

**Comcast's Acquisition of Time Warner Cable Would Result in an
Economically Significant Increase in the Magnitude of
Terminating Access Fees
for Online Video Distributors**

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I. Introduction and Summary

This paper addresses four related issues concerning the price effects of the merger in light of the evidence and arguments submitted to date and, in particular, following the FCC Economic Analysis Workshop.

First, I show there is robust evidence that Comcast has significant market power over access to its broadband subscribers and thus has the power to impose terminating access fees that significantly exceed the competitive level. Comcast can restrict access to its network by significantly degrading the video streaming quality that its subscribers receive for an OVD and can demand terminating access fees to end those restrictions.

Second, I show there is robust evidence that larger ISPs charge significantly higher terminating access fees. This evidence implies that Comcast's market power over terminating access fees for OVDs would increase significantly as a result of the merger. Based on this evidence, the estimated increase in terminating access fees resulting from the merger are much higher than the 5-10 percent increase often used as a threshold of significance in merger analysis.

Third, I show that there is no basis for dismissing these significant increases in prices based on the fees that Netflix agreed to pay Comcast to end the congestion that reduced the quality of Netflix's video streaming for Comcast's customers. It is unlikely that Comcast exercised its full market power in negotiating the terms of that contract, and thus the relevant base for assessing an increase in market power is likely to be a multiple of the value of the

Netflix contract.¹ Moreover, the OVD industry is likely to grow rapidly, so that even if the Netflix contract were the relevant base for assessing the increase in terminating access fees, the absolute size of the increase in terminating access fees would be very large when applied to a much larger industry. It is not appropriate to evaluate the economic significance of the increase in prices based on the size of a nascent industry that is expected to grow rapidly over time and on the basis of a contract negotiated in the midst of an impending merger application and regulatory proceedings.

Fourth, I show that under Professor Carlton’s theory that Comcast would not engage in vertical foreclosure because it could get its monopoly profit through charging OVDs² (a theory I have argued is incorrect), the merger would have significant price effects.³ “Under Professor Carlton’s theory, Comcast could charge OVDs about {{ }} of terminating access fees annually by 2022 {{ }}, and that amount could rise by an additional {{ }} due to increased market power from the merger.” The present value of the increased fees resulting from the merger exceeds {{ }}.⁴

¹ In negotiating the contract with Netflix, Comcast focused on breaking the zero price equilibrium for terminating access fees and setting a precedent with the Netflix contract. For further discussion see Declaration of David S. Evans, December 23, 2014 (“Evans Declaration II”), ¶¶ 109-111 and discussion below at pp. 19-20.

² Professor Carlton does not explain in what manner the fees would be imposed, but they will represent an access charge, regardless of *how* they are imposed.

³ His theory is wrong as applied to the facts of this matter, and is contradicted both by analyses conducted by Comcast’s senior management and presented to its Board, and by Comcast’s actions to treat OVDs as competitors rather than complements. See David S. Evans, “Contrary to Professor Carlton’s Theory, Comcast Has a Strong Incentive to Engage in Vertical Foreclosure,” March 18, 2015 (“Evans Vertical Paper”).

⁴ Comcast’s corporate structure influences the terminating access fees that it would charge OVDs and how these relate to the impact of the merger on competition. If Comcast were only acting as an ISP, it would charge OVDs terminating access fees to maximize its ISP profits. In those circumstances the merger results in a pure horizontal effect. The larger ISPs, as I have shown, charge a higher terminating access fee. Declaration of David S. Evans, August 25, 2014 (“Evans Declaration I”), ¶¶ 135-148; Evans Declaration II, ¶¶ 136-142. My analysis in this paper shows that, even if the Netflix contract reflected the full exercise of market power, the economic magnitude of the increase in terminating access fees would be significant. It is more likely that the Netflix contract does not reflect the full exercise of market power, so the annual terminating access fees would be even

To assess the magnitude of the increase in terminating access fees in this matter, the U.S. Department of Justice and Federal Communications Commission should consider the impact of the increase of these fees on the OVD industry over the long run. First, the OVD industry is nascent but is expected to continue to grow rapidly. Using current OVD revenues would greatly understate the economic impact of the merger. Second, the approving authorities cannot count on dynamic competition to discipline the impact of the merger on price in the longer run. Comcast faces little prospective competition in providing high-speed broadband service to American households. Furthermore, the merger would increase its long-run market power by raising the barriers to entry into providing high-speed broadband.⁵

II. Comcast's Market Power over Terminating Access Fees

In this section, I summarize the evidence and state of debate following the FCC Economic Analysis Workshop on whether Comcast has significant market power over terminating access. The evidence is robust and there appears to be little real disagreement

larger. Comcast also operates as an MVPD that competes with OVDs for viewers. In those circumstances, there are two possible price effects from the merger, which result from the interplay of vertical and horizontal forces. One possibility, advocated by Professor Carlton, is that Comcast enters into mutually beneficial contracts with OVDs under which the OVDs get access to subscribers and Comcast at least recovers its OVD profits. Declaration of Dennis W. Carlton, September 22, 2014 (“Carlton Declaration”), ¶¶ 11-12. In those circumstances, the merger increases those terminating access fees as a result of increased bargaining power and greater lost profits per subscriber as I discuss below. The other possibility is that Comcast determines that it cannot recover its lost profits from OVDs and therefore either does not enter into a contract with OVDs or charges terminating access fees that make it unprofitable for OVDs to seek access. In those circumstances, the merger increases terminating access fees because it increases the incentives and ability to foreclose OVDs, as I have explained earlier. Evans Declaration II, ¶¶ 155-197. The long-run effect of OVD growth on ISP entry exacerbates this effect. In these circumstances terminating access fees are just one weapon for foreclosing OVDs. One strategy is to make the terminating access fees prohibitively expensive.

⁵ Potential entrants face significant regulatory and legal obstacles to entry into local broadband markets some of which have resulted from Comcast's direct or indirect lobbying efforts. They also face a significant cost disadvantage because Comcast can secure much lower prices for distributing programming. The merger would increase Comcast's long-run market power by increasing its programming cost advantage as well as its bargaining position in interconnection negotiations. Evans Declaration I, ¶¶ 85-86, 152-175; Evans Declaration II, ¶¶ 136-142, 194. The merger would increase its long-run market power by maintaining and raising the barriers to entry into providing high-speed broadband. Evans Declaration I, ¶ 179; Evans Declaration II, ¶¶ 193-197.

remaining on this point between Comcast's economists and the economists for the opposing parties.⁶

Comcast has significant market power over the terminating access fees paid by OVDs because it provides the only way that OVDs can provide long-form videos to households that use Comcast as their broadband provider. There is no credible evidence that competition between broadband providers limits that market power, and significant credible evidence that it does not. Households have limited choices and high switching costs, and they seldom switch.⁷

⁶ Dr. Israel still maintains that Comcast is disciplined because consumers could and would switch ISPs if the quality of OVD service declined but, as I discuss further below, he has no credible evidence to support this point.

⁷ Evans Declaration I, ¶¶ 64-71, 78-89; Evans Declaration II, ¶¶ 85-89. Dr. Israel has filed an ex parte submission in which he elaborates on his claims regarding the willingness of consumers to switch ISPs. Comcast Ex Parte Submission, February 23, 2015, Appendix A. I address two of his main points here.

