charter would be able to secure average video programming prices that are { **BEGIN CI** **END CI** } percent lower than TWC and { **BEGIN CI** **END CI** } percent lower than Charter. Nothing I say, however, depends on these numbers precisely, only the proposition that the decline in video programming prices would be quite significant, which it clearly is.

63. The fact that New Charter would pay significantly *lower* video programming prices, because of its increased bargaining power, implies that it would charge significantly *higher* access and distribution fees because of its increased bargaining power.

#### **D. The Unilateral Effect of the Merger on Video Programmers**

64. The fact that the Transaction would lead to significantly higher access and distribution fees for the video programmers is a source of competitive concern. Distributors and intermediaries, like MVPDs, provide services that enable two different types of customers to interact with each other.<sup>60</sup> They charge for providing that service. They may collect fees from either or both customers. From the standpoint of antitrust analysis, there is no basis for considering one type of customer served by the intermediary and ignoring the other type.

65. I have calculated rough estimates of the average access and distribution fee charged by the Applicants before and after the Transaction. I estimate the average distributed fee charged before the Transaction by taking the difference between the average price per subscriber paid to video programmers for the Applicants and for Cablevision, the provider with the highest programming costs among large cable MVPDs. As I noted above the evidence suggests that

---

<sup>60</sup> For a discussion of intermediaries see David Evans and Richard Schmalensee (2014) “The Antitrust Analysis of Multisided Platform Businesses,” in Blair and Sokol, ed, *The Oxford handbook of International Antitrust Economics*, Volume 1; Marc Rysman (2009) “The Economics of Two-Sided Markets” *Journal of Economic Perspectives*, 23(3).



in a significant increase in price to video programmers that are buying access and distribution services from the Applicants.<sup>63</sup>

67. To evaluate the overall impact of the Transaction, under a two-sided platform analysis, we need to account for changes that the Applicants would make to prices charged to its subscribers.<sup>64</sup> Professor Katz claims that New Charter would pass through 50-60 percent of the higher price it receives to subscribers. Taking his figure implies that the Transaction would result in an increase in the total price paid for distribution by video programmers and households of between { **BEGIN CI** **END CI** } percent.<sup>65</sup> I therefore conclude that the Transaction would result in a significant increase in the total price charged by the Applicants for providing access and distribution to their households taking both video programmers and households into account.

68. As I discuss in more detail below, Professor Katz's approach of looking at the pass-through of a price decrease to one side of an intermediary but ignoring the price increase to the other side of the intermediary is wrong as a matter of economics and is inconsistent with standard merger practice.<sup>66</sup>

---

<sup>63</sup> See US Department of Justice and the Federal Trade Commission (2010) "Horizontal Merger Guidelines," at Section 6.1 Pricing of Differentiated Products, <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>.

<sup>64</sup> David Evans and Richard Schmalensee (2014) "The Antitrust Analysis of Multisided Platform Businesses," in Blair and Sokol, ed, *The Oxford handbook of International Antitrust Economics*, Volume 1; Eric Emch and T. Scott Thompson (2006), "Market Definition and Market Power in Payment Card Networks," *Review of Network Economics*, 5(1).

<sup>65</sup> { **BEGIN CI**

**END CI** }

<sup>66</sup> See *infra* at Section V.A.

#### **IV. Impact of the Transaction on Competition in Local Broadband Markets**

69. The Transaction would result in the Applicants securing additional market power over video programmers, significantly raising the access and distribution fees charged to video programmers, and significantly reducing New Charter's costs of video programming. That increased market power in video programming access and distribution flowing from the Transaction would have knock-on effects in the provision of local broadband. The Transaction would likely reduce actual or potential broadband competition in the local areas served by the cable systems operated by New Charter.

70. Section A discusses the well-known problems in the provision of wired, high-speed broadband in the United States. Section B examines how smaller broadband providers make decisions to invest in entry and expansion of fiber. Section C shows that the increased margins obtained by the Applicants would reduce broadband competition. Section D shows that reduced broadband competition would likely harm consumers through higher prices, slow speeds, and less innovation.

71. I do not have sufficient data to quantify the extent to which the Transaction would reduce competition by smaller broadband providers and the impact on consumer welfare. Nevertheless, I believe that the evidence presented below demonstrates that the Transaction poses a serious risk to local broadband competition, which the FCC should consider in its deliberations.

##### **A. Market Failure in the Provision of Broadband**

72. Most American households have limited choice when it comes to obtaining broadband service. They are often forced to deal with large cable systems that have persistently low

customer service ratings. Typically, they cannot readily substitute another provider if they are dissatisfied with service or prices.

73. Table 4 presents data on the state of competition for the 10 largest ISPs in the country. It reports the average number of ISPs available to households in the areas served by the largest ISPs with a broadband download speed of at least 10 Mbps and the percent of households that have access to an ISP that offers equal or superior speed. On average, for each of these ISPs, most households have less than one alternative and the preponderance of households do not have access to an ISP that offers equal speed.

**Table 4 Population Weighted Average Number of Competing ISPs in US  
Census Blocks Served by Each Company<sup>67</sup>  
{BEGIN CI**

---

<sup>67</sup> When computing the average number of competing ISPs with Equal or Faster Download Speeds, I restrict the both the ISP and competitors' offerings to those with download speeds of 10 Mbps or greater. A competitor is considered to have an equal or faster download speed if its max download speed offering is greater than or equal to the ISP's max download speed offering. Appendix B describes my methodology and data sources in detail.

**END C1}**

Sources: Charter Communications Inc. Public Interest Statement, In the Matter of Public Application of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership For Consent to the Transfer of Control of Licenses and Authorizations, June 25, 2015 at p. 29; Leichtman Research Group, “Research Notes 1Q 2015,” [http://www.leichtmanresearch.com/research/notes03\\_2015.pdf](http://www.leichtmanresearch.com/research/notes03_2015.pdf); SNL Kagan, “Top Cable MSOs,” <https://www.snl.com/interactivex/TopCableMSOs.aspx>.

74. Table 5 reports the American Customer Satisfaction Index (“ACSI”) average customer satisfaction ratings for the 10 largest national ISPs (which includes the Applicants), as well as rankings for other US industries.<sup>68</sup> The average ACSI rating for the 10 largest ISPs is 81 percent of the average ACSI rating for all industries. Excluding Comcast, Charter and TWC are the worst rated ISPs in terms of ACSI rating out of the 10 largest ISPs. These results are not surprising. The ISPs face so little competitive pressure from consumers choosing alternative providers or switching to other providers, especially ISPs that have equal or faster broadband speeds, that they make little effort to provide reasonable service to their customers. The abuse of customers by large cable systems is well known.<sup>69</sup>

---

<sup>68</sup> The American Customer Satisfaction Index is a national cross-industry measure of customer satisfaction in the United States. The Index measures the satisfaction of U.S. household consumers with the quality of products and services offered by both foreign and domestic firms with significant share in U.S. markets. Each year, roughly 70,000 customers are surveyed about the products and services they use the most. The survey data serve as inputs to an econometric model that benchmarks customer satisfaction with more than 300 companies in 43 industries and 10 economic sectors, as well as various services of federal and local government agencies. See ACSI, “About the American Customer Satisfaction Index” available at <http://www.theacsi.org/about-acsi>.

<sup>69</sup> Charter was ranked as having the third worst customer service by The Huffington Post. See “15 Companies With Impossibly Terrible Customer Service” *The Huffington Post*, January 1, 2013 (available at [http://www.huffingtonpost.com/2013/01/09/worst-customer-service\\_n\\_2434067.html](http://www.huffingtonpost.com/2013/01/09/worst-customer-service_n_2434067.html)). See also “Charter Customers Say Bigger Isn’t Likely to Mean Better,” *The New York Times*, May 27, 2015 <http://www.nytimes.com/2015/05/28/business/charter-customers-say-bigger-isnt-likely-to-mean-better.html>); CNET “Time Warner Cable gets in on the ‘curse out your customer’ trend,” February 20, 2015, <http://www.cnet.com/news/time-warner-cable-gets-in-on-the-curse-out-your-customer-trend/>; “Customers give dismal scores to TV providers,” *CNN Money*, May 20, 2014 <http://money.cnn.com/2014/05/20/news/companies/cable-customer-satisfaction/>; Ars Technica “Survey says: Comcast, Time Warner Cable customers are still the angriest,” (May 19, 2014), <http://arstechnica.com/business/2014/05/comcast-time-warner-cable-still-have-the-angriest-customers-survey-finds/>.

**Table 5 Customer Service Scores for Internet Service Providers in the United States**

<b>Company</b>	<b>ACSI 2015 Rating</b>
Comcast	56
AT&T	69
Time Warner Cable	58
Verizon	68
CenturyLink	60
Charter	57
Cox Communications, Inc.	58
Cablevision Systems Corporation	61
Frontier	61
Bright House Networks, LLC	63
All Internet Service Providers Average	63
Subscription Television Service	63
Municipal Utilities	73
Cooperative Utilities	80
Cellular Telephones	78
ACSI Average Ranking For All US Industries	75

Sources: American Customer Satisfaction Index, "Benchmarks by Company: Comcast," [http://www.theacsi.org/index.php?option=com\\_content&view=article&id=149&catid=&Itemid=214&c=Comcast&i=Internet+Service+Providers](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=&Itemid=214&c=Comcast&i=Internet+Service+Providers); American Customer Satisfaction Index, "Benchmarks by Industry," [http://www.theacsi.org/index.php?option=com\\_content&view=article&id=148&Itemid=213](http://www.theacsi.org/index.php?option=com_content&view=article&id=148&Itemid=213).

75. This situation results from significant market failures in the provision of broadband in local areas across the country, and in particular in those areas in which the Applicants operate as the dominant ISP. There are numerous barriers to infrastructure investment in broadband as the Commission has found in the last four of its reports on broadband competition.<sup>70</sup> There are five main problems:

<sup>70</sup> *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 11-121, Eighth Broadband Progress Report, 27 FCC Rcd 10342, at 10403-10, ¶¶ 139-54 (2012); Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 10-*

REDACTED – FOR PUBLIC INSPECTION

76. First, there are political and regulatory barriers to entry in local areas.<sup>71</sup> My discussions with small, competitive broadband providers made available to me by INCOMPAS (“Competitive ISPs”) has confirmed that one of the most important factors in deciding where to expand is the extent to which it is possible to surmount these non-economic barriers to entry.<sup>72</sup> The large cable companies, including the Applicants, have participated in lobbying campaigns to block entry including lobbying for legislation to do so.<sup>73</sup> For example, a lobbying group whose members include TWC wrote proposed legislation that “would make it almost impossible for cities and towns to offer broadband services to residents and would perhaps even outlaw public-private partnerships like the one that brought Google Fiber to Kansas City.”<sup>74</sup>

---

159, *Seventh Broadband Progress Report and Order on Reconsideration*, 26 FCC Rcd 8008, at 8040 ¶ 65, (2011); *Connecting America: The National Broadband Plan*, GN Docket No. 09-51, at 167-90 (2010).

<sup>71</sup> See, e.g., *Hearing on “Promoting Broadband Infrastructure Investment” Before the House Committee on Energy and Commerce Subcomm. on Comm’cns and Tech.* at 3-4 (July 22, 2015) (testimony of Michael Slinger, Google Inc.) (“One of the biggest challenges facing new broadband entrants such as Google Fiber is gaining access to utility poles and conduits.”); Declaration of John Tocciano, Google Fiber Inc., Case No. 15-1063, ¶¶ 6-10 (May 21, 2015) (attached as Exhibit 6 to Opposition of Intervenor to Petitioners’ Motion for Stay, *U.S. Telecom Assoc. v. FCC*, Case No. 15-1063 (May 22, 2015)).

<sup>72</sup> In preparing this declaration, my team and I were able to interview five small, competitive ISPs that provide bundled video programming and high-speed, broadband Internet access services. Due to marketplace sensitivities, our team agreed to keep our discussions and review of their financial data anonymous. Consequently, I have anonymized references to their data or to discussions with them by referring to them as Competitive ISPs.

<sup>73</sup> See, e.g., Jon Brodtkin, *ISP Lobby Has Already Won Limits on Public Broadband in 20 States*, ArsTechnica (Feb. 12, 2014), Big Cable may have felled Seattle’s mayor, but it couldn’t stop this Colo. Project,” *Washington Post*, November 6, 2013 (available at <http://www.washingtonpost.com/blogs/the-switch/wp/2013/11/06/big-cable-helped-defeat-seattles-mayor-mcginn-but-they-couldnt-stop-this-colorado-project/>); CityLab, “How the Telecom Lobby is Killing Municipal Broadband—Companies like Comcast are spending big bucks to prevent competition from local governments,” November 4, 2011 (available at <http://www.citylab.com/tech/2011/11/telecom-lobby-killing-municipal-broadband/420/>); Consumerist, “How ISPs “Compete” With Municipal Networks: Lobbying and Campaign Donations That Block Them,” Aug. 28, 2014 (available at <http://consumerist.com/2014/08/28/how-isps-compete-with-municipal-networks-lobbying-and-campaign-donations-that-block-them/>) <http://arstechnica.com/tech-policy/2014/02/isp-lobby-has-already-won-limits-on-public-broadband-in-20-states/>; *Municipal Broadband Roadblocks*, BroadbandNowReport, <http://broadbandnow.com/report/municipal-broadband-roadblocks/> (last visited Jan. 6, 2016).