First, he continues to rely on the Global Strategy Group (GSG) survey commissioned by Comcast for the purposes of this proceeding, though he now concedes that "I recognize that the GSG data are not actual marketplace outcomes and thus do not perfectly predict how many consumers would actually switch." Comcast Ex Parte Submission, February 23, 2015, Appendix A, at pp. 5-6. The ex parte filed by GSG is even more equivocal about the value of the survey results, noting that "[o]pinion research reflects what people say they might do in a hypothetical situation *which may deviate in substantial ways from what happens in real-world situations.*" Comcast Ex Parte Submission, February 19, 2015, Global Strategy Group Memorandum, at p. 1 (emphasis added). This is a somewhat remarkable concession and it is difficult to take the survey results seriously in light of that alone. I explained some of the flaws in their approach in my earlier declaration.

In addition, as I have noted, the finding of the survey that the vast majority of the subscribers would switch to a different ISP in the face of, for example, degradation of OVD streaming is generally implausible and flatly inconsistent with lack of such switching when Comcast did degrade the quality of Netflix streaming. Dr. Israel argues that this degradation happened while AT&T and Verizon also degraded the quality of Netflix streaming, so that it does not provide a test of degradation of Netflix by Comcast alone. Comcast Ex Parte Submission, February 23, 2015, Appendix A, at pp. 4-5. If Dr. Israel were correct that this was the reason for the lack of switching, then that indicates that degradation at the same time by the largest ISPs is a coordinated strategy they can undertake without significant costs. But Dr. Israel is not correct that this was why the real-world outcome differed from the GSG survey results. There were many regions in which Comcast does not compete with AT&T or Verizon, and the vast majority of Comcast broadband subscribers did not abandon Comcast in those regions, so that it is wrong to ascribe the lack of switching to the degradation by AT&T and Verizon.

I also note that GSG's claim in its ex parte disputing my explanation of why their survey results were internally inconsistent fails to address my criticism and is wrong. Comcast Ex Parte Submission, February 19, 2015, Global Strategy Group Memorandum, at p. 2. GSG refers to the responses to Questions 12 and 13 in its survey. The point I made in my declaration was that [[]] of the respondents who answered that they had a wireless data plan in Question 13 answered "no" in Question 2, to which they should have answered "yes" because they had a wireless data plan such as for a smartphone. The GSG ex parte simply fails to address this.

Comcast has claimed, however, that it cannot prevent OVDs from traversing its network and reaching those subscribers. In particular, Comcast has argued that Netflix could have used more than 40 settlement-free paths during the “congestion episode” in late 2013 and early 2014, and decided not to use them, and therefore chose to harm itself.⁸ As described below, Dr. Israel has conceded that Comcast was determined to charge Netflix interconnection fees, directly or indirectly, and had no intention of allowing Netflix to use settlement free paths. There is robust evidence that Comcast has charged Netflix terminating access fees for accessing Comcast customers over the “last-mile” of its network and that Comcast has either charged terminating access fees to CDNs and transit providers that Netflix has relied on, has congested their connections and induced them not to want to do business with Netflix, or has demanded that the provider cease accepting Netflix traffic.⁹

Second, Dr. Israel does not appear to dispute my analysis showing that his calculation of a {{ }} annual Comcast churn rate among non-movers was vastly overstated and should have been a {{ }} rate for voluntary churn. Instead, Dr. Israel continues to assert that involuntary churn is as relevant as voluntary churn. Comcast Ex Parte Submission, February 23, 2015, Appendix A, at pp. 6-7. A substantial portion of involuntary Comcast churn is from disconnections by Comcast for non-payment. It is implausible that a concern about the impact of degradation on this population of non-payers is a significant restraint on Comcast’s actions. Dr. Israel also asserts that churn from consumers who moved is relevant. . Comcast Ex Parte Submission, February 23, 2015, Appendix A, at p. 6. Churn rates inclusive of customers who moved greatly overstates the likelihood of switching for the vast majority of customers who do not move. Moreover, Comcast does not have a chance to compete for customers who move outside of its footprint, so the existence of such movers does not impose any constraint on Comcast’s actions.

⁸ Comcast revised the claim of “more than 40 settlement free paths” to exclude nine of those paths in an ex parte submission to the FCC on December 8, 2014. Letter from Francis M. Bruno to Marlene H. Dortch, FCC, MB Docket 14-57 (December 8, 2014), at pp. 2-3. Then, at the FCC Economic Analysis Workshop, they abandoned the claim.

⁹ For a discussion of this strategy on the part of the largest ISPs, see Level 3 Communications Inc., “Response to Request for Information from Level 3 Communications, Inc.,” February 11, 2015, at p. 4 (“The key trend that Level 3 has observed in [the area of ISP network management practices] is that, as the Internet has grown, and particularly as the economic importance of the Internet has grown, the large eyeball ISPs have increasingly attempted to leverage their control over access to users to extract tolls.... Notably, in order for an ISP to be successful in demanding a toll, it must ensure that there are no non-toll (i.e., settlement-free) routes into its network that can offer sufficient capacity to take the traffic. And so a related trend is that some of the largest ISPs have, for the last several years, despite repeated requests, refused to increase interconnection capacity with Level 3 and other Transit Service and CDN providers unless Level 3 or these others pay a toll.”).

Virtually all wired ISPs in the US provide enough port capacity to enable their subscribers to obtain the content they have requested from OVDs and other edge providers. They do not charge OVDs or other edge providers for that port capacity. Nor do they impose any other charges on OVDs or other edge providers for carrying traffic between the edge of the network where that traffic originates and the household where it terminates.¹⁰

Comcast did something different. It refused to provide enough port capacity for carrying Netflix traffic requested by Comcast's subscribers unless CDNs and transit providers that Netflix relied on, or Netflix itself, paid interconnection fees. As a result of this strategy, the video quality of Netflix's traffic for Comcast subscribers declined precipitously at the end of 2013. The degradation of Netflix's traffic continued until Netflix agreed to pay Comcast to provide enough port capacity for Netflix customers that relied on Comcast. It entered into such a contract on {{ }}.¹¹

Comcast claimed that Netflix did not have to pay terminating access fees because it could have used "more than 40 settlement-free peers" to access Comcast's network.¹²

According to Dr. Israel's declaration:

¹⁰ Evans Declaration II, ¶¶ 63-66; Declaration of Ken Florance, August 25, 2014 ("Florance Declaration I"), ¶¶ 43, 60; Declaration of Ken, December 23, 2014 ("Florance Declaration II"), ¶ 15. According to Level 3, "With the exception of Comcast, Level 3's Interconnection Agreements with the 19 ISPs identified in response to Request 1 [by the FCC] are either Settlement-Free Peering agreements or Transit Service agreements where Level 3 is the selling party." Level 3 Communications Inc., "Response to Request for Information from Level 3 Communications, Inc.," February 11, 2015, p. 1.

¹¹ As Level 3 has observed, "And when commercial entities, like Netflix or Major League Baseball, sell a streaming video service that critically depends on their customers having reliable, uncongested access, those commercial entities will have no choice but to pay a toll if the ISP controls access to a sufficient number of customers." Level 3 Communications Inc., "Response to Request for Information from Level 3 Communications, Inc.," February 11, 2015, p. 4.

¹² "Comcast reaches well over 99 percent of the Internet's networks through more than 40 settlement-free peers and numerous other commercial interconnection agreements, and across our interconnection partners there is more than enough capacity into our network - even enough to carry all of Netflix's Comcast-bound traffic-which is available at reasonable, market-based prices." Comcast Corp., Opposition to Petitions to Deny and Response

“[T]he interconnection charges that lie at the heart of [the] theories of harm are ... literally zero for more than 40 ‘settlement-free’ paths into the Comcast network.”¹³

“Most simply, the existence of over 40 *settlement-free paths* into the Comcast network is inconsistent with the claim that Comcast can impose anti-competitive harms on interconnection”¹⁴

“[T]he fact that there are over 40 settlement-free paths into the Comcast network demonstrates that having a large number of broadband customers does not parlay into the ability to charge high prices for interconnection services. ...[A] claim that Comcast could force higher prices on all paths even though more than 40 are settlement-free today-would depend on an implausibly large and entirely unproven increase in bargaining power over the entire Internet backbone due to the proposed transaction.”¹⁵

Ken Florance and I explained that these claims were wrong in our earlier submissions.

In particular, I noted that Comcast has a closed private network and that Comcast can, and does, limit traffic between the edge of its network and the households on its network.

Dr. Israel retracted these claims concerning the availability of settlement-free paths to Netflix at the FCC Economic Analysis Workshop as the following exchange demonstrates.¹⁶

[Israel:] “In the meantime, Comcast was saying we’re negotiating with you. We don’t think you should have interconnection for free. We’re not going to let you ...if you try to go somewhere else and backdoor that, ultimately if we see the Netflix traffic, we’re in the middle of a commercial negotiation over what the price should be.”¹⁷

In response to this, I said,

to Comments, September 23, 2014, pp. 209-2010, quoting Declaration of Kevin McElearney, September 19, 2014 (“McElearney Declaration”), ¶ 3. See also Declaration of Mark A. Israel, September 22, 2014 (“Israel Declaration II”), ¶ 52, also quoting McElearney Declaration, ¶ 3.

¹³ Israel Declaration II, ¶ 6.

¹⁴ Israel Declaration II, ¶ 12.

¹⁵ Israel Declaration II, ¶ 133.

¹⁶ As noted above in footnote 8, Comcast revised its count from {{ }} to {{ }} and its economists abandoned the claim altogether at the FCC Economic Analysis Workshop.

¹⁷ Mark Israel, FCC Economic Analysis Workshop, January 30, 2015, Transcript (“Workshop Transcript”), pp. 92-93.

[Evans:] “I think what I heard Mark say is that we agree that Comcast’s position is that Netflix needed to pay a terminating access fee, either directly to Comcast or indirectly to someone else that had an interconnection terminating access fee deal with Comcast. At least I think that’s what I heard. So let me continue and maybe Mark can tell us whether I misunderstood that.”¹⁸

Dr. Israel then came back to respond to me. He said,

[Israel:] “... I don’t disagree that Comcast with Netflix—Comcast and other ISPs with Netflix and others have negotiated with them in order to you know, charge a – in order to charge a fee for traffic that coming onto the last mile of the network. I don’t disagree the negotiation was over Comcast’s view that Netflix should pay Comcast something.”¹⁹

Comcast and Dr. Israel also argued that Comcast was saving Netflix money.²⁰ That is an odd claim in light of the lengths that Comcast went to impose interconnection fees on Netflix and the lengths to which Netflix went to avoid these. At the FCC Economic Analysis Workshop Dr. Israel appears to have repeated this claim, although it isn’t entirely clear, and offered apples-to-oranges comparisons to suggest that Netflix saved money from the Comcast deal.²¹

Dr. Israel has reiterated his claims in an ex parte submission.²² He continues to rely on the flawed comparison of the costs to Netflix of serving traffic to Comcast subscribers with the costs to Netflix of serving traffic to very small ISPs that do not connect at Internet Exchange Points (IXPs).²³ This is like arguing that if, for example, a soda manufacturer uses its own trucks to distribute soda directly to the warehouses of supermarket chains but chooses to pay an

¹⁸ David Evans, Workshop Transcript, p. 95.

¹⁹ Mark Israel, Workshop Transcript, pp. 98-99.

²⁰ Israel Declaration II, ¶ 134.

²¹ Mark Israel, Workshop Transcript, pp. 65-66.

²² Comcast Ex Parte Submission, February 23, 2015, Appendix B.

²³ Comcast Ex Parte Submission, February 23, 2015, Appendix B., at pp. 1-4.

intermediary to distribute soda to small corner stores that do not have warehouse facilities, it would be appropriate to compare the cost of distribution to the largest supermarket chain with the cost of distribution to small corner stores.

To take the analogy further, Dr. Israel is saying, following my example, that if the four largest supermarket chains charge an access fee and the fees increase with the size of the chain, while other smaller supermarket chains charge a zero fee, we should not infer from that that there is a correlation in the size of the supermarket chain with the level of access fees charged. Rather, he points to the fact that there are additional costs of distribution to small corner stores and the need to pay intermediaries to reach those stores as equivalent to the access fees charged by the largest supermarket chains. Even if it were true, the fact that it may be more expensive to distribute soda to small corner stores than it is to distribute soda to the largest supermarket chain after accounting for its access fee does not mean we should not be concerned about the impact on access fees of a merger of the first and third largest supermarket chains. Dr. Israel is wrong to focus on total costs rather than on access fees and he is wrong to compare dealing with the largest firms to dealing with extremely small ones without accounting for other differences in the transactions.²⁴

²⁴ Dr. Israel's comparison is so inappropriate that the figures he uses are beside the point, but I will also note that he uses the wrong figures for his comparisons. He compares the rough estimate of {{ }} per Mbps that I reported that Netflix pays transit providers to reach small ISPs that do not interconnect at IXPs with his calculation of an incremental {{ }} per Mbps that Netflix pays Comcast as a terminating access fee. As I noted in my declaration, all the traffic cost figures I reported, including the {{ }} per Mbps fee to transit providers, were on an industry standard 95th percentile basis. Evans Declaration II, footnote 175. See also, Evans Declaration II, footnote 108. In calculating the {{ }} per Mbps Comcast fee, Dr. Israel uses a different methodology, estimating the cost based on contracted capacity. Contracted capacity differs from 95th percentile capacity in two significant ways. First, 95th percentile capacity is based not on peak capacity but rather on the 95th percentile of capacity used when measuring usage at frequent intervals. As I noted in my declaration, {{ }} Second, 95th percentile capacity is based on actual usage, which will differ from contracted capacity. Thus the {{ }} per Mbps Comcast access fee calculated by Dr. Israel is

I reported the apples-to-apples comparison of access fees in my second declaration.²⁵

Netflix connects directly to Comcast at an IXP. Netflix also connects directly to several hundred other ISPs at IXPs. In all those cases, for Comcast as well as the several hundred other ISPs, Netflix bears the entire cost of getting traffic to the IXP using its CDN. The only difference between these several hundred ISPs and Comcast is that these ISPs do not charge Netflix a terminating access fee and Comcast does. Netflix therefore pays substantially more to get traffic to Comcast subscribers than to the subscribers of these other ISPs by the amount of the terminating access fee.

III. The Relationship between Terminating Access Fees and Number of ISP Subscribers

There is robust evidence that larger ISPs charge higher terminating access fees. Dr. Israel has conceded the fact of this relationship. He has offered no credible economic evidence in support of the claim that prices are higher because larger ISPs offer some value other than access to more subscribers.

Three independent sources of evidence show there is a significant relationship between the size of terminating access fees and the number of ISP subscribers.