<sup>74</sup> Arstechnica, “Who wants competition? Big cable tries outlawing municipal broadband in Kansas, January 31, 2014, <http://arstechnica.com/tech-policy/2014/01/who-wants-competition-big-cable-tries-outlawing-municipal-broadband-in-kansas/>.

**REDACTED – FOR PUBLIC INSPECTION**

77. Second, there are high sunk capital costs of entry. For example, it took Google Fiber almost twenty months to lay enough fiber to pass (but not connect) 149,000 households in Kansas City.<sup>75</sup> As the US Department of Justice observed, “[w]ithin a given locale, wireline broadband involves very substantial sunk costs to reach a customer’s location and rather low marginal costs to provide incremental services to connected households.”<sup>76</sup> Building the last mile of a broadband network involves substantial fixed costs. Unlike the middle-mile and core network, there is only one potential customer for a line going into a single home, so the investment generates no return when and if the potential customer does not actually subscribe.<sup>77</sup> Entrant ISPs would not be able to recover much of their investment if they decided to withdraw from the market because, for example, they could not operate profitable systems.

78. Third, to be viable, broadband providers have to enter the MVPD business in addition to the ISP business because most households want to purchase both video programming and Internet access together.<sup>78</sup> In addition, they are competing directly against incumbent cable operators that offer both MVPD and broadband ISP services. Competitive ISPs confirm that it is currently not possible to secure enough household subscribers for stand-alone broadband

---

<sup>75</sup>See “Will Google Fiber Waste \$28 Billion?,” *Forbes* Aug. 21, 2012 (available at <http://www.forbes.com/sites/petercohan/2012/08/21/will-google-fiber-waste-28-billion/>); TechCrunch, “Analyst: Google Will Spend \$84M Building Out KC’s Fiber Network to 149K Homes; \$11B If It Went Nationwide,” April 8, 2013 (available at <http://techcrunch.com/2013/04/08/google-fiber-cost-estimate/>).

<sup>76</sup>US Department of Justice, Ex Parte Submission of the United States Department of Justice Before the Federal Communications Commission, In the Matter of Economic Issues in Broadband Competition: A National Broadband Plan for Our Future, GN Docket No. 09-51, January 4, 2010.

<sup>77</sup>Jeffrey A. Eisenach (2012), “Broadband Competition in the Internet Ecosystem,” AEI Economic Studies, [https://www.aei.org/wp-content/uploads/2012/10/-broadband-competition-in-the-internet-ecosystem\\_164734199280.pdf](https://www.aei.org/wp-content/uploads/2012/10/-broadband-competition-in-the-internet-ecosystem_164734199280.pdf), p. 5,7; Herman Wagter, “Fiber-to-the-X: The Economics of Last-Mile Fiber,” *Ars Technica*, March 30, 2011, <http://arstechnica.com/tech-policy/2010/03/fiber-its-not-all-created-equal/>.

<sup>78</sup>See Declaration of Mark Scully, Case No. 15-1063, ¶¶ 7-8 (May 21, 2015) (“ComSpan Declaration”) (attached as Exhibit 2 to Opposition of Intervenors to Petitioners’ Motion for Stay, *U.S. Telecom Assoc. v. FCC*, Case No. 15-1063 (May 22, 2015)); *AT&T/DIRECTV Order*, ¶¶ 57-59 (“Subscribers are increasingly buying video services as part of a bundle. . . . Although the number of customers who are relying only on OVD services to access video programming is growing, it is still a small fraction of the consumers purchasing video services.”).

service to have profitable businesses. Because a substantial proportion of consumers want to purchase broadband and video together, it does not make sense for small providers to offer standalone broadband. Out of the 17 broadband providers that have made significant entry and expansion with new fiber plant in the last four years, 15 offered both broadband and video programming.<sup>79</sup>

79. Fourth, as discussed above, the incumbent cable systems typically pay significantly lower prices for video programming, largely as a result of earning higher access and distribution fees, than actual or potential rivals, including competitive ISP entrants. As a result, the incumbent cable systems can, and do, lower prices selectively to deter entry and expansion while keeping prices high enough to cover costs and earn a profit.

80. Fifth, it is difficult to persuade households to switch broadband providers because cable providers often engage in tactics to make it difficult for households to switch. As the FCC has noted, “Among the costs that consumers may experience are: high upfront device installation fees; long-term contracts and early termination fees; the activation fee when changing service providers; and compatibility costs of owned equipment not working with the new service. Bundled pricing can also play a role, as ‘single-product subscribers are four times more likely

---

<sup>79</sup> In December 2014, seventeen providers offered residential broadband fiber in footprints covering at least 0.5 percent of the US population with access to fiber-based broadband. Of these, eleven (Puerto Rico Telephone, RCN, PenTeleData, AT&T, Harbor Communications, CenturyLink, Google Fiber, Consolidated Communications, Metronet Hawaiian Telecom, and FairPoint Communications) had no fiber-to-the-home coverage in the US in December 2010. The other six (Verizon, Frontier, Cincinnati Bell, En-Touch, Electric Power Board, and West Wisconsin Telecom Cooperative) each more than doubled the population covered by their fiber-to-the-home networks between December 2010 and December 2014. Calculations based on data from National Telecommunications and Information Administration’s State Data Initiative (2014), National Broadband Map, December 31, 2010, *available at* <http://www.broadbandmap.gov/data-download>; FCC, “Broadband Deployment Data from FCC Form 477,” Version 1.0 (data as of December 31, 2014), October 16, 2015. Of these 17 fiber providers, only two (PenTeleData and Harbor Communications) do not offer video service. One of these ISPs (West Wisconsin Telecom Cooperative) relies on a third party, another small ISP, to provide video service.

to churn than triple-play subscribers.’ These costs may limit consumers’ willingness and ability to switch carriers, if such a choice is indeed available.”<sup>80</sup>

81. Historically these barriers were sufficient to discourage new broadband providers from entering and competing with the incumbents. Several developments in the last several years have emboldened firms to make investments in new fiber plant in competition with the incumbent cable systems.

82. First, there is an increased consumer demand for high-quality high-speed broadband service making it easier to persuade households to switch where a high-speed alternative provider is available. In fact, **{{BEGIN HCI**

**END HCI}}**<sup>81</sup> A White House report noted that, “In 2011, 77 percent of American Internet users ages 25 and older reported relying on the Internet for personal communications, while 66 percent relied on it for general information – and about half depended on the Internet for financial services, for consumer services and for entertainment.”<sup>82</sup> More Americans view high speed broadband Internet access as essential.<sup>83</sup>

---

<sup>80</sup> FCC, “Protecting and Promoting the Open Internet, Report and Order on Remand, Declaratory Ruling, and Order,” 30 FCC Red. 5601, 5631-32 ¶ 81 (Mar. 12, 2015).

<sup>81</sup> **{{BEGIN HCI**

**END HCI}}**.

<sup>82</sup> “Four Years of Broadband Growth,” The White House Office of Science and Technology Policy, and The National Economic Council, June 2013.

<sup>83</sup> *Id.*

**REDACTED – FOR PUBLIC INSPECTION**

83. Second, there is an increased recognition that high-quality high-speed broadband is important for local economic development. That recognition has increased municipal involvement in the development and promotion of broadband and has softened political and regulatory barriers to entry.<sup>84</sup>

84. As a result, a number of companies have cautiously increased investment in new fiber plant in competition with dominant cable systems including those operated by the Applicants. They include new players such as Google Fiber as well as smaller telcos that are replacing DSL with fiber and extending fiber into new areas. Table 6 identifies several of the major players, where they have made investments, and the extent to which they compete with the Applicants. Thus far, these smaller broadband rivals have laid new fiber plant in a relatively small portion of the United States and have garnered a very small share of household subscribers.

---

<sup>84</sup> “Community-based Broadband Solutions, The Benefits of Competition and Choice for Community Development and Highspeed Internet Access,” The Executive Office of the President, January 2015. A January 2015 report from The Office of the White House said, “hundreds of towns and cities around the country have developed their own locally-owned networks.” These communities have “developed a variety of strategies for building locally-owned broadband networks and promoting higher-speed Internet access” which has “emerged as a critical tool for increasing access, encouraging competition, fostering consumer choice, and driving local and regional economic development.” The report also said, “[t]he President is calling for the Federal Government to remove all unnecessary regulatory and policy barriers to broadband build-out and competition, and is establishing a new Broadband Opportunity Council of over a dozen government agencies with the singular goal of speeding up broadband deployment and promoting adoptions for our citizens.” *See also*, Vice Motherboard “101 Cities Have Pledged to Secure High Speed Internet,” July 9, 2015 (available at <http://motherboard.vice.com/read/101-us-cities-have-pledged-to-build-their-own-gigabit-networks>; The Verge, “FCC Overrules State Laws to Help Cities Build Out Municipal Broadband,” February 26, 2015 (available at <http://www.theverge.com/2015/2/26/8114205/fcc-decision-municipal-broadband-internet>).

{BEGIN CI

END CI}

85. These companies, as well as potential new entrants, could increase broadband competition in this country. Importantly, they have already forced large incumbent broadband providers to offer dramatically faster broadband speeds to compete.

**B. Economics of Investments in New Broadband Plant**

86. I have interviewed several competitive ISPs, and collected information from them, to determine how they make decisions to invest in new broadband plant including upgrading existing DSL plant, entering in contiguous areas, and entering into new areas. In making these investment decisions, like any business, these broadband providers project future operating margins, assess the competitive responses of other firms, and weigh risks. They make significant capital investments in new plant only when the expected rate of return is high enough to compensate for the opportunity cost of capital and for risk.

**REDACTED – FOR PUBLIC INSPECTION**

87. Video-programming costs are one of the most important determinants of whether an investment is profitable. For Competitive ISPs that also serve as MVPDs, video-programming costs, which are approximately {{BEGIN HCI            END HCI}} on average for four Competitive ISPs I have interviewed, comprise approximately {{BEGIN HCI    END HCI}} percent of the overall variable operating costs.<sup>85</sup> On a subscriber-weighted average basis, Charter and TWC video programming costs are currently {{BEGIN HCI            END HCI}}, in comparison, for an approximate {{BEGIN HCI            END HCI}} cost advantage. This cost disadvantage in the MVPD business makes it harder for small broadband entrants to compete in terms of the prices and bundles they offer households.<sup>86</sup>

88. Policy makers and industry participants have long recognized that the higher programming costs faced by entrants puts them at a competitive disadvantage.<sup>87</sup> When their video programming costs are significantly higher than the dominant cable system, Competitive ISPs face three challenges. First, the national rack prices being charged by the dominant cable system may be sufficiently low, as a result of the cable system passing on some of its higher access and distribution fees in the form of lower prices for various bundles of broadband,

---

<sup>85</sup> {{ BEGIN HCI

END

HCI }}

<sup>86</sup> Generally, merger efficiencies, including reductions in costs, are procompetitive even if they disadvantage competitors. That is not the situation posed by this merger for two reasons. First, the “cost advantage” secured by New Charter results from an increase in bargaining power over video programmers. Second, that exercise of market power exacerbates a significant market failure in a related market as a result of the integration of MVPDs and ISPs. As I discuss in this section, the combination in those factors could significantly harm consumer welfare in the provision of local broadband.

<sup>87</sup> GAO, “Video Marketplace: Competition Is Evolving and Government Reporting Should Be Reevaluated,” GAO-13-576, June 2013, <http://gao.gov/assets/660/655476.pdf>, p. 22 (“A new provider in the video market needs to secure access to a large portfolio of broadcast and cable networks to compete for customers... [N]etworks generally offer significant discounts based on the number of subscribers a provider has. Thus, a substantial disadvantage that an entrant has relative to a large provider is that it will likely have higher programming costs, making entry challenging.”).



END HCI }}<sup>90</sup>

91. In addition, TWC employed a combination of across-the-board price cuts and selective retention efforts targeted at subscribers most likely to deactivate, which harmed Competitive ISP1's profitability and significantly reduced Competitive ISP1's planned geographic expansion of a smaller provider. Section IV.C below describes this example in detail. Section IV. D provides examples of how dominant firms have responded to geographic expansion and increased speed offering by local Competitive ISPs.