Netflix Interconnection Deals with ISPs. The Netflix interconnection deals show that the four largest wired ISPs are able to charge a positive terminating access fee, and that no smaller wired ISP is able to charge an access fee greater than zero. Among the four largest wired ISPs, the highest fee is charged by the largest (Comcast) and the lowest fee is charged by

understated if comparing fees on a 95th percentile basis. The estimate I reported in my declaration of {{ }} per Mbps is appropriate for the comparisons I reported.

²⁵ Evans Declaration II, Table 5 and ¶¶ 220-222.

the smallest ({{ }}). All smaller ISPs charge nothing. I submitted a Tobit regression that shows that there is a highly significant positive relationship between the terminating access fees and the share of subscribers.

Comcast and Time Warner Cable Interconnection Deals. The Comcast and Time Warner Cable interconnection deals show that Comcast charges the same edge providers roughly {{ }} as Time Warner Cable on average. Comcast has 1.8 times as many subscribers as Time Warner Cable. These interconnection deals involve {{ }}.

Charter, which is smaller than Comcast and Time Warner Cable, {{

}}.²⁶ In addition there is {{ }}.²⁷

The Cogent Interconnection Deals. Professor Farrell obtained data on the prices Cogent charges {{ }} ISPs for peering, the number of subscribers at each ISP, and the number of cities at which Cogent interconnects with each ISP. He found that {{

}}²⁸

²⁶ For further details of the interconnection agreements for each of the three ISPs, see Evans Declaration II, ¶¶ 130-131 and Table 2.

²⁷ In addition, {{ }}.

²⁸ Declaration of Joseph Farrell, August 25, 2014 (“Farrell Declaration I”), ¶¶ 172-176; Declaration of Joseph Farrell, December 23, 2014 (“Farrell Declaration II”), ¶¶ 58-67. Dr. Farrell showed that there were significant data errors in Dr. Israel’s econometric analysis.

There is no dispute among the economists working for the merging parties and the opposing parties that large wired ISPs charge higher interconnection fees. According to Dr. Israel, “... I don’t disagree with the numbers that ... indicate that the {{
}}.”²⁹ He also says, “...it is true today that larger ISPs in some cases like this charge higher interconnection payments.”³⁰

Dr. Israel claims that these higher fees are a “reflection of quality and capacity.” However, in the case of the Netflix interconnection agreements he has provided no evidence that Netflix received any service from the four wired ISPs it paid—other than agreement to do what more than 400 other wired ISPs of varying size did at no charge: ensure there is enough port capacity to enable ISP subscribers to obtain high quality downloads of content those ISP subscribers requested. As Ken Florance of Netflix explained in his declaration, “[T]he only ‘quality’ of an interconnection service we take into consideration . . . is whether the ISP can provide sufficient bandwidth to fulfill the needs of our subscribers. That quality . . . does not vary across ISPs, and certainly did not vary across the four ISPs we ultimately were forced to pay.”³¹ In other words, Netflix was simply interested in obtaining necessary port capacity. This is confirmed in an internal Comcast email from {{
}}, stating that {{

²⁹ Mark Israel, Workshop Transcript, p. 56.

³⁰ Mark Israel, Workshop Transcript, p. 56.

³¹ Florance Declaration II, ¶ 21. See also *id.* ¶¶ 17-21.

}}³²

Dr. Israel has also provided no economic or technical evidence that the number of interconnection points could account for the price differences between the very large ISPs. For example, he has provided no meaningful evidence that Comcast is providing edge providers something more than {{

}}—other than access to more subscribers.

The only empirical evidence Dr. Israel has put forward does not support his quality claims.³³ Professor Farrell has shown that Dr. Israel's analysis was subject to significant data errors that once corrected reverse Dr. Israel's result.³⁴ But even aside from these data errors, Dr. Israel's original analysis provides no statistically reliable evidence that the number of interconnection points explains the differences in prices. His interconnection variable was not statistically significant at the five percent level typically used by economists in professional and consulting work including on antitrust matters; he claimed it was statistically significant based on using a 10 percent level of significance not ordinarily used in econometric work.

He claimed at the FCC Economic Analysis Workshop that his regression nevertheless proved that the number of interconnection points was a better explanation than subscribers because the inclusion of this variable rendered the subscriber variable insignificant. However,

³² {{

}}

³³ Dr. Israel has filed an ex parte submission on this issue. Comcast Ex Parte Submission, February 23, 2015, Appendix B. However, the fundamental problem remains. He has included a variable that is highly correlated with the number of subscribers in the regression, without any significant support for why that variable should have a significant effect on price. He then claims that the coefficient on the number of interconnection points is statistically significant when in fact it is not at the significance levels that economists ordinarily use.

³⁴ Farrell Declaration II, ¶¶ 58-67.

in his regression neither the interconnection variable nor the subscriber variable is statistically significant at the 5 percent level and the coefficients on the interconnection and subscriber variable are statistically indistinguishable as a result of their both having very large standard errors.³⁵ They are jointly significant at the one percent level. All of this simply points to the fact that the number of interconnection points is a proxy for the number of subscribers. In fact, in response to a query from the FCC, Dr. Israel reported that the correlation between the number of interconnection points and the number of subscribers is almost 90 percent.³⁶

The evidence therefore shows robustly that ISPs that control more subscribers can charge significantly larger terminating access fees. The price-size relationship shows that the impact of the merger would be far greater than the 5-10 percent increase often used in merger analysis. Based on the Netflix contracts with wired ISPs, I showed that the merger would result in an increase of {{ }} percent in the overall terminating access fees for the combined entity. The fact that Comcast {{ }} also is consistent with that range of increases. There is no basis in the evidence to conclude that the increase in price would be anything other than “significant” as that term is used in merger analysis. In fact, the evidence indicates that the likely percentage increases are an order of magnitude higher than those that ordinarily cause concern.

³⁵ A test of the equality of the coefficients has a p-value of 0.43.

³⁶ Israel reports a correlation of 0.89 between size and the number of interconnection points. Comcast Ex Parte Submission, December 2, 2014, p. 4.

IV. Netflix’s Interconnection Payments to Comcast Are Not a Conceptually or Empirically Valid Base for Evaluating the Economic Significance of the Merger

Comcast’s economists claim that we can brush all of these findings aside because Netflix can afford the {{ }} that Comcast is charging it for sufficient port capacity through {{ }} and that these charges are “tiny”.³⁷ That claim is not consistent with sound antitrust economics or generally accepted methods for merger analysis.³⁸

A. Terminating Access Fees Are Economically Significant Input Costs for the OVD Industry

The annual terminating access fees charged by Comcast and Time Warner Cable constitute about {{ }} percent of Netflix revenue.³⁹ I have previously demonstrated, and summarize below, why the fees set in these agreements do not reflect the full exercise of Comcast’s market power. But even at these levels, this is not a trivial amount. For example, it

³⁷ Carlton Declaration, ¶ 14; Dennis Carlton, Workshop Transcript, pp. 32, 51-52, 86-89; Mark Israel, Workshop Transcript, p. 56.

³⁸ Professor Carlton and Dr. Israel also use the Netflix contract to argue that it shows that Comcast does not have significant market power

³⁹ This figure is based on the Comcast and Time Warner Cable interconnection fees to Netflix of {{ }} per year and {{ }} per year as specified in the respective Comcast and Time Warner Cable contracts with Netflix. To express the Netflix fees to Comcast and Time Warner Cable as a proportion of revenues, I divide the {{ }} per year Comcast charges Netflix and the {{ }} per year Time Warner Cable charges Netflix by the portion of Netflix revenue ({{

}}) attributable to Comcast and Time Warner Cable subscribers, respectively. This gives average fees of {{ }} percent of OVD revenues for Comcast and {{ }} percent of OVD revenues for Time Warner Cable, for a weighted average of {{ }} percent for the two companies. Note that this weighted average of {{ }} percent can also be derived by dividing the Comcast and Time Warner Cable’s combined terminating access fee ({{ }}) by the amount of Netflix’s revenue that can be attributed to the two companies combined, without accounting for divestitures. If instead I divided by the amount of Netflix’s revenue attributable to the two companies’ subscribers, net of subscribers to be divested, the resulting percentage fee would rise to {{ }} percent. Using {{ }} percent as the terminating access fee (rather than {{ }} percent) would imply even higher Comcast fees to the OVD industry as a whole.

is around the level of payment card interchange fees that have been the subject of highly contentious litigation between retailers and payment card networks.⁴⁰

That input cost would increase significantly following the merger. Based on the price-size calculations above showing a predicted {{ }} percent increase, it would {{ }}, to {{ }} percent of revenue for OVDs entering into new contracts, even setting aside the fact that we are starting from a level of fees that does not reflect the full exercise of Comcast's market power.⁴¹ Terminating access fees would therefore be an even more significant input cost for OVDs after the merger.

B. Terminating Access Fees and the Merger-Specific Increase Would Grow Rapidly Over Time

The OVD industry is relatively new and is expected to expand considerably over time. It is therefore not appropriate to assess the economic significance of the increase in the terminating access fees based on the current size of the industry. Although there are few publicly available estimates of the growth of the domestic OVD industry, several analysts have reported estimates of the growth of the global OVD industry, and these provide a guide as to

⁴⁰ For the same reason, in the analysis of a consumer product merger one would not dismiss a price increase for a consumer product because it constitutes a small percent of overall household expenditures. Consumers spend around 0.8 percent of their total household expenditures on dairy products. U.S. Bureau of Labor Statistics, Consumer Expenditure Survey, 2011, available at <http://www.bls.gov/cex/csxstnd.htm>. We would not dismiss the price effect of a merger of yogurt manufacturers because it accounts for a "tiny" percent of household spending.

⁴¹ These estimates only refer to price increases resulting from the horizontal effects of the merger under the assumption that Comcast does not engage in vertical foreclosure strategies. If it did engage in vertical foreclosure strategies one such strategy could involve charging a fee higher than the profit-maximizing fee as an ISP or charging a fee higher than the profit-maximizing fee as an integrated MVPD and ISP under Professor Carlton's theory. Comcast would set a fee higher than the profit-maximizing fee because it would benefit from foreclosure of OVDs, in the form of higher MVPD and ISP profits by limiting competition from OVDs.

the growth of the US industry. They ranged from 15 percent for 2014-2018, 25 percent for 2013-2018, and 21 percent for 2010-2020.⁴²

The shift towards the OVD model accelerated in late 2014. Late last year a number of major players announced that they were entering the OVD business.

- On October 15, 2014, HBO announced that the company will offer a stand-alone streaming service in 2015 (subsequently named “HBO Now”).⁴³ A January 2015 survey found that 17 percent of broadband households would “likely subscribe” to the service.⁴⁴

⁴² Infonetics forecasted that global OVD pay-TV subscription revenue will grow from \$5.8 billion in 2014 to just over \$10 billion in 2018. That is a compounded annual growth rate of 15 percent. Infonetics, “Over-the-Top (OTT) Pay TV Expected to Soar to \$10B by 2018; Netflix, Hulu Just the Beginning,” November 19 2014, available at <http://www.infonetics.com/pr/2014/1H14-Pay-TV-Services-and-Subscribers-Market-Highlights.asp>. PwC forecasted that global OVD TV streaming subscriptions will grow from \$3.3 billion in 2013 to \$10.1 billion in 2018. That is an annual growth rate of 25 percent. Steven Rosenbaum, “Digital Video and OTT Poised for Dramatic Growth,” Forbes, June 9, 2014, available at <http://www.forbes.com/sites/stevenrosenbaum/2014/06/09/digital-video-and-ott-poised-for-dramatic-growth/>. Digital TV Research has projected that U.S. OVD video revenues (including subscriptions, advertising, and other revenues) will grow from \$2.3 billion in 2010 to \$15.5 billion in 2020. That is a compounded annual growth rate of 21 percent over that decade Digital TV Research, “OTT Revenues to Rocket to \$42 Billion by 2020,” September 24, 2014, available at <http://www.digitaltvresearch.com/ugc/press/100.pdf>. In its non-subscription data, Digital TV Research does not report the split between growth over 2010-2014 and over 2014-2020 for U.S. total OVD revenue. They report figures for total U.S. OVD revenue for 2010 and for 2020. They also report worldwide OVD revenues for 2010, 2014, and 2020. For the U.S. OVD revenue estimate, I have assumed that the share of the total 2010-2020 U.S. OVD growth that occurred in 2010-2014 was the same as the share of world-wide OVD revenue growth that occurred in 2010-2014. This gives us an estimate of total US OVD revenue in 2014 of \$7.0 billion, compared to \$2.3 billion in 2010 and \$15.5 billion in 2020. The estimated growth rate for 2014-2020 based on this calculation is 14.3 percent.

⁴³ Time Warner, “HBO Chairman and CEO Richard Plepler Announces HBO to Offer a Stand-Alone HBO Streaming Service in 2015,” October 15, 2014, available at <http://www.timewarner.com/newsroom/press-releases/2014/10/15/hbo-chairman-and-ceo-richard-plepler-announces-hbo-to-offer-a>; Cynthia Littleton, “HBO to Launch Standalone Over-the-Top Service in U.S. Next Year,” Variety, October 15, 2014, available at <http://variety.com/2014/tv/news/hbo-to-launch-over-the-top-service-in-u-s-next-year-1201330592/> (“...HBO’s unambiguous announcement of its intention to embrace the [stand-alone OTT] opportunity still caught the biz by surprise.”); Time Warner, “HBO to Launch Standalone Premium Streaming Service in April,” March 9, 2015 available at [http://www.timewarner.com/newsroom/press-releases/2015/03/09/hbo-to-launch-standalone-premium-streaming-service-in-april](http://www.timewarner.com/newsroom/press-releases/2015/03/09/hbo-to-launch-standalone-premium-streaming-service-in-april;);

⁴⁴ Amadou Diallo, “HBO’s Web-Only Service Projected to be a Huge Hit,” Forbes, January 22, 2015, available at <http://www.forbes.com/sites/amadoudiallo/2015/01/22/hbos-web-only-service-projected-to-be-a-huge-hit/>.

- On October 16, 2014, CBS announced “CBS All Access,” an OTT service delivering live streaming and full seasons of current shows for \$5.99 per month.⁴⁵
- On November 13, 2014 Sony announced PlayStation Vue, a cloud-based TV service.⁴⁶
- On January 5, 2015, DISH announced plans for a 2015 Q1 launch of Sling TV, a stand-alone OTT live-TV streaming service that includes 12 channels (including ESPN) for \$20 per month.⁴⁷
- Apple is reported to be in the process of launching an OTT service in the fall of 2015, offering “consumers a ‘skinny’ bundle with well-known channels like CBS, ESPN and FX, while leaving out the many smaller networks in the standard cable TV package.”⁴⁸

Analysts expect more entry.⁴⁹ If the OVD industry were to displace much of the existing MVPD industry, as some commentators expect, these growth figures are significantly understated.