92. The Transaction would concomitantly substantially increase the video-programming margin for the cable systems operated by the Applicants and increase their ability to make selective price reductions to deter entry. Table 7 shows the video margins of Charter, TWC and Bright House Networks pre-Transaction against the estimates for New Charter. New Charter's margins would increase from {{BEGIN HCI END HCI }}percent to {{BEGIN HCI END HCI }}percent. By comparison, according to four Competitive ISPs I have interviewed, the median margin was approximately {{BEGIN HCI END HCI }} percent and the average margin, weighted by 2015 video subscribers, was about {{BEGIN HCI END HCI }}percent.

---

<sup>90</sup> {{BEGIN HCI

END HCI }}

{ BEGIN CI

END CI }

93. Based on the rough estimates I reported above, as a result of increased market power over video programmers, the Applicants' average video programming cost would fall from

{ BEGIN CI

END CI },

after the renegotiation of contracts (and using current video programming costs as a benchmark). The Applicants would be able to lower prices selectively by up to { BEGIN CI

END CI } while still covering their incremental operating costs. Based on the experience of Competitive ISPS, the dominant parties would likely engage in this sort of selective price-cutting.

94. As shown in Table 8, if all of this increased margin realized by the Applicants were passed on in the form of selective price cuts in areas they face competition, the median Competitive ISP, of the four I have interviewed, would see its margin on video programming decline from negative {{BEGIN HCI    END HCI }}percent to negative {{BEGIN HCI    END HCI }}percent; the subscriber-weighted average margin would decline from {{BEGIN

HCI

END HCI}}

{{BEGIN HCI

END HCI}}

95. The Competitive ISP's ability to invest in new broadband is directly linked to its profitability. If video profitability shrinks because of targeted pricing efforts and competitive responses, this will reduce the return on investment and increase the likelihood that the ISP cannot meet its hurdle rate for investments that is necessary to cover its cost of capital and risk.

**C. The Impact of the Higher Access and Distribution Fees on the Entry and Expansion of Fast Broadband**

96. The increases in the price disparities, resulting from the merger-specific exercise of market power over video programmers, are large. They would significantly increase the abilities of the Applicants to raise barriers to entry and expansion. By increasing the profit margins earned by the Applicants, they would also increase the incentives of the Applicants to

---

<sup>91</sup> The Competitive ISPs included in the average had video subscriber bases ranging from just over a thousand to over a hundred thousand.

raise barriers to entry and expansion to protect their ISP and MVPD profits. As the expected returns of entry decline and the risks increase, I would expect that broadband providers would reduce their investments in laying new fiber and upgrading existing plant. In some local areas dominated by the cable systems operated by the Applicants, the Transaction would make it too risky or unprofitable to enter de novo, to replace DSL with new fiber, or extend fiber into adjacent areas. Given the short history of entry into local broadband markets, the heterogeneity of the circumstances of these areas (including the precise nature of the competitive response by New Charter and its local cable systems), and the lack of data, I am not able to provide a precise estimate of the amount of entry, and investment in new fiber, that would be deterred by the Transaction. However, my analysis of Competitive ISPs illustrates the potential competitive harm arising from the Transaction.

97. I have estimated that New Charter will save an additional { **BEGIN CI** **END CI**} on video programming costs relative to the subscriber-weighted average programming costs of the Applicants. The past experience of Competitive ISPs indicates that margin changes of this magnitude can have large effects.

98. As mentioned above, according to Competitive ISP1, TWC's aggressive pricing practices and targeted retention efforts negatively affected Competitive ISP1's financial performance and significantly harmed the business case for a planned fiber investment. TWC's aggressive pricing strategy included broad price reductions to attract new customers and targeted efforts to retain existing customers that were most at risk of deactivating their service to switch to the competition. In order to stay competitive, Competitive ISP1 had to match TWC's prices. Competitive ISP1 estimated that TWC's efforts amounted to a {{**BEGIN HCI** **END HCI**}} price reduction, averaged across all product offerings. Because Competitive

ISP1 matched TWC's prices, this in turn reduced the video margin of Competitive ISP1's new activations, including those it had anticipated acquiring as part of the planned expansion, by {{BEGIN HCI END HCI}}. This led to the reduction in total revenue from ISP1's current subscriber base as well as a reduction in anticipated revenue for future activations, which substantially weakened the business case for Competitive ISP1's planned investment. Such actions resulted in a {{BEGIN HCI END HCI}} percent decline in the internal rate of return (IRR) of Competitive ISP1's business, measured over a ten-year forward-looking period, and caused Competitive ISP1 to reduce its fiber build investment plans for the 2015 period, which included several thousand homes, representing approximately {{BEGIN HCI END HCI}} percent of ISP1's existing footprint.

99. Competitive ISP2 provides another example of how higher access fees would impede investment. Competitive ISP2 does not directly compete with the Applicants. Competitive ISP2's video product results in negative margins. In fact, Competitive ISP2's video ARPU is {{BEGIN HCI END HCI}} and its video-programming cost are {{BEGIN HCI END HCI}}. This leaves only {{BEGIN HCI END HCI}} for non-programming variable carrying costs of video. According to the Competitive ISPs that I interviewed, non-programming variable carrying costs are approximately {{BEGIN HCI END HCI}}, excluding capital expenditure, sales commission and installation. Thus, if programming and non-programming variable carrying costs are included, Competitive ISP2 operates its video service at a loss of approximately {{BEGIN HCI END HCI}} per month/user, a loss that it makes up for to some extent in its high-speed broadband product.

100. Competitive ISP2 said it has to offer video in order to satisfy the demand of its subscriber base. Indeed, the video "take rate" of Competitive ISP2's subscribers (i.e., the

fraction of its subscribers that also subscribe to video product) is {{BEGIN HCI END HCI}}percent. Competitive ISP2 said, “our model is based on the fact that we cannot win customers away from traditional cable broadband service without offering a comparable video package.”

101. Competitive ISP2 noted that if its costs were to rise by as little as {{BEGIN HCI END HCI}}, this would have a significant impact on profitability and on investment decisions. A small price impact like this on a per user basis would result in a large decline in the operating free cash flows that Competitive ISP 2 could use to invest in new broadband.

102. Interviews and documents provided by Competitive ISP3 and Competitive ISP4 indicate that (1) the difference in video programming costs between themselves and large incumbents are already a cause for reduced investment and (2) a further increase in that difference would harm the business case for future broadband investment by a greater extent.

An executive at Competitive ISP3 noted in written comments to my staff:

For small- and medium sized providers, it is becoming increasingly challenging to continue to provide video programming services because video programming costs for these providers continue to escalate. Video programming costs have been increasing faster for small-and medium-sized multichannel video programming distributor. Most importantly, small- and medium-sized providers pay more for video programming than larger MVPDs, which can demand far more favorable terms and prices from video programmers because of their scale.

...

This disparity between the cost paid by large incumbents and smaller competitive broadband providers naturally creates markets in which new deployments simply do not make commercial sense. In other words, a large delta like the one Charter seeks here makes it less likely those competitive broadband providers will be willing or even able to deploy into New Charter’s territory—delaying or even foregoing opportunities for meaningful competition in those markets.

The Chief Executive Officer of Competitive ISP4 noted in written comments to my staff:

High video programming costs related to providing linear video distribution services (i.e., cable television) are already among the most significant impediments to broadband deployment for small providers. Large incumbents have a significant advantage in the video market. Video is a game of scale, and small operators like ours simply have none.

...

Our company is concerned about the proposed merger. We already compete with [Charter and TWC in many of our markets]. Because of our lack of scale on the video side, we already have difficulty competing against [Charter and TWC] in the market place today. This already makes it difficult for us to expand our deployments into more of their territory. That relative disadvantage will be significant exacerbated if Charter and TWC are permitted to combine. As a result, the proposed transaction would [not only inhibit the ability of our company and other smaller providers to invest in broadband deployment in New Charter's footprint, but also threaten our existing investments in broadband].

103. The loss of investment would be unfortunate for consumers in the areas served by New Charter's cable systems as the beneficial results of recent entry, reviewed next, demonstrates.

#### **D. Impact of Decreased Broadband Entry and Competition on Consumers**

104. The response of incumbents to entry by Google Fiber and other ultra-high-speed broadband providers shows the large consumer benefits from entry and competition. TWC upgraded its 100 Mbps Internet plan to 300 Mbps after Google Fiber decided to offer service in Austin, Texas.<sup>92</sup> In Kansas City, AT&T moved to match Google Fiber's speed and price, while Comcast and TWC increased its speeds by up to three times at no price increase.<sup>93</sup> Shortly after

---

<sup>92</sup> Martyn Williams, "Aha! Time Warner Cable Ups Austin Broadband Speeds as Google Fiber Looms," PCWorld, February 20, 2014, <http://www.pcworld.com/article/2099908/aha-time-warner-cable-ups-austin-broadband-speeds-as-google-fiber-looms.html>.

<sup>93</sup> Jacob Davidson, "AT&T Just Showed Us the Only Way We'll Get Better Internet Service," Time, February 17, 2015, <http://time.com/money/3712151/att-google-competition-internet/>; Bobby Burch, "The Google Effect: Fiber Breeds Innovation, Competition," Kansas City Business Journal, December 12, 2014, <http://www.bizjournals.com/kansascity/print-edition/2014/12/12/the-google-effect-fiber-breeds-innovation.html?page=all>; Conner Forrest, "Comcast, Time Warner Take On Google Fibre in Kansas City; Can

Google Fiber announced plans to enter in Provo, Utah, Comcast increased speeds for existing customers and offered a new triple play bundle at 105 Mbps.<sup>94</sup> AT&T matches Google's \$70 price for Gigabit service in Google Fiber cities, but charges higher prices elsewhere.<sup>95</sup> TWC increased its speeds in Charlotte six fold at no additional charge after Google Fiber announced plans to expand there.<sup>96</sup> These reactions are exactly what the academic literature on broadband competition would lead us to expect. In a 2010 econometric study, two FCC economists found that broadband competition leads to higher speeds and lower prices, particularly for slower speeds.<sup>97</sup>

105. This entry has also pushed incumbents to expand their own Gigabit offerings.<sup>98</sup> AT&T has announced plans to launch gigabit fiber in 56 cities in total, many of which are the same cities that Google Fiber is exploring.<sup>99</sup> Near the beginning of 2013, Cox Cable's CEO dismissed the idea of upgrading to Gigabit speeds, saying that the upgrade would cost multiple

---

the Incumbents Compete?" TechRepublic, Aug. 12, 2014, <http://www.techrepublic.com/article/comcast-time-warner-take-on-google-fiber-in-kansas-city-can-the-incumbents-compete/>.

<sup>94</sup> Ross Lindsay, "Only Good Can Comes from Google Fiber," Technique, February 3, 2015, <http://niquie.net/opinions/2015/02/03/only-good-can-come-from-google-fiber/>.

<sup>95</sup> Bill Snyder, "Google Fiber Competition Makes AT&T Cut Cost of Gigabit Service in Some Areas," PC World, October 5, 2015, <http://www.pcworld.com/article/2989109/networking-hardware/google-fiber-competition-makes-att-cut-cost-of-gigabit-service-in-some-areas.html>; Chris Morran, "AT&T Expands High-Speed Fiber Network, Still Overcharges in Areas without Competition," Consumerist, November 9 2015. <http://consumerist.com/2015/11/09/att-expands-high-speed-fiber-network-still-overcharges-in-areas-without-competition/>.

<sup>96</sup> Karl Bode, "The Mere Threat of Google Fiber Has Time Warner Cable Offering Speeds Six Times Faster at the Same Price," TechDirt, April 1, 2015, <https://www.techdirt.com/blog/netneutrality/articles/20150413/08435930635/mere-threat-google-fiber-has-time-warner-cable-offering-speeds-six-times-faster-same-price.shtml>.

<sup>97</sup> Scott Wallsten and Colleen Malahan (2010), "Residential Broadband Competition in the United States," Working Paper, [http://works.bepress.com/cgi/viewcontent.cgi?article=1105&context=scott\\_wallsten](http://works.bepress.com/cgi/viewcontent.cgi?article=1105&context=scott_wallsten).

<sup>98</sup> Marguerite Reardon, "Google Fiber's Effect: Fuel for a Broadband Explosion," CNET, April 30, 2014, <http://www.cnet.com/news/googles-fiber-effect-fuel-for-a-broadband-explosion/>.

<sup>99</sup> AT&T, "AT&T Plans to Reach 38 More Metros with Blazing Fast Gigabit Internet Speeds," December 7, 2015, [http://about.att.com/story/plans\\_to\\_reach\\_38\\_more\\_metros\\_blazing\\_internet\\_speeds.html](http://about.att.com/story/plans_to_reach_38_more_metros_blazing_internet_speeds.html). A comparison of the proposed coverages of AT&T Gigapower and Google Fiber reveals substantial overlap. AT&T, "Where is U-Verse with AT&T Gigapower?" <https://www.att.com/shop/internet/gigapower/coverage-map.html>; Google Fiber, "Expansion Plans," <https://fiber.google.com/newcities/>.