⁴⁵ CBS Corporation, “CBS Bring Programming Direct to Consumers with New Multi-Platform Digital Subscription Service,” October 16, 2014, available at <http://www.cbcorporation.com/news-article.php?id=1096>.

⁴⁶ Sony, “Sony Network Entertainment International LLC (SNEI) and Sony Computer Entertainment Inc. (SCE) Today Unveiled Playstation Vue, a Pioneering New Cloud-Based TV Service that Reinvents the Television Experience,” November 13, 2014, available at <http://www.sony.com/SCA/company-news/press-releases/sony-corporation-of-america/2014/sony-network-entertainment-international-and-sony-.shtml>; GigaOm, “A Sneak Peak at Sony’s Playstation Vue Internet TV Service,” January 28, 2015, available at <https://gigaom.com/2015/01/28/a-sneak-peek-at-sonys-playstation-vue-internet-tv-service/>.

⁴⁷ DISH, “Sling TV to Launch Live, Over-the-Top Service for \$20 Per Month,” January 5, 2015, available at <http://about.dish.com/press-release/products-and-services/sling-tv-launch-live-over-top-service-20-month-watch-tvs-tablets>.

⁴⁸ Keach Hagey, Shalini Ramachandran and Daisuke Wakabayashi, “Apple Plans Web TV Service in Fall,” March 17, 2015, available at <http://www.wsj.com/articles/apple-in-talks-to-launch-online-tv-service-1426555611>. The report noted that “For now, the talks don’t involve NBCUniversal, owner of the NBC broadcast network and cable channels like USA and Bravo, because of a falling-out between Apple and NBCUniversal parent company Comcast Corp., the people familiar with the matter said. Apple and Comcast were in talks as recently as last year about working together on a streaming television platform that would combine Apple’s expertise in user interfaces with Comcast’s strength in broadband delivery. Apple came to believe that Comcast was stringing it along while the cable giant focused on its own X1 Web-enabled set-top box, the people said. One media executive said it may be difficult for Apple to launch a service without NBCUniversal channels.”

⁴⁹ Kenneth Ziffren, “Who Wins the Race to Go Over-the-Top,” March 20, 2015, Hollywood Reporter, available at <http://www.hollywoodreporter.com/news/power-lawyer-ken-ziffren-who-780897>; Claire Atkinson, “Amazon Plans a Streaming-Video Alternative,” November 21, 2014, New York post, available at <http://nypost.com/2014/11/21/amazon-plans-a-streaming-video-alternative/>.

C. Comcast’s Contract with Netflix Does Not Reflect the Full Exercise of Market Power and Is Therefore Not the Relevant Base for Assessing the Economic Magnitude of the Price Increases

I showed above that the terminating access fees based on the Netflix contract amount to {{ }} percent of OVD revenue. It is likely the Comcast did not exercise its full market power in negotiating the contract with Netflix. It is likely that Comcast would charge OVDs much higher terminating access fees in the future, in the absence of the merger, so that the base for assessing the increase in the terminating access fees resulting from the merger would be larger. In other words, the relevant base for calculating the economic significance of the terminating access fees is likely to be a multiple of the {{ }} percent and the increase in the terminating access fees is therefore likely to be a multiple of the {{ }} percent.

Comcast entered into a contract with Netflix over terminating access fees on {{ }}. That was {{ }} days after Comcast publicly announced its proposed acquisition of Time Warner Cable.⁵⁰ Comcast therefore faced a strategic choice: if it charged a higher fee reflecting its full market power, it would be providing opponents of the merger clear evidence that it had significant market power over interconnection fees. It had a significant incentive to charge a lower fee than it could to increase the likelihood of the merger being approved. In addition, independent of the timing of the merger, the pendency of proceedings regarding the Open Internet Order provided an additional incentive not to seek to maximize terminating access fees. As a result, the level of the terminating access fees that OVDs would pay in the

⁵⁰ Netflix first noticed Comcast congestion in mid-2013, and began negotiations shortly thereafter. The ultimately successful round of negotiations began in January 2014. Florance Declaration I, ¶¶ 45, 49, 56-57; McElearney Declaration, ¶ 43. The Comcast-Time Warner Cable merger was publicly announced on February 13, 2014. Comcast Corporation, “Time Warner Cable to Merge with Comcast Corporation to Create a World-Class Technology and Media Company,” February 13, 2014, available at <http://corporate.comcast.com/news-information/news-feed/time-warner-cable-to-merge-with-comcast-corporation>. {{

}}

event that Comcast had exercised its full market power is likely to be substantially higher than the level reflected in the Netflix contract.⁵¹

The Netflix contract itself may not prevent Comcast from imposing higher pecuniary or non-pecuniary costs on Netflix over the remaining life of the contract. For example, Comcast could breach the contract. Comcast can also limit Netflix’s ability to reach subscribers in ways that do not depend on port capacity, for example by imposing data caps, and seeking higher fees to address such limitations.

V. The Merger Would Lead to an Economically Significant Increase in OVD Interconnection Fees Based on Professor Carlton’s “No Vertical Foreclosure Contract Theory”

If Professor Carlton were right that Comcast would enter into mutually beneficial contracts with OVDs,⁵² rather than engage in a foreclosure strategy, then he is wrong that the merger would have “tiny” price effects. Comcast would charge substantially higher terminating access fees than discussed above if it charged OVDs for its lost profits, as described by Professor Carlton’s theory. In this section, I report estimates of the terminating access fees under Professor Carlton’s theory and the increase in those fees that would result from the merger.⁵³ Since I do not believe that Professor Carlton’s theory is correct—Comcast would more be likely foreclose than accommodate OVDs through a “mutually beneficial contract”—I

⁵¹ As I have noted before, Comcast was engaged in a public battle to “break zero” for terminating access fees. Its contract with Netflix, the largest OVD and most vociferous opponent to terminating access fees, set an important precedent for OVDs regarding terminating access fees. Evans Declaration I, ¶¶ 108-111.

⁵² Even if it was possible to strike a deal between Comcast and an OVD, this “mutually beneficial” contract could result in an OVD having to hand over most of its potential profits to Comcast. See Evans Vertical Paper.

⁵³ I focus on the terminating access fees in 2022 { {

}}

also do not believe that the estimates reported below are, in fact, relevant to evaluating the horizontal effects of this merger.⁵⁴

A. Professor Carlton’s “No Vertical Foreclosure Contract Theory”

Comcast operates both an ISP and an MVPD. There is increasing evidence that OVDs compete with MVPDs for viewers.⁵⁵ Comcast’s documents also indicate that it is {{

}}.⁵⁶ Consequently, when Comcast considers the prices to charge for terminating access fees it would consider the fact that allowing an OVD to access its subscribers would result in the loss of profits to its MVPD and ISP businesses. As a result of this “vertical effect” it would charge a higher terminating access fee than it would charge if it only operated an ISP business. As OVDs become closer substitutes for MVPDs, and lower barriers of entry to the ISP business, we would expect Comcast would charge terminating access fees much higher than the levels discussed above.⁵⁷

Professor Carlton has argued that Comcast would seek to recover its lost MVPD profits by charging OVDs access fees.⁵⁸ However, he argues that Comcast would not have an incentive to engage in “vertical foreclosure.” He says that if OVDs and Comcast are competing for

⁵⁴ Evans Vertical Paper.

⁵⁵ Experian (2014), “Cross Device Video Analysis,” available at <http://www.experian.com/marketing-services/cross-device-video-analysis.html?intcmp=emsblog>, at p. 6; MarketingCharts, “Pay TV Trends: Cord-Cutting and Cord-Shaving on the Rise,” January 21, 2014, available at <http://www.marketingcharts.com/television/pay-tv-trends-cord-cutting-and-cord-shaving-on-the-rise-39291/>.

⁵⁶ {{

}}

⁵⁷ It will become apparent from the calculations below that these lost profits are not accounted for in the current terminating access fees Comcast is charging Netflix.

⁵⁸ Carlton Declaration, ¶¶ 11-12.

customers, Comcast “has an incentive to reach a mutually beneficial vertical arrangement.”⁵⁹ He goes on to say, “Thus, the Internet service provider (ISP) and the edge provider have an incentive to negotiate terms that split the surplus that their interaction generates in a way that makes both better off. When ISPs and OVDs negotiate directly and flexibly, such flexibility removes any pricing-related constraints that might otherwise inhibit the ability to negotiate a mutually beneficial outcome.”⁶⁰

He gives an example of such an arrangement: “Suppose a consumer who pays \$5 to Comcast for video on demand (VOD) services considers switching to Netflix instead of consuming those VOD services (a form of ‘cord-shaving’). In such an instance, Comcast could charge Netflix \$5 for the switch if Comcast is the monopoly supplier to Netflix, as Commenters allege, and therefore has no incentive to destroy Netflix to prevent the switch.”⁶¹ In other words Comcast would seek to charge OVDs like Netflix a fee for access to Comcast’s subscribers to compensate Comcast for the fact that those subscribers would reduce their demand, and Comcast’s profits, for MVPD services as result of these OVD choices.⁶²

Comcast would therefore be no worse off by giving OVDs access to its subscribers and better off if it also shares in the surplus created by OVD entry under Professor Carlton’s theory. He claims that it is better to accommodate OVDs than to foreclose them. As I have stated

⁵⁹ In fact, this “mutually beneficial” outcome could also be described as Comcast demanding a ransom for the release of Netflix’s hostage customers. See Evans Vertical Paper.

⁶⁰ Professor Carlton’s analysis does not hold, even given his other assumptions, in the situation in which OVDs threaten its long-term broadband monopoly (see Evans Declaration II, ¶¶ 155-197) or result in lost profits for NBCU (see { { } }).

⁶¹ Carlton Declaration, ¶¶ 11-12.

⁶² The basic idea is that, if consumers value programming from an OVD more than they value programming from Comcast, then there must be some surplus that would enable Comcast and the OVD to enter into a deal, split the surplus, and have Comcast and the OVD both better off. Although Comcast loses the MVPD revenue, it also avoids the cost of licensing programming, and charges the OVD more than enough to offset its lost MVPD margin. Meanwhile the OVD gets access to Comcast’s customers and makes some surplus too.

previously, Professor Carlton’s theory is incorrect. But if it were true, Comcast’s accommodation of OVDs would result in OVDs paying substantial terminating access fees as I show next.

B. Estimate of Comcast’s MVPD Profits at Risk

Comcast’s video revenues are about {{ }} per subscriber per month and its video operating margin is about {{ }} percent.⁶³ Thus, its operating profits from video are about {{ }} per subscriber per month. It also incurs customer acquisition expenses, which I estimate conservatively at {{ }} per customer, expressed on a monthly basis.⁶⁴ As a result its video profits net of customer acquisition expenses are about {{ }} per subscriber per month averaged over the expected life of each customer. These calculations are rough but precise enough for establishing that interconnection fees would likely be economically substantial under Professor Carlton’s “no vertical foreclosure contract theory.”

Comcast’s MVPD profits likely result largely from Comcast’s ability to negotiate favorable programming licensing deals. Programming expenses are the major component of

⁶³ {{ }} This document is the same source Dr. Israel relied on for assessing the relative profitability of different types of customers for Comcast. See Israel Declaration II, ¶¶ 59-61. Note that these numbers are for video-only customers. Using these numbers as a proxy for Comcast’s profit for all MVPD customers is conservative, since bundle customers are typically more profitable.

⁶⁴ Comcast reports an upfront customer acquisition cost for video of {{ }}. See {{ }}. I amortize this on a monthly basis using the information on the attrition rate over time of video-only customers. See {{ }}. I estimate the constant monthly amount that would result in a net present value of {{ }} at the beginning of the period. I note that Comcast also reports that the customer life expectancy for video-only customers is {{ }}. See {{ }}. If I had calculated the monthly acquisition cost using that estimate of life expectancy, the estimate would have been significantly lower, which would have resulted in a significantly higher MVPD profit per subscriber. To be conservative, I use the former calculation. I also note that triple play customers are significantly more profitable for Comcast than video-only customers because they have lower attrition rates. To be conservative, I did not estimate the higher profitability of triple play customers and attribute a portion of that additional profitability to the video product (which is part of the triple play product). The estimate of the profit margin could also be further adjusted by a) accounting for installation revenues, or b) accounting for promotional discounts not included in the monthly ARPU. Data on these factors were not available in the {{ }}. Data on these factors were available for {{ }} and the net effect of these adjustments based on those data would be to increase the estimated profit margin, which would increase the MVPD profit threatened by OVDs.

costs for an MVPD. My understanding is that the largest MVPDs pay significantly less for programming than smaller ones. Smaller ISPs have indicated that the video business is essentially unprofitable on a standalone basis—AT&T, which is about a quarter the size of Comcast as an MVPD, has stated that “our video product is, on its own, unprofitable.”⁶⁵ Smaller ISPs have also indicated the video is unprofitable and is essentially a loss leader for getting ISP subscribers.⁶⁶

This analysis indicates that Comcast’s MVPD profits, on a per subscriber basis, result in significant part from its size. An important implication of this is that Comcast’s profits would fall disproportionately from a loss of subscribers. As it has fewer subscribers it would have less bargaining power and its profits per subscriber would fall.⁶⁷

The growth of the OVD industry would jeopardize those profits. Much of the increase in OVD revenue is likely to come at the expense of MVPD revenue as consumers substitute one for the other.⁶⁸ Table 1 shows projected OVD revenue as a percent of current MVPD

⁶⁵ Statement of Randall Stephenson (Chairman, CEO, and President of AT&T Inc.), Hearing: The Proposed Merger of AT&T and DirecTV, United States House of Representatives, Committee on the Judiciary, Subcommittee on Regulatory Reform, Commercial and Antitrust Law, June 24, 2014, available at <http://judiciary.house.gov/cache/files/f6c337d5-a54e-4681-b611-88f1443a2e71/stephenson-testimony.pdf>.

⁶⁶ At a recent investor conference, the CFO of TiVo noted that “One thing that is very interesting about the international market relative to the U.S. market is everyone looks at the U.S. cable market today and says that the value is all created from broadband. Video is looked at as a loss leader or some might look at it as a tack-on for additional margins from what they can secure from the broadband. The profits aren’t being driven by video.” SeekingAlpha, “TiVo CFO Naveen Chopra at MKM Partners Investor Day Conference,” September 24, 2014, Transcript available at <http://seekingalpha.com/article/2519165-tivo-cfo-naveen-chopra-at-mkm-partners-investor-day-conference?page=2>.