**REDACTED – FOR PUBLIC INSPECTION**

billions.<sup>100</sup> About a year later, in May 2014, Cox announced its plans to launch Gigabit service in Phoenix, Las Vegas, and Omaha, three cities targeted for Gigabit service by Google Fiber and CenturyLink.<sup>101</sup> FCC Chairman Tom Wheeler has attributed these expansions to increased competition, even as he recognized the limited scope to-date of this competitive deployment.<sup>102</sup>

106. These benefits from broadband entry and competition are threatened by the Transaction. In sum, the Transaction would result in the merging parties acquiring increased market power over video programming distribution that would enable them to secure significantly lower costs for providing video programming and higher margins. That would exacerbate existing market failures in the provision of local broadband and, in particular, would tend to discourage the entry and expansion of smaller ISPs in competition with the ISPs operated by the merging parties. That in turn would suppress competition and harm consumers in the local broadband markets.<sup>103</sup>

---

<sup>100</sup> Shalini Ranachandran, "Speedier Internet Rivals Push Past Cable," Wall Street Journal, January 2, 2013, <http://www.wsj.com/articles/SB10001424127887324731304578193390432321484>.

<sup>101</sup> Angela Moscaritolo, "Cox Details Gigabit Internet Rollout," PC Magazine, May 23, 2014, <http://www.pcmag.com/article2/0,2817,2458484,00.asp>; Google Fiber, "Expansion Plans," <https://fiber.google.com/newcities/>; CenturyLink, "CenturyLink Expands its Gigabit Service to 16 Cities, Delivering Broadband Speeds Up to 1 Gigabit per Second," Aug. 5, 2014, <http://news.centurylink.com/news/centurylink-expands-its-gigabit-service-to-16-cities-delivering-broadband-speeds-up-to-1-gigabit-per-second>.

<sup>102</sup> Tom Wheeler, "The Facts and Future of Broadband Competition," September 4, 2014, [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-329161A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-329161A1.pdf).

<sup>103</sup> ISPs are also intermediaries between Internet content providers and households. By reducing competition in the provision of local broadband the Transaction could also increase market power of the merging parties over Internet content providers. {{ BEGIN HCI

**END HCI }}**

## V. Charter's Economic Analysis of the Efficiency Gains from Lower Video Programming Prices

107. Professor Katz and I agree on a number of key points that are relevant for evaluating the Transaction. The Transaction will result in a significant increase in the bargaining power of the Applicants over video programmers.<sup>104</sup> The Transaction will reduce the average total cost of video programming for New Charter as a result of Charter stepping into TWC's contracts initially<sup>105</sup> and as a result of New Charter negotiating lower rates over time.<sup>106</sup> Although some of the video programming contracts have fixed, upfront fees for subscribers, those payments are a function of number of subscribers and are therefore variable in the longer run.<sup>107</sup> As a general matter firms, even monopolists, tend to pass on some portion of marginal cost decreases to their customers.<sup>108</sup> Charter would, however, pass on substantially less than 100 percent of the marginal cost decreases and keep the remainder as increased margin.<sup>109</sup>

108. Professor Katz also agrees that the Applicants provide access and distribution services to the video programmers. He notes, "[p]rogrammers' demand for content is derived from the demand for programming. To realize the latter demand, programmers require distribution."<sup>110</sup>

As discussed above, the terms of the contracts negotiated between Charter and TWC {{BEGIN

### HCI

---

<sup>104</sup> Katz Declaration at Section II.A.1.

<sup>105</sup> Katz Declaration at Section II.A.2.

<sup>106</sup> Katz Declaration at pp. 11-12, 22, 26. "It should be noted that this projection is conservative in that it assumes that the combined entity will benefit from the application of the rates in TWC's current contracts with programmers but assumes neither that New Charter will be able to obtain lower rates than TWC would, nor that legacy TWC systems will be able to take advantage of any instances in which Charter has negotiated more favorable programming prices than has TWC"

<sup>107</sup> Katz Declaration at p. 19.

<sup>108</sup> Katz Declaration at p. 31.

<sup>109</sup> For instance, Professor Katz estimates New Charter will pass on 50-60 percent of its marginal cost savings on to its customers. See Katz Declaration at Section II.B.2.

<sup>110</sup> Katz Declaration at ¶ 76.

END HCI}} MVPDs aren't

purchasing programming using it as an input into a production process. They are acting as intermediaries between video programmers and households.<sup>111</sup>

109. Professor Katz and I also agree that it is not appropriate to analyze the Transaction using the monopsony model in which a monopoly buyer uses its power to force down the price of an input.<sup>112</sup> Unfortunately, Professor Katz has made a fundamental mistake in analyzing the impact of the Transaction. Despite having rejected the monopsony model he essentially treats the Transaction the same way economists would treat the purchase of an input by a buyer.

**A. Professor Katz's Analysis of the Economic Efficiency of the Transaction is Wrong**

110. Professor Katz simply replaces the classic monopsony model in which a monopoly buyer purchases an input with a Nash bargaining model in which a buyer purchases an input. He treats MVPDs and video programmers in the same way as economists would treat automobile companies and steel manufacturers engaging in bilateral negotiations over input purchases. As a result, his analysis of the impact of the Transaction on consumer welfare is wrong as a matter of economics and of standard merger practice.

111. To see the mistake starkly consider the implications of Professor Katz's analysis in the following hypothetical situation. Suppose there is a relatively competitive video programmer industry. The video programmers want to buy access and distribution to households served by a relatively large number of small MVPDs spread across the country. In this hypothetical situation, the MVPDs collect payments from households for the video programming services

---

<sup>111</sup> This point is seen most clearly in the fact that the MVPDs enable video programmers to access households for the purpose of presenting advertisements to them. That situation is analogous to other intermediaries between advertisers and consumers such as newspapers and radio stations.

<sup>112</sup> Katz Declaration at Section II.D.1.

and pay that back to the video programmers minus a commission. MVPDs also charge an access and distribution fee for providing access to their subscriber households. However, the smaller MVPDs lack market power to demand significant fees for providing access to their customers.

112. Now suppose the MVPDs merge to monopoly. They increase the price of access and distribution services to the video programmers. According to widely accepted merger practice, we would treat this as an increase in the access and distribution price to the video programmers.<sup>113</sup> The fact that the monopoly MVPD passes on some of the cost savings to households in the form of lower fees would not save this hypothetical merger from condemnation.

113. In a traditional single-sided analysis antitrust authorities would not credit the savings as an efficiency gain since the households would not be in the relevant market for the purchase of video programming intermediation services.<sup>114</sup> It would be sufficient to show an anticompetitive effect on one side of the intermediary and no consideration would be given to the other side.<sup>115</sup> In a modern two-sided analysis one would look at the impact of the merger on

---

<sup>113</sup> See, e.g., Complaint, U.S. v. Daily Gazette Co., and MediaNews Group, Inc., ¶ 26 (“Accordingly, the sale of local daily newspapers to readers, and the sale of access to those readers to advertisers in those newspapers, each constitutes a line of commerce and a relevant product market within the meaning of Section 7 of the Clayton Act and for purposes of Sections 1 and 2 of the Sherman Act.”); U.S. v. NAT, L.C. and D.R. Partners d/b/a Donrey Media Group, ¶ 8 (“Local daily newspapers sell two products (services) to two sets of customers. To readers, they sell daily newspapers. To advertisers, they sell access to their readers. Each of these products constitutes a line of commerce and a relevant product market within the meaning of Section 7 of the Clayton Act.”).

<sup>114</sup> See US Department of Justice and the Federal Trade Commission (2010) “Horizontal Merger Guidelines,” at § 10 n. 14 (“The Agencies normally assess competition in each relevant market affected by a merger independently and normally will challenge the merger if it is likely to be anticompetitive in any relevant market.”)

<sup>115</sup> See *supra*, n. 113. I disagree with this approach and recommend considering both groups of customers.

the total price of video distribution and therefore net out the savings to consumers.<sup>116</sup> But since the MVPD only passes back a portion of its higher access and distribution fees to consumers the merger still results in an increase in the total price of video distribution.

114. An economic analysis that followed Professor Katz's line of reasoning would focus entirely on the pass-through of the monopoly price increase to households, ignore the impact on video programmers, and claim that the merger generates efficiencies. That is clearly wrong as a matter of economics and merger practice. Yet there is no substantive economic distinction between the merger I have just described and the one considered by Professor Katz. There are only accounting differences in how access and distribution fees are paid by the video programmers as I showed above.

115. This mistake sends Professor Katz's analysis far off course. One would ordinarily define the relevant markets in which intermediaries compete, assess the extent to which they have market power as intermediaries, assess the extent to which the merger of intermediaries would increase prices to the two groups of customers they are providing intermediation services to in those markets, assess the overall impact on prices for the two groups of customers, and then consider offsetting efficiencies.

116. In fact, Professor's Katz has reached two empirical findings that, taken together, show that the Transaction would tend to significantly increase the prices paid by video programmers for intermediation services, for access and distribution, and the total price paid by video programmers and households for intermediation services. First, he finds that New Charter would pay significantly less for video programming. Therefore the video programmers would

---

<sup>116</sup> David Evans and Richard Schmalensee (2014) "The Antitrust Analysis of Multisided Platform Businesses," in Blair and Sokol, ed, *The Oxford Handbook of International Antitrust Economics, Volume 1* at pp. 413-414, and 438.

pay significantly more for access and distribution. Second, he finds that New Charter would only pass on about half of its reduced cost for video programming. The Transaction would, under his analysis, therefore increase the total price for video programming access and distribution. After netting out the lower prices to subscriber households the increase in the total price for video programming access and distribution would equal about half of the increase in the price paid by video programmers. As I showed above, using Professor Katz's pass-through estimates the Transaction would result in about a { **BEGIN CI**                      **END CI** } percent increase in the price charged by the merging parties for providing access and distribution to their households.

117. Based on standard merger practice at the U.S. Department of Justice and the Federal Trade Commission we can conclude the following from the Professor Katz's findings on the impact of the Transaction on video programming costs and consumer pass-through:

- a. Examining the direct effect of the merger on prices, without conducting a market definition analysis, we would conclude that the Transaction results in a significant increase in market power and prices based on a single-sided analysis (just video programmers) or two-sided analysis (video programmers plus households).
- b. Examining the effects of the merger on prices in a relevant market that consists of the local areas served by the Applicants, we would conclude that the Transaction results in a significant increase in market power and prices based on a single-sided analysis (just video programmers) or two-sided analysis (video programmers plus households)

118. I am not, however, endorsing either of these approaches or presenting any opinion on the appropriate relevant markets for assessing this Transaction.

#### **B. Professor Katz's Analysis of Pass-Through Is Wrong**

119. Professor Katz also claims that Charter would pass on 50-60 percent of the marginal cost decreases to consumers. His analysis is based on a standard textbook economic model in

which a company produces a single product and charges a single price.<sup>117</sup> He has accurately described and implemented that model. However, that simple model is not directly applicable for analyzing cable companies that engage in price discrimination through selling bundles of multiple products, which are themselves bundles of other products, at multiple prices and engage in extensive selective price cutting.<sup>118</sup>

120. Charter engages in product bundling.<sup>119</sup> It is well known that product bundling enables firms to engage in price discrimination by providing a distribution of offers that track the distribution of the willingness to pay.<sup>120</sup> These bundles include more than {{BEGIN HCI  
END HCI}} different combinations of various subsidiary bundles of different levels of MVPD, ISP, and VoIP services.<sup>121</sup> Charter also engages in selective pricing through promotional discounts, which vary across local areas and across households within local areas.<sup>122</sup>

---

<sup>117</sup> Katz Declaration at Section II.B.1.b and Appendix V.B.3.

<sup>118</sup> To see the importance of price discrimination consider the standard textbook model, relied on by Professor Katz, of a monopolist that charges a single price for a single product. In that case, with linear demand, the monopolist would pass on 50 percent of a marginal cost decrease. By contrast, consider a monopolist that engages in first-degree price discrimination where it charges each customer their maximum willingness to pay through different prices and bundles. In that case, the monopolist wouldn't reduce prices at all following a marginal cost decrease since the maximum willingness to pay for each consumer remains the same.

<sup>119</sup> Professor Katz invokes the "multidimensional nature of MVPD pricing" as a reason why it is "difficult or even impossible to determine a specific pass-through rate from Charter's recent pricing behavior." See Katz Declaration at ¶51. The same point applies to his logit simulation model.

<sup>120</sup> See George Stigler (1968) "A Note on Block-Booking," in George Stiger, ed, *The Organization of Industry*; William Adams and Janet Yellon (1976) "Commodity Bundling and the Burden of Monopoly" *The Quarterly Journal of Economics*, 90(3) at pp. 475-498; Yannis Bakos and Eric Brynjolfsson (1999) "Bundling information goods: Pricing, profits and efficiency," *Management Science* 45(2) at pp. 1613-1630.

<sup>121</sup> {{BEGIN HCI

END HCI}}

<sup>122</sup> For instance, internal documents describing Charter's pricing strategy {{BEGIN HCI

121. Professor Katz's logit simulation model, however, assumes a firm that offers a single product at a single price.<sup>123</sup> It is therefore not relevant for assessing how Charter would respond to a decrease in cost. In addition, Professor Katz has provided no econometric evidence that this demand specification, and the Bertrand pricing model that underlies it, is consistent with how Charter, or MVPDs generally, compete. These are simply assumptions.

122. His logit simulation model results in a simple formula that shows the relationship between the single price charged by a single-product firm and its market share. Market share is the only factor that determines pass-through under this model. The formula, and that conclusion, depends on various assumptions. Some of those assumptions are clearly wrong in this particular case (that the firm charges a single price for a single product) and others are untested (that cable companies engage in differentiated market Bertrand competition). Therefore I would not put much weight on his "simulated" pass-through rates. They are driven entirely by assumptions and not by any empirical analysis.

123. Professor Katz admits that the "it is difficult or even impossible to determine a specific pass-through rate from Charter's recent pricing behavior" because of the "multidimensional nature of MVPD pricing." He provides other indirect evidence in support of his simulated pass-through rates.<sup>124</sup> None of it provides credible support for his simulated pass-through estimates based on the logit formula.

---

END HCI}}

<sup>123</sup> See Katz Declaration at Section V.B.3.

<sup>124</sup> Katz Declaration at ¶ 50 citing George Ford and John Jackson (1997), "Horizontal Concentration and Vertical Integration in the Cable Television Industry," *Review of Industrial Organization*, 12 at pp. 501-518. He also cites a recent paper by Crawford and Yurokoglou which he says "suggests that consumers ultimately benefit through lower prices from programming cost savings." Crawford and Yurokoglou do not report an estimated pass-through rate. See Gregory Crawford and Ali Yurokoglou (2012), "The Welfare Effects of Bundling in Multichannel Television Markets," *American Economic Review*, 102(2) at pp. 643-685.

124. He cites a study conducted by Ford and Jackson based on data for the cable industry in 1994.<sup>125</sup> Ford and Jackson found a pass-through rate of about 50 percent. I would not place much weight on this study. It is based on analyzing competition in the cable industry in 1994. That was before cable systems bundled broadband and VoIP, which were not yet available, and at a time when the cable industry was much less concentrated at a national level than it is today.

125. The Ford and Jackson analysis, in fact, does not support Professor Katz's thesis that lower video programming costs for larger distributors increases consumer welfare. The authors conclude that the programming cost reductions from merger could *decrease* consumer welfare because the benefits from the partial pass-through of cost savings are outweighed by the costs of reduced competition resulting from the heightened barrier to entry:<sup>126</sup>

[W]hile the results of this simple welfare analysis suggest that increased ownership concentration of cable systems by large MSOs enhances social welfare, we also found that such concentration can result in substantial programming discounts. These discounts are large enough so as to potentially constitute an absolute cost advantage for incumbent cable systems vis-à-vis potential entrants and thus a barrier to entry. If so, welfare calculations must take into account the effect on competitive entry. Such entry has been found to have substantial welfare enhancing properties through lower prices and higher quality of service. Since direct competition between cable companies has been shown by numerous studies to reduce basic cable prices by over 20 percent, the relatively modest increase in social welfare due to increased concentration (derived from our estimates) suggests that limits on such concentration may be warranted.

126. Professor Katz also reports some evidence that Charter has "raised its rates in response to increased programming costs." This evidence highlights the complexity of pricing by

---

<sup>125</sup> Katz ¶50, citing George Ford and John Jackson (1997), "Horizontal Concentration and Vertical Integration in the Cable Television Industry," *Review of Industrial Organization*, 12 at p. 514. He also cites a recent paper by Crawford and Yurokoglou which he says "suggests that consumers ultimately benefit through lower prices from programming cost savings." Crawford and Yurokoglou do not report an estimated pass-through rate.

<sup>126</sup> George Ford and John Jackson (1997), "Horizontal Concentration and Vertical Integration in the Cable Television Industry," *Review of Industrial Organization*, 12 at p. 514.

Charter and the mistake in assuming that it follows the simple single price for a single product model assumed by the logit demand formula. According to Katz, Charter “has pursued a policy of generally passing retransmission-consent cost increases through to consumers on a one-for-one basis in the form of the Broadcast TV Surcharge.”<sup>127</sup> Even though the retransmission charges are sometimes incurred at a local level, Charter imposes the surcharge on a national level.<sup>128</sup> Between July 2012 and January 2015 the surcharge increased by {{ BEGIN HCI ND HCI }} while the retransmission cost per subscriber increased by {{ BEGIN HCI ND HCI }}. Therefore, Charter passed on in the form of higher surcharges {{ BEGIN HCI HCI END HCI }} times the increase in retransmission costs at a national level.<sup>129</sup> That high pass through rate is inconsistent with Katz’s logit simulation formula and other studies cited by Katz that show partial pass-through. There is no obvious reason why the two would be different.

127. Professor Katz claims that the Broadcast Surcharge is part of a broader strategy of “partially passing through all programming costs” but does not provide any factual support for that statement or any discussion of what that strategy is. To reconcile the {{ BEGIN HCI ND HCI }} percent pass-through rate with his estimates of pass through he identifies a particular price increase, for set-top boxes, by imposed by Charter. He does not show that these price increases were the only price changes made by Charter or that they are tied to changes in video programming costs versus some other business strategy. He takes the price increases for the set-top boxes, adds them to the broadcast surcharges, and says that the overall

---

<sup>127</sup> Katz Declaration at ¶51.

<sup>128</sup> Although some agreements may overlap local markets due to common station ownership, the surcharges are assessed on a local, station-by-station basis.

<sup>129</sup> That average masks enormous variability in the relationship between each increase in the surcharge and the corresponding increase in retransmission costs. The four individual pass-through rates reported by Katz in Table 2 are {{ BEGIN HCI END HCI }}

portion of video programming cost increases (including retransmission) was {{ BEGIN HCI  
END HCI}} percent. That is simply an arbitrary calculation that happens to yield a number closer to what Katz has calculated from his logit simulation model.

128. Professor Katz does not provide *any* evidence based on the historical pricing behavior by the Applicants that they would pass 50-60 percent of lower video programming marginal costs on in the form of lower prices. He did not have to restrict his analysis to Charter. He has advanced a general proposition concerning pass-through of cost changes for cable systems. He could have tested that proposition with data from TWC and Bright House Networks. In particular, his general proposition predicts that TWC should charge significantly lower prices than Charter because it has significantly lower video programming costs. Professor Katz might have been able to test that proposition through a careful examination of their prices.

129. Based on my review, I do not believe Professor Katz has presented credible or reliable economic evidence that New Charter would 50-60 percent of the reductions in its video programming costs on to consumers. I agree that New Charter would pass on some portion. Based on my review, and discussions Competitive ISPs, I think it is more likely that New Charter would use the increased margins to engage in primarily targeted price cuts to limit local competition.

## **VI. Conclusion**

130. Based on the analysis above, I conclude that the Transaction would increase the intermediation fees paid by video programmers for access and distribution and would reduce competition for the provision of local broadband.

# **APPENDIX A**

## CV of David S. Evans

### SHORT BIO

I am the Chairman of the Global Economics Group, based in its Boston office, and hold teaching positions at the University of Chicago and the University College London. I have BA, MA, and Ph.D. degrees in economics from the University of Chicago.

As an economist, I specialize in the field of industrial organization, which concerns the behavior of firms, and in antitrust economics, which is the portion of industrial organization that concerns the analysis of business practices that could limit competition and harm consumers. I have a particular expertise in the study of multi-sided platforms that serve as intermediaries between several groups of customers. I have written six major books and more than 100 scholarly articles, many published in leading economic journals and law reviews.

I have testified, or submitted testimony, to courts, arbitration panels and regulatory authorities, in the United States, including federal and state courts, as well as Australia, Brazil, China, the European Union, Singapore, and Thailand. I have made appearances on antitrust issues before the U.S. Department of Justice, U.S. Federal Trade Commission, the U.S. Federal Communications Commission, and the European Commission. In addition, I have testified before several committees of the U.S. Congress including the Senate Banking Committee, the House Financial Services Committee, and the House Oversight Committee.

### CONTACT DETAILS

Address: Global Economics Group  
111 Devonshire St.  
Boston, Mass 02109

Mobile: 1 (617) 320 8933  
Skype: david.s.evans  
Email: [devans@globaleconomicsgroup.com](mailto:devans@globaleconomicsgroup.com)

### EDUCATION

1979-1983

University of Chicago  
Ph.D. and MA in 1983  
Specialized in econometrics, industrial organization, and labor economics

1972-1975

University of Chicago

BA in Economics in 1975  
Completed first year of graduate program

## **EMPLOYMENT HISTORY**

- 2011-  
Global Economics Group  
Chairman
- 2004-  
Market Platform Dynamics  
Founder and Managing Director
- 2004-  
Competition Policy International  
Founder and Publisher
- 2006-  
University of Chicago Law School  
Lecturer, teaching advanced seminar in antitrust law and economics
- 2004-  
University College London  
Visiting Professor in the Faculty of Laws, teaching various advanced courses in antitrust economics  
Executive Director, Jevons Institute for Competition Law and Economics
- 2004-2011  
LECG, LLC  
Vice Chairman, LECG Europe  
Head, Global Competition Policy Practice  
Member of the Boards of Directors of various subsidiaries
- 1988-2004  
NERA Economic Consulting  
Senior Vice President  
Member of the Management Committee  
Member of the Board of Directors
- 1983-1995  
Professor of Law, Fordham University Law School (1985-1995)  
Associate Professor of Economics (1983-1989) (tenure as of 1988)

## **APPEARANCES AND TESTIMONY**

Dr. Evans has testified, in the United States, before Federal, State and Administrative courts as well as arbitration panels and, outside the United States, before the Chinese Supreme People's Court and the General Court of the European Union.

He has made personal appearances before or presented written testimony to the Australian Competition and Consumer Commission, European Commission, Federal Communications Commission, Federal Trade Commission, the U.S. Department of Justice, U.S. Federal Reserve Board of Governors, and the Securities and Exchange Commission.

He has also testified before the House Financial Services Committee, the House Oversight Committee, and the Senate Banking Committee.

## **TEACHING**

Over the last 25 years, I have taught classes on antitrust economics at Fordham University Law School, University College London Faculty of Laws, and the University of Chicago Law School. I currently teach antitrust economics at the University of Chicago, where I teach an advanced seminar in antitrust law and economics, and the University College London, where I teach intensive courses on the antitrust law and economics of multi-sided platforms, payments, and online industries.

I have also taught various aspects of antitrust economics to judges in China and the European Union. In 2009 and 2010, I taught classes for judges, including basic economic principles and intellectual property, in the European Union for a program sponsored jointly by the University College London and the Toulouse School of Economics. At the request of the Chinese State Ministry of Industry and Information Technology (MIIT), in 2013 and 2014, I taught certain aspects of antitrust economics, including platform-based industries, to judges from the Chinese Supreme People's Court and provincial appeal courts.

## **REPRESENTATIVE MATTERS**

### *Antitrust and Intellectual Property*

Dr. Evans has worked on mergers, monopolization and abuse of dominance, and joint venture cases in multiple jurisdictions. A number of his matters have involved the intersection of antitrust and intellectual property and the antitrust of information technology/on-line businesses. Representative matters include:

- Comcast's acquisition of Time Warner Cable on behalf of Netflix before the Federal Communications Commission and the Department of Justice.
- In *Qihoo v. Tencent*, submitted testimony to The Chinese Supreme People's Court and The High People's Court of Guangdong Province, People's Republic of China, on behalf of Tencent regarding Qihoo's market definition and abuse of dominance claims against Tencent.
- In *SIFMA v. NASDAQ and NYSE Arca*, testified by the Chief Administrative Law Judge, Securities and Exchange Commission, for SIFMA, regarding whether NASDAQ and NYSE Arca had significant market power over depth-of-book data.
- *United States v. Microsoft* on trial and remand regarding remedies and *Microsoft v. Commission of the European Communities* on tying and interoperability on behalf of Microsoft;
- Monster's acquisition of Yahoo! HotJobs before the Federal Trade Commission;
- WPP's acquisition of Taylor Nelson Sofres before the European Commission;
- Google's acquisition of DoubleClick for various third-party intervenors before the Federal Trade Commission, European Commission and Australian Competition and Consumer Commission;

- Investigation of VisaNet and Redecard by the Central Bank of Brazil and other regulatory authorities concerning certain exclusivity agreements and practices in the payment card industry;
- In *Twombly v. Bell Atlantic*, chief author of amicus brief by economists submitted to the United States Supreme Court in support of a grant of a writ of certiorari and in support of reversal; and

### ***Financial Regulation***

Dr. Evans has worked on regulatory matters involving payment systems, consumer financial protection, derivatives regulation, and the regulation of exchanges. Representative matters include:

- Analysis of Consumer Financial Protection Bureau regulations for various financial institutions;
- Debit card regulatory proceedings before the Federal Reserve Board on behalf of various financial institutions;
- Regulation of the OTC commodity derivatives for the Government of Singapore;
- Analysis of Security Exchange Commission orders concerning pricing of market data submitted reports and presentations to the SEC on behalf of Bloomberg; and
- Assistance in creating educational programs for House Financial Services Committee members concerning the financial crisis in 2009.