⁶⁷ This reduced bargaining power and higher programming cost reduces Comcast’s advantage relative to smaller ISPs and in particular ISP entrants. That provides a further incentive for Comcast to engage in vertical foreclosure contrary to Professor Carlton’s theory. See Evans Declaration II, ¶¶ 193-197.

⁶⁸ The exact relationship between increases and OVD revenue and MVPD revenue is complicated. If consumers paid OVDs and MVPDs the same effective prices for content and if OVD viewership substituted one for one for MVPD viewership, a 100 percent increase in OVD revenue relative to 2014 (from \$7.0 billion to \$14.0 billion) would result in an {{ }} percent decrease in MVPD revenue (from {{ }} to {{ }}) relative to 2013. If substitution is less than one for one then MVPD revenue would fall less than OVD revenue

revenue as of 2022.⁶⁹ It ranges from {{ }} percent of MVPD revenue with an OVD growth rate of 15 percent to {{ }} percent of MVPD revenue with an OVD growth rate of 25 percent.⁷⁰ Given the current pace of change, and how rapidly change has taken place in other industries disrupted by the Internet, it is conceivable that in the absence of foreclosure the OVD model could displace a much larger fraction of MVPD revenue by 2022.

Table 1: U.S. OVD Revenue in 2020 under Various Growth Assumptions

OVD Revenue CAGR 2014-2022	OVD Revenue, 2022 (\$ bil.)	OVD 2022 Revenue as % of 2013 MVPD Revenue
15%	\$21.3 billion	{{ }}
20%	\$30.0 billion	{{ }}
25%	\$41.6 billion	{{ }}

Based on these estimates, it is plausible that if Comcast gave OVDs access to its subscribers it could lose a substantial portion of its MVPD profits by 2022. It is plausible that Comcast could even lose all, or close to all, of its MVPD profits, even though it would retain a substantial part of its MVPD revenue. If there is a shift to an equilibrium in which consumers turn first to OVDs for content, the profitability of the MVPD model could deteriorate quickly.

would rise. If OVD effective prices are lower than MVPD effective prices then MVPD revenue would fall more than OVD revenue.

⁶⁹ For this calculation, I started with an estimate of \$7.0 billion total U.S. OVD revenues in 2014 based on data from Digital TV Research (which includes subscription, advertising, purchase, and rental revenues) and assumed a constant compound annual growth rate of 15, 20, or 25 percent. Note that in its non-subscription data, Digital TV Research reported U.S. OVD revenue in 2010 (\$2.3 billion) and in 2020 (\$15.5 billion), but did not report a separate number for 2014. Digital TV Research, “OTT Revenues to Rocket to \$42 Billion by 2020,” September 24, 2014, available at <http://www.digitaltvresearch.com/ugc/press/100.pdf>. They also report worldwide OVD revenues for 2010, 2014, and 2020. For the 2014 U.S. OVD revenue estimate, I have assumed that the share of the total 2010-2020 U.S. OVD growth that occurred in 2010-2014 was the same as the share of world-wide OVD revenue growth over 2010-2020 that occurred in 2010-2014. This gives us an estimate of total US OVD revenue in 2014 of \$7.0 billion.

⁷⁰ I estimated size of the U.S. MVPD industry in 2013 by taking the number of MVPD subscribers as of year-end 2013 as reported by SNL Kagan and multiplying by {{

}}.

To estimate what Comcast would have to seek in terminating access fees, I need to calculate the total amount of profit that Comcast would lose if it gave OVDs access.⁷¹ As noted above, Comcast’s monthly profit per MVPD subscriber is {{ }}. I assume that Comcast would lose 50 percent of its MVPD profits in 2022 if it allowed OVDs access to its subscribers. As I have noted, it is possible that OVDs could displace more MVPD revenue and profit by 2022. Comcast’s MVPD profits depend in significant part on its scale, so that a given percentage loss in revenues would likely result in a disproportionately larger loss of profits. I take a loss of 50 percent of MVPD profits as a plausible scenario.⁷²

The loss of 50 percent of its MVPD profits would amount to {{ }} annually.⁷³ Comcast would have to charge OVDs at least this amount annually to eliminate its incentives for vertical foreclosure under Professor Carlton’s theory. This estimate is conservative, in that it does not take into account the profits Comcast may lose if ubiquitous OVD programming results in accelerated entry by broadband ISPs.

C. Estimates of the Merger-Specific Increase in Fees Under Professor Carlton’s “No Vertical Foreclosure Contract Theory”

After the merger, Comcast would be able to increase the access fees it could demand from OVDs as a result of its larger size. It will be able to do so for two merger-specific reasons.

⁷¹ I note that these estimates of lost MVPD profits are for Comcast only. I have not attempted to calculate a similar figure for Time Warner Cable in the absence of the merger. Also, as noted above, these estimates are based on {{ }} under the Carlton no vertical foreclosure contract framework discussed.

⁷² Even with a loss of only 25 percent of its MVPD profits, the impact of the merger on terminating access fees would still be substantial. And with a greater loss of its MVPD profits, the impact of the merger on terminating access fees would much larger than I report below.

⁷³ For this calculation, I apply the change in MVPD profits per subscriber (12 months * {{ }} per month) times the number of post-Transaction video subscribers ({{ }}) to get {{ }}. This calculation does not estimate the impact on divested subscribers.

The first is the one I discussed above and have addressed in my previous declarations. Comcast would have greater bargaining power as a result of controlling access to a larger share of the nation's broadband subscribers. The price-size evidence described above indicates that the combination with Time Warner Cable would likely result in a significant increase in bargaining power over OVDs.

Professor Carlton's framework for establishing the terminating access fees that would eliminate the incentive leads to a second merger-specific effect on prices. The merged entity would likely secure lower programming costs as a result of its larger size, and realize higher profits because it does not face competitive pressure to pass those lower costs on to its customers. As a result, in the absence of competition from OVDs, Comcast's MVPD profit margin would likely be greater following the merger. It would therefore have more profits at risk and seek compensation for those higher profits under Professor Carlton's theory.

One estimate of the increase in access fees that Comcast could charge as a result of its increased size from the merger is, based on the Tobit regressions discussed earlier, {{ }} percent of the pre-merger Comcast fee.⁷⁴ Taking the assumption that Comcast would lose 50 percent of its video profits, which would result in an access fee of {{ }} per subscriber per

⁷⁴ The {{ }} percent is the estimated increase in Comcast's terminating access fees based on my analysis of the Netflix interconnection agreements. This estimate is based on access fees that larger ISPs are able to OVDs for access to broadband customers. The access fee described in this section is based on the loss of MVPD profits. The MVPD profits come from the ability of larger MVPDs to implicitly charge for access to MVPD customers. The difference between the programming fees paid by larger versus smaller MVPDs can be viewed as an implicit fee for access that the larger MVPDs are able to charge. Thus, while the estimate of a {{ }} percent increase in the Comcast fee arises in a different context from the access fees discussed in this section, both types of fees are for access to a cable company's customers for the purpose of distributing video content and are therefore sufficiently similar I use the {{ }} percent as a starting point. To be conservative, I also consider a range of price increases substantially below {{ }} percent. As I show below, the impact of the merger is substantial throughout the entire range. Note that this is this estimate of the access price estimate is lower than the {{ }} percent I reference above, which is an estimate of the price increase for Comcast and Time Warner Cable taken together. The price increase starting from the Comcast