### **HONORS AND RANKINGS**

- Winner of the Business, Management & Accounting category in the 2006 Professional/Scholarly Publishing Annual Awards presented by the Association of American Publishers, Inc. for *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*.
- The International Who's Who of Competition Lawyers & Economists various years.
- Named among the "Top 25 Competition & Antitrust Practitioners" by Best of the Best USA, Legal Media Group.
- Based on quality-weighted citation data, ranked in top 1 percent of economists on the Social Science Research Network (SSRN) and on the top 3 percent of economists on IDEAS/RePec. Based on downloads, ranked in top 20 of top 8000 economists and top 20 of top 3000 law professors based on SSRN

### **PUBLICATIONS**

Dr. Evans' publications since 2000 are largely available online at Evans' SSRN Page and his publications before 2000 are mostly available at Evans' IDEAS Page.

#### **Books**

*Matchmakers: The New Economics of Multi-Sided Platforms* (Cambridge, MA: Harvard Business School Press, 2016) (forthcoming).

*Platform Economics: Essays on Multi-Sided Businesses*, (Boston, Competition Policy International, 2011), with R. Schmalensee, M. Noel, H. Chang, and D. Garcia-Swartz. (To be published in Chinese in 2016.)

*Interchange Fees: The Economics and Regulation of What Merchants Pay for Cards*, (Boston, Competition Policy International, 2011), with R. Schmalensee, R. Litan, D. Garcia-Swartz, H. Chang, M. Weichert, A. Mateus.

*Trustbusters: Competition Authorities Speak Out* (Boston: Competition Policy International, 2009), co-editor with F. Jenny.

*Catalyst Code: The Strategies of the World's Most Dynamic Companies* (Massachusetts: Harvard Business School Press, 2007), with R. Schmalensee. Translated into Chinese, Korean, Polish, and Russian.

*Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, (Massachusetts: MIT Press, 2006), with A. Hagiu and R. Schmalensee. Translated into Chinese and Korean.

*Paying with Plastic: The Digital Revolution in Buying and Borrowing* (Massachusetts: MIT Press, first edition 1999, second edition 2005), with R. Schmalensee. Translated into Chinese

*Microsoft, Antitrust and the New Economy: Selected Essays* (New York: Kluwer Academic Publishers, 2002), editor.

*The Economics of Small Businesses: Their Role and Regulation in the U.S. Economy* (New York: Holmes and Meier, 1986), with W. Brock.

*Breaking Up Bell: Essays on Industrial Organization and Regulation* (New York: North Holland, 1983), editor and co-author of eight of ten chapters.

### **Articles and Book Chapters**

“An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most,” *Review of Network Economics*, 2015 (forthcoming).

“The Impact of the U.S. Debit Card Interchange Fee Caps on Consumer Welfare: An Event Study Analysis,” (with H. Chang and S. Joyce), *Journal of Competition Law and Economics*, 2015.

“The Antitrust Analysis of Multi-Sided Platform Businesses,” (with R. Schmalensee), in *Oxford Handbook on International Antitrust Economics*, R. Blair and D. Sokol, eds., Oxford: Oxford University Press, 2015

“The Antitrust Analysis of Rules and Standards for Software Platforms,” *Competition Policy International*, Autumn 2014.

“Market Definition Analysis in Latin America with Applications to Internet-Based Industries,” (with E. Mariscal), Working Paper (University of Chicago Law School and Centro de Investigacion y Docencia Economica), 2013.

“Paying with Cash: A Multi-Country Analysis of the Past and Future Use of Cash for Payments by Consumers,” (with K. Webster, G. Colgan, and S. Murray), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2013.

“Payments Innovation and the Use of Cash,” (with K. Webster, G. Colgan, and S. Murray), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2013.

“The Consensus Among Economists on Multisided Platforms and Its Implications for Excluding Evidence that Ignores It,” *CPI Antitrust Chronicle*, 2013, 6(1).

“Analyzing Competition among Internet Players: Qihoo 360 v. Tencent,” (with V. Y. Zhang and H. Chang), *CPI Antitrust Chronicle*, 2013, 5(1).

“Attention Rivalry among Online Platforms,” *Electronics Intellectual Property, MIIT China*, 2013, 9, 30-41(in Chinese).

“Attention Rivalry among Online Platforms and Its Implications for Antitrust Analysis,” *Journal of Competition Law and Economics*, 2013, 9(2), 313-357.

“Economics of Vertical Restraints for Multi-Sided Platforms,” *Competition Policy International*, 2013, 9(1).

“Enhancing Financial Benchmarks: Comments on the OICU-IOSCO Consultation Report on Financial Benchmarks,” Working Paper (University of Chicago Law School and Global Economics Group), 2013.

“The Role of Keyword Advertising in Competition among Rival Brands,” (with Elisa Mariscal). *CPI Antitrust Chronicle*, 2012, 12(1).

“Will the Wheatley Recommendations Fix LIBOR?” (with R.M. Abrantes-Metz). *CPI Antitrust Chronicle*, 2012, 11(2).

“Governing Bad Behavior by Users of Multi-Sided Platforms,” *Berkeley Technology Law Journal*, 2012, 27(2).

“Replacing the LIBOR with a Transparent and Reliable Index of Interbank Borrowing: Comments on the Wheatley Review of LIBOR Initial Discussion Paper,” (with R.M. Abrantes-Metz), University of Chicago Institute for Law and Economics Olin Research Paper No. 620, 2012.

“Two-Sided Market Definition,” in *Market Definition in Antitrust: Theory and Case Studies*, 2012.

“Why Come Platform Businesses Face Many Frivolous Antitrust Complaints and What to Do

About It,” *Competition Policy International*, 2012, 8(2).

“Lightening Up on Market Definition,” in *Research Handbook on the Economics of Antitrust Law*, E. Elhauge, ed., New York: Edward Elgar, 2012.

“Market Definition and Merger Analysis for Multi-Sided Platforms,” (with R. Schmalensee), 2012, *available at* <https://www.competitionpolicyinternational.com>

[/assets/Uploads/MSP11-13-2012.pdf](#).

“Payments Innovation and Interchange Fees Regulation: How Inverting the Merchant-Pays Business Model Would Affect the Extent and Direction of Innovation,” Working Paper (University of Chicago Law School), 2011.

“How Changes in Payment Card Interchange Fees Affect Consumers Fees and Merchant Prices: An Economic Analysis with Applications to the European Union,” with A.M. Mateus, Working Paper (University of Chicago Law School and New University of Lisbon), 2011.

“Economic Analysis of Claims in Support of the ‘Durbin Amendment’ to Regulation Debit Card Interchange Fees,” with H.H. Chang and M.M. Weichert, Working Paper (University of Chicago Law School, Global Economics Group, and Market Platform Dynamics), 2011.

“The Antitrust Economics of Free.” *Competition Policy International*, 2011, 7(1).

“Conversations with Jon Leibowitz and Joaquin Almunia,” (with Jon Leibowitz and Joaquin Almunia). *Competition Policy International*, 2011, 7(1).

“The Economic Principles for Establishing Reasonable Regulation of Debit-Card Interchange Fees that Could Improve Consumer Welfare,” (with R.E. Litan and R. Schmalensee), Working Paper (University of Chicago Law School, AEI-Brookings Joint Center for Regulatory Studies, and MIT), 2011.

“The Regulation of Interchange Fees by the U.S. Federal Reserve Board: A Primer on Economic Principles, II,” *CPI Antitrust Chronicle*, 2011, 12(2).

“AT&T-Mobile: Does Efficiency Really Count?” (with H. Chang & R. Schmalensee) *CPI Antitrust Chronicle*, 2011, 10(2).

“Net Neutrality Regulation and the Evolution of the Internet Economy,” *CPI Antitrust Chronicle*, 2011, 8(2).

“A Presentation on Assessment of Market Power and Dominance,” *CPI Antitrust Chronicle*, 2011, 6(1).

“Economic Analysis of the Effects of the Federal Reserve Board’s Proposed Debit Card Interchange Fee Regulations on Consumers and Small Businesses,” (with R.E. Litan and R. Schmalensee), Working Paper (University of Chicago Law School, AEI-Brookings Joint Center for Regulatory Studies, and MIT), 2011.

- “Essays on the Economics of Two-Sided Markets: Economics, Antitrust and Strategy,” Working Paper (University of Chicago Law School), 2010.
- “Failure to Launch: Critical Mass in Platform Businesses,” (with Richard Schmalensee). *Review of Network Economics*, 2010, 9(4).
- “The Effect of the Consumer Financial Protection Act of 2009 on Consumer Credit,” *Loyola Consumer Law Review*, 2010, 22(3).
- “The Web Economy, Two-Sided Markets, and Competition Policy,” Working Paper (University of Chicago Law School), 2010.
- “Why Now is Not the Time to Revamp Consumer Financial Protection,” Working Paper (University of Chicago Law School), 2010.
- “The U.S. Needs Real Financial Reform,” *Forbes.com*, April 2010.
- “The New Consensus on Class Certification: What it means for the Use of Economic and Statistical Evidence in Meeting the Requirements of Rule 23,” *CPI Antitrust Chronicle*, 2010, 1(1).
- “A Response to Professor Levitin on the Effect of the Consumer Financial Protection Agency Act of 2009 on Consumer Credit,” (with J.D. Weight), George Mason Law and Economics Research Paper No. 09-56, 2009.
- “The Middle Way on Applying Antitrust to Information Technology,” *CPI Antitrust Chronicle*, 2009, 11(2).
- “How the Consumer Financial Protection Agency Act of 2009 Would Change the Law and Regulation of Consumer Financial Products,” (with J. Wright), *Bloomberg Law Reports: Risk and Compliance*, 2009, 2(10).
- “The Online Advertising Industry: Economics, Evolution, and Privacy,” *Journal of Economic Perspectives*, 2009, 23(3), 37-60.
- “Why Different Jurisdictions Do Not (and Should Not) Adopt the Same Antitrust Rules,” *Chicago Journal of International Law*, 2009, 10, 161.
- “Innovation in Payments,” (with R. Schmalensee), in *Moving Money: The Future of Consumer Payments*, M. Baily and R. Litan, eds., DC: Brookings Institution Press, 2009.
- “How Catalysts Ignite: The Economics of Platform-Based Start-Ups,” in *Platforms, Markets and Innovation*, A. Gawer, ed., Cheltenham, UK and Northampton, MA, US: Edward Elgar, 2009.
- “The Microsoft Judgment and its Implications for Competition Policy towards Dominant Firms in Europe,” (with C. Ahlborn), *Antitrust Law Journal*, 2009, 75(3), 887.

“Trustbusting Goes Global,” in *Trustbusters: Competition Policy Authorities Speak Out*, D. Evans and F. Jenny, eds., Boston: Competition Policy International, 2009.

“What You Need to Know About Twombly: The Use and Misuse of Economic and Statistical Evidence in Pleadings,” *CPI Antitrust Chronicle*, 2009, 7(2).

“Errata to ‘The economics of market coordination for the pre-Fed check-clearing system: A peek into the Bloomington (IL) node,’” (with H. Chang, M. Danilevsky, and D. Garcia-Swartz), *Explorations in Economic History*, 2008, 45(4).

“Markets with Two-Sided Platforms,” (with R. Schmalensee), in *Issues in Competition Law and Policy*, Vol. 1, American Bar Association, August 2008.

“Antitrust Issues Raised by the Emerging Global Internet Economy,” *Northwestern University Law Review*, 2008, 102(4), 285-306.

“Competition and Regulatory Policy for Multi-sided Platforms with Applications to the Web Economy,” *Concurrences*, 2008, 2, 57-62.

“The Lawful Acquisition and Exercise of Monopoly Power and its Implications for the Objectives of Antitrust,” (with K. Hylton), *Competition Policy International*, 2008, 4(2).

“The Analysis of Mergers that Involve Multisided Platform Businesses,” (with M. Noel), *Journal of Competition Law and Economics*, 2008, 4(3).

“The Economics of the Online Advertising Industry,” *Review of Network Economics*, 2008, 7(3).

“The Economics of Market Coordination for the Pre-Fed Check-Clearing System: A Peek into the Bloomington (IL) Node,” (with H. Chang, M. Danilevsky, and D. Garcia-Swartz), *Explorations in Economic History*, 2008, 45(4).

“The Role of Cost in Determining When Firms Offer Bundles and Ties,” (with M. Salinger), *Journal of Industrial Economics*, 2008, 56(1).

“Economics and the Design of Competition Law,” in *Issues in Competition Law and Policy*, W. Collins, ed., Vol. 1, American Bar Association, August 2008.

“Has the Pendulum Swung Too Far?” (with H. Chang), *Regulation*, Winter 2007-2008. 30(4).

“Do Mobile Operators Have a Dominant Position in a Market for the Wholesale Termination of Calls from Fixed to Mobile?” *The Economics of Mobile Prices, Vodafone Policy Paper Series*, 2007, 7(4).

“Designing the Right Product Offerings,” (with K. Webster), *Sloan Management Review*, Fall 2007.

“Pick Your Pricing,” (with R. Schmalensee), *Chief Executive Magazine, Incorporated*, No. 227, Summer 2007.

“The Industrial Organization of Markets with Two-Sided Platforms,” (with R. Schmalensee), *Competition Policy International*, 2007, 3(1).

“Defining Markets That Involve Multi-Sided Platform Businesses: An Empirical Framework with an Application to Google’s Purchase of DoubleClick,” (with M. Noel), Reg-Markets Center Working Paper No. 07-18, 2007.

“A Pragmatic Approach to Identifying and Analyzing Legitimate Tying Cases,” (with A. Padilla and M. Salinger), in *European Competition Law Annual 2003: What is an Abuse of a Dominant Position?* Oxford: Hart Publishing, 2006.

“The Optimal Prosecution of Corporate Fraud: An Error Cost Analysis,” (with H. Chang), Working Paper (LECG and eSapience), 2006.

“A Somber Anniversary: Terrorism Insurance Five Years after 9/11,” (with D. Garcia-Schwartz and A. Layne-Farrar), Barbon Discussion Paper No. 06-02, 2006.

“Untying the Knot: The Case for Overruling Jefferson Parish,” Working Paper (LECG), 2006.

“An Empirical Analysis of Bundling and Tying: Over-the-Counter Pain Relief and Cold Medicines,” (with M. Salinger), in *Recent Developments in Antitrust: Theory and Evidence*, J. Choi, ed., Massachusetts: The MIT Press, 2006.

“The Economics of Software Platforms: An Application of Theory of Two-Sided Markets,” (with A. Hagiu and R. Schmalensee), *Industrial Organization and the Digital Economy*, G. Illing and M. Peitz, eds., (Massachusetts: The MIT Press, July 2006).

“Tying: The Poster Child for Antitrust Modernization” in *Antitrust Policy and Vertical Restraints*, R. Hahn, ed., DC: Brookings Institution Press, 2006.

“The Architecture of Product Offerings,” (with Karen Webster), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2006.

“Testimony on Tying for the DOJ/FTC Hearings on Single-Firm Conduct,” *CPI Antitrust Chronicle*, 2006, 11(1).

“The Law and Economics of Tying,” (with C. Ahlborn, J. Padilla, and M. Salinger), *CPI Antitrust Chronicle*, 2006, 11(1).

“Defining Antitrust Markets When Firms Operate Two-Sided Platforms,” (with M. Noel), *Columbia Business Law Review*, 2005, 3.

“U.S. v. Microsoft: Did Consumers Win?” (with R. Schmalensee and A. Nichols), *Journal of Competition Law and Economics*, 2005, 1(3), 497-539.

“The Effect of Regulatory Intervention in Two-Sided Markets: An Assessment of Interchange-Fee Capping in Australia,” (with H. Chang and D. Garcia-Swartz), *Review of Network Economics*, 2005, 4(4).

“Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach,” (with A. Padilla), *University of Chicago Law Review*, 2005, 72(1), 73-98.

“Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law,” (with M. Salinger), *Yale Journal on Regulation*, 2005, 22(1), 37-89.

“The Logic and Limits of the Exceptional Circumstances Test,” (with C. Ahlborn and A. Padilla), *Magill and IMS Health, Fordham Journal of International Law*, 2005, 28(4), 1109-1156.

“Analyzing Market Definition and Power in Multi-sided Platforms Markets,” (with M. Noel), Working Paper (University of Chicago Law School and University of California, San Diego), 2005.

“The Economics of Interchange Fees and Their Regulation: An Overview,” MIT Sloan Working Paper No. 4548-05, May 2005.

“How Economists Can Help Courts Design Competition Rules – An EU and US Perspective,” *World Competition: Law and Economics Review*, 2005, 28(1).

“2004: The Beginning of Change,” *American Banker-Bond Buyer*, 2005, 17(12).

“The Economics of Interchange Fees and Their Regulation: An Overview,” (with R. Schmalensee), MIT Sloan Working Paper No. 4548-05, 2005.

“Tying Under Article 82 EC and the Microsoft Decision: A Comment on Dolmans and Graf,” (with A. Padilla), *World Competition: Law and Economics Review*, 2005, 28(1), 93-99.

“The Changing Role of Economics in Competition Policy Decisions by the European Commission during the Monti Years,” (with C. Grave), *Competition Policy International*, 2005, 1(1).

“Excessive Prices: Using Economics to Define Administrable Legal Rules,” (with A. Padilla), *Journal of Competition Law & Economics*, 2005, 1(1), 97-122.

“Curing Sinus Headaches and Tying Law: An Empirical Analysis of Bundling Decongestants and Pain Relievers,” (with M. Salinger), CESifo Working Paper Series No. 1519, 2005.

“The Retailer Class Action Antitrust Case Against the Card Associations,” (with H. Chang and R. Schmalensee), *The Payment Card Economics Review*, Winter 2004, Vol. 2.

“More Than Money: The Development of a Competitive Electronic Payments Industry in the United States,” *The Payment Economics Review*, Winter 2004, Vol. 2.

“The Growth and Diffusion of Credit Cards in Society,” *The Payment Economics Review*, Winter 2004, Vol. 2.

“The Role of Credit Cards in Providing Financing for Small Businesses,” (with D. Blanchflower), *Payment Card Economics Review*, Winter 2004, Vol. 2.

“A Little Knowledge Can Be a Dangerous Thing: Price Controls in the Yellow Pages Industry,” (with A. Oldale and E. Wang), *European Competition Law Review*, October 2004, 25(10), 607-610.

“A Survey of the Economic Role of Software Platforms in Computer-Based Industries,” (with R. Schmalensee and A. Hagiu), CESifo Working Paper Series No. 1314, 2004.

“Software Patents and Open Source: The Battle Over Intellectual Property Rights,” (with A. Layne-Farrar) *Virginia Journal of Law & Technology*, Summer 2004, 9(10).

“The Antitrust Economics of Tying: A Farewell to Per Se Illegality,” (with C. Ahlborn and A. Padilla), *Antitrust Bulletin*, 2004, 49(1/2), 287-341.

“Competition, Cooperation and Upheaval: So-called co-opetition in payment cards is a work in progress—one affected by rapidly changing business relationships and punctuated by court decisions. How will this dance play out?” *American Banker-Bond Buyer*, 2004, 17(1).

“What’s Yours Is Mine,” *The Wall Street Journal*, February 2004, at A7.

“Will Retailers Stampeded to Drop Signature Debit?” *American Banker*, January 2004.

“Managing the Maze of Multisided Markets,” *Strategy+Business*, Fall 2003.

“Regulators set bar high for foreign insurers,” (with M. Ross), *South China Morning Post*, November 2003.

“Some Empirical Aspects of Multi-Sided Platform Industries,” *Review of Network Economics*, 2003, 2(3).

“Competing Theories,” *The Wall Street Journal*, July 2003.

“Demand-Side Efficiencies in Merger Control,” (with A. Padilla), *World Competition Law and Economics Review*, 2003, 26(2).

“Has the Consumer Harm Standard Lost Its Teeth?” (with H. Chang and R. Schmalensee), in *High-Stakes Antitrust - The Last Hurrah?* R. Hahn, ed., Washington, DC: Brookings Institution Press, 2003.

“The Antitrust Economics of Multi-Sided Platform Markets,” *Yale Journal on Regulation*, 2003, 20(2).

“Everything You Wanted to Know about Two-Sided Markets,” (with P. Passell), *The Milken Institute Review*, Second Quarter 2003.

“Government Preferences for Promoting Open-Source Software: A Solution in Search of a Problem,” (with B. Reddy), *Michigan Telecommunications and Technology Law Review*, 2003, 9(2).

“Open-source Software Poses Challenges for Legal and Public Policy,” *Washington Legal Foundation*, 2003, 18(4).

“The Failure of E-Commerce Business: A Surprise or Not?” (with D. Garcia-Swartz and B. Martin-Keating), *European Business Organization Law Review*, 2002, 3.

“Tying in Platform Software: Reasons for a *Rule-of-Reason* Standard in European Competition Law,” (with A. Padilla and M. Polo), *World Competition Law and Economics Review*, 2002, 25(4).

“Who Owns Ideas? The War Over Global Intellectual Property,” *Foreign Affairs*, November/December 2002.

“The New Trustbusters—Brussels and Washington May Part Ways,” *Foreign Affairs*, January/February 2002, 81(1).

“Class Certification, the Merits, and Expert Evidence,” *George Mason Law Review*, 2002, 11(1).

“Class Certification and the Substantive Merits,” (with R. Bone), *Duke Law Journal*, 2002, 51(4).

“Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries,” (with R. Schmalensee), in *Innovation Policy and the Economy*, Vol. 2, A. Jaffe, J. Lerner and S. Stern, eds., Cambridge, MA: MIT Press, 2002.

“The Rise and Fall of Leaders in Personal Computer Software,” (with A. Nichols and B. Reddy), in *Microsoft, Antitrust and the New Economy: Selected Essays*, D. Evans, ed., Norwell, MA: Kluwer Academic Publishers, 2002.

“Why Does Microsoft Charge So Little for Windows,” (with A. Nichols and B. Reddy), in *Microsoft, Antitrust and the New Economy: Selected Essays*, D. Evans, ed., Norwell, MA: Kluwer Academic Publishers, 2002.

“Dodging the Consumer Harm Inquiry: A Brief Survey of Recent Government Antitrust Cases,” *St. John’s Law Review*, 2001, 75(3).

“Is Free Software the Wave of the Future?” *The Milken Institute Review*, Fourth Quarter 2001.

“Industry Regulation Through Antitrust: The Clinton Legacy and the Bush Future,” *Regulation*, Fall 2001.

“Clinton’s Brave New Business World,” *Regulation*, Fall 2001, 24(3).

“The Problem of Interchange Fee Analysis: Case Without a Cause?” (with C. Ahlborn and H. Chang), *European Competition Law Review*, 2001, 22(8).

“An Analysis of the Government’s Economic Case in *U.S. v. Microsoft*,” (with A. Nichols and R. Schmalensee), *Antitrust Bulletin*, Summer 2001.

“A Monopolist Would Still Charge More for Windows: A Comment on Werden,” and “A Monopolist Would Still Charge More for Windows: A Comment on Werden’s Reply,” (with B. Reddy, A. Nichols and R. Schmalensee), *Review of Industrial Organization*, 2001, 18(3).

“Competition Policy in the New Economy: Is European Competition Law Up to the Challenge?” (with C. Ahlborn and A. Padilla), *European Competition Law Review*, May 2001, No. 5.

“An Analysis of the Government’s Economic Case in *U.S. v. Microsoft*,” in *Antitrust Bulletin*, with A. Nichols and R. Schmalensee, Summer 2001. Reprinted in *Microsoft, Antitrust and the New Economy: Selected Essays*, D. Evans, ed., Norwell, MA: Kluwer Academic Publishers, 2002.

“*U.S. v. Microsoft*, Remedy or Malady?” (with K. Elzinga and A. Nichols), *George Mason Law Review*, 2001, 9(3). Reprinted in *Microsoft, Antitrust and the New Economy: Selected Essays*, D. Evans, ed., Norwell, MA: Kluwer Academic Publishers, 2002.

“Antitrust and the New Economy,” *Computer Industry Committee Newsletter*, Spring 2001.

“The Competitive Effects of the Collective Setting of Interchange Fees by Payment Card Systems,” (with H. Chang), *The Antitrust Bulletin*, Fall 2000.

“Be Nice To Your Rivals: How the Government Is Selling an Antitrust Case without Consumer Harm in *U.S. v. Microsoft*,” (with R. Schmalensee), in *Did Microsoft Harm Consumers? Two Opposing Views*, AEI-Brookings Joint Center for Regulatory Studies: Washington DC, May 2000.

“Consumers Lose if Leading Firms are Smashed for Competing,” (with R. Schmalensee), in *Did Microsoft Harm Consumers? Two Opposing Views*, AEI-Brookings Joint Center for Regulatory Studies: Washington DC, May 2000.

“Economics for the Third Industrial Revolution,” (with M. Leder), *Viewpoint, The Marsh & McLennan Companies Journal*, 1999, No. 1.

“All the Facts That Fit: Square Pegs and Round Holes in *U.S. v. Microsoft*,” *Regulation*, November 1999, 22(4).

“Joint Ventures: *MountainWest*,” (with R. Schmalensee), in *The Antitrust Revolution*, 3<sup>rd</sup> edition, J. Kwoka and L. White, eds., New York: Oxford University Press, 1998.

“Some Economic Principles for Guiding Antitrust Policy Towards Joint Ventures,” (with H. Chang and R. Schmalensee), *Columbia Business Law Review*, 1998, No. 2.

- “A Guide to the Antitrust Economics of Networks,” (with R. Schmalensee), *Antitrust*, Spring 1996.
- “Some Economic Aspects of Standards in Network Industries and Their Relevance to Antitrust and Intellectual Property Law,” (with B. Reddy), *Intellectual Property Antitrust, Practicing Law Institute*, July 1996, Vol. 1.
- “Defining Relevant Antitrust Markets with Special Application to Intellectual Property,” *Intellectual Property Antitrust, Practicing Law Institute*, July 1996, Vol. 1.
- “A Tailored Approach to Diversity Planning,” (with M. Oh), *HR Magazine*, 1996, 41(6).
- “Market Definition in Antitrust and Patent-Infringement Litigation,” *Practicing Law Institute*, July 1995, Vol. 1.
- “Economic Aspects of Payment Card Systems and Antitrust Policy Toward Joint Ventures,” (with R. Schmalensee), *Antitrust Law Journal*, Spring 1995.
- “Retrospective Bias in the Displaced Worker Surveys,” (with L. Leighton), *Journal of Human Resources*, Winter 1995.
- “Industry Dynamics and Small Firms,” in *Births and Start-up of Small Firms*, F. Cicogna, ed., Amsterdam: Kluwer Publishing Co., 1995.
- “Common Statistical Fallacies in Pattern-and-Practice Employment Discrimination Cases,” *American Employment Law Council*, October 1995.
- “Entrepreneurship and Small Business Growth: A Case Study,” (with Z. Acs), in *Advances in the Study of Entrepreneurship*, G. Libecap, ed., Greenwich, Ct.: JAI Press, 1993.
- “An Economic Approach to the Mitigation of Damages in Age Discrimination Cases,” *Advanced Employment Law and Litigation: ALI-ABA Course of Study Materials*, Vol. 2, Washington, DC: American Law Institute-American Bar Association Committee on Continuing Professional Education, 1992.
- “Small Business Formation and Success by Unemployed Workers,” (with L. Leighton), *Small Business Economics*, 1990.
- “Trade Associations and the Exchange of Price and Nonprice Information,” in *Annual Proceedings of the Fordham Corporate Law Institute: 1992 and EEC/U.S. Competition and Trade Law*, B. Hawk, ed., 1990.
- “An Estimated Model of Entrepreneurial Choice Under Liquidity Constraints,” (with B. Jovanovic), *Journal of Political Economy*, 1989, 97(4), 808-827. Reprinted in *Small Firms and Economic Growth*, International Library of Critical Writings in Economics, Z. Acs, ed., Cheltenham, UK: Edward Elgar Publishing, Ltd., 1995.

- “Some Empirical Aspects of Entrepreneurship,” (with L. Leighton), *American Economic Review*, 1989, 79(3), 519-535. Reprinted in *Entrepreneurship*, International Library of Critical Writings in Economics, M. Casson, ed., Hants, England: Edward Elgar Publishing Co., 1990.
- “Why Do Smaller Firms Pay Less?” (with L. Leighton), *Journal of Human Resources*, 1989, 24(4), 299-318. Reprinted in *Small Firms and Economic Growth*, Z. Acs, ed., Cheltenham, UK: Edward Elgar Publishing, Ltd., 1995.
- “Small Business Economics,” (with W. Brock), *Small Business Economics*, 1989, 1(1), 7-20. Reprinted in *Small Firms and Economic Growth*, Z. Acs, ed., Cheltenham, UK: Edward Elgar Publishing, Ltd., 1995.
- “Tests of Alternative Theories of Firm Growth,” *Journal of Political Economy*, 1987, 95(4), 657-674. Reprinted in *Small Firms and Economic Growth*, Z. Acs, ed., Cheltenham, UK: Edward Elgar Publishing, Ltd., 1995.
- “The Determinants of Changes in U.S. Self-Employment, 1968-1987,” *Small Business Economics*, 1989, 1(2), 111-119.
- “The Relationship Between Firm Growth, Size and Age: Estimates for 100 Manufacturing Industries,” *Journal of Industrial Economics*, June 1987. Reprinted in *The Empirical Renaissance in Industrial Economics*, R. Schmalensee, ed., London: Basil Blackwell, 1988.
- “Natural Monopoly and the Bell System: Response to Charnes, Cooper and Sueyoshi,” (with J. Heckman), *Management Science*, 1988, 34(1), 27-38.
- “Empirical Analysis of the Size Distribution of Farms: Discussion,” *American Journal of Agricultural Economics*, 1987, 69(2), 484-485.
- “The Differential Effect of Regulation Across Plant Size: Comment on Pashigian,” *Journal of Law and Economics*, 1986, 29(1), 187-200.
- “A Test for Subadditivity of the Cost Function with an Application to the Bell System,” *American Economic Review*, with J. Heckman, September 1986, 76(4), 856-858.
- “The Economics of Regulatory Tiering,” (with W. Brock), *RAND Journal of Economics*, 1985, 16(3), 398-409. Reprinted in *Small Firms and Economic Growth*, Z. Acs, ed., Cheltenham, UK: Edward Elgar Publishing, Ltd., 1995.
- “The Audience Revenue Relationship for Local Broadcast Stations,” (with F. Fisher and J. McGowan), *Bell Journal of Economics*, 1980, 11(2), 694-708.
- “Cross Country Prediction of Consumption Patterns,” *Economic Letters*, 1979, 3(1), 85-88.

## Testimony, 2002-Present

### Trial Testimony

*In the Matter of the Application of Securities Industry and Financial Markets Association For Review of Actions Taken by Self-Regulatory Organizations Administrative Proceeding File No. 3-15350.* Testified in support of the Securities Industry and Financial Markets Association (SIFMA), concerning whether securities exchanges face significant competitive constraints in setting their fees for depth-of-book data products. (April 2015).

*Qihoo 360 v. Tencent.* Testified in support of Tencent before the Supreme People's Court, People's Republic of China, concerning Qihoo 360's market definition and abuse of dominance claims against Tencent. (Written testimony filed September 2013 for November 2013 trial).

*Presidential Emergency Board No. 243, National Mediation Board, Case Nos. A-13569, A-13570, A-13572, A-13573, A-13574, A-13575, and A-13592.* Testified in support of the National Railway Labor Conference concerning wages, benefits, and work rules for railroad workers. (October 2012).

Case T-201/04, *Microsoft v. Commission of the European Communities.* Testified in support of Microsoft before the Court of the First Instance of the European Union concerning the Commission's determination that Microsoft had abused its dominant position by refusing to license certain information regarding its operating system and by tying a media player to its Windows operating system. (April 2006).

Case T-201/04, *Microsoft v. Commission of the European Communities.* Testified before the Court of the First Instance of the European Union in support of Microsoft's application for a suspension of remedies during its appeal of a Commission decision. (October 2004).

*In the Matter of the United Federation of Teachers, Local 2, AFT, AFL-CIO v. Board of Education of the City School District of the City of New York, Case Nos. M201-203, M201-215.* Testified for the defendant in an arbitration concerning teacher compensation. (December 2002).

### Deposition Testimony

*MarchBanks Truck Service, Inc., et al. v. Comdata Network, Inc., et al., Case No. 07-1078-JKG.* Testified for defendant concerning allegations of anticompetitive behavior with respect to Comdata's agreements with certain truck stop chains. (August 2013).

*Meredith Corporation et al. v. SESAC, Case No. 09 Civ. 9177 (PAE).* Testified for defendant concerning allegations of anticompetitive behavior with respect to the blanket licensing of local television music performance rights. (May 2013).

*South Atlanta Motor Sales, Inc. v. Southeast Toyota Distributors, LLC, Case No. 30-114-Y-00229-07.* Testified for the defendant in an arbitration concerning a racial discrimination claim. (November 2007).

*Mitchell v. Metropolitan Life Insurance Company*, No. 01-civ-2112 (S.D.N.Y.). Testified for the defendant concerning statistical analysis of wages and promotions by gender. (February 2003).

*Rodolico et al. v. Unisys Corporation*, CV-95-3653 (E.D.N.Y.). Testified for the defendant concerning statistical analysis of allegations of age discrimination in a layoff determination. (March 2002).

*Delores Kaminsky, et al. v. First Union Corporation*, No. 98-162 (E.D. Pa.). Testified for the defendant concerning the statistical evaluation of an age discrimination. (January 2002).

# **APPENDIX B**

## **Appendix B: Calculations Using the FCC/NTIA's National Broadband Map**

1. This appendix describes the methodology I used when performing calculations using the FCC/NTIA's National Broadband Map.

### **A. Calculations Related to the Number of Competing ISPS in Census Blocks Served by Each Company**

2. Start with the FCC data for December 31, 2014.<sup>1</sup> Limit the data to Census blocks whose populations are reported in the 2010 Census Summary File 1.<sup>2</sup> This excludes American Samoa, Northern Mariana Islands, Guam, and the U.S. Virgin Islands, and includes the fifty states, the District of Columbia, and Puerto Rico.
3. Unless otherwise stated, restrict the data to wired broadband offerings (TechCode not equal to 60 or 70) with download speeds greater than or equal to 10 Mbps (MaxAdDown greater than or equal to 10) and that are available to residential consumers (consumer equal to 1).
4. Use the holding company name (HocoFinal) to identify distinct providers. In each block, find the highest maximum advertised speed for each holding company offering service in that block.
5. For each block, get the population from the 2010 Census Summary File 1.

---

<sup>1</sup> Federal Communications Commission, "Broadband Deployment Data from FCC Form 477" available at <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>.

<sup>2</sup> U.S. Census Bureau, 2010 Census, Summary File 1, available at <http://mcdc.missouri.edu/cgi-bin/uexplore?/pub/data/sf12010>.

6. For each block, count the number of broadband providers other than Applicants that provide service with a maximum advertised download speed greater than or equal to 10 Mbps. If a competing provider has a download speed at least as great as the Applicants in that block, count it as providing an equal or faster download speed. Set a flag indicating whether the number of such competitors in that block is zero.
7. Then, aggregate over blocks. Specifically, calculate the population-weighted average number of wired alternatives, and count the total population in blocks where the number of such competitors equals zero. Limit the sample to blocks where the Applicants are present.

#### **B. Calculations Related to Fiber Development**

8. Start with the FCC data for December 31, 2014 and the NTIA data for December 31, 2010.<sup>3</sup> Limit the data to Census blocks whose populations are reported in the 2010 Census Summary File 1.
9. For the NTIA data, unless otherwise stated, use both of the two fixed broadband provider datasets (the one for large Census blocks and the one for small Census blocks), and exclude the mobile wireless broadband provider dataset. Restrict the data to fiber-based broadband offerings (transtech equal to 50) with download speeds 10 Mbps or greater (MaxAdDown between 7 and 11).

---

<sup>3</sup> Federal Communications Commission, "Broadband Deployment Data from FCC Form 477" available at <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>; National Telecommunications and Information Administration, "National Broadband Map Datasets," available at <http://www2.ntia.doc.gov/broadband-data>.

10. For the FCC data, unless otherwise stated, restrict the data to fiber-based broadband offerings (TechCode equal to 50) with download speeds greater than or equal to 10 Mbps (MaxAdDown greater than or equal to 10) and that are available to residential consumers (consumer equal to 1).
11. Use the holding company name (HocoFinal/Hoconame) to identify distinct providers. In both the 2010 and 2014 datasets, sum the number of individuals with access to fiber-based broadband for each of the distinct providers.
12. Merge the 2010 and 2014 datasets by holding company name and take the difference between the 2014 and 2010 number of individuals with access to fiber-based broadband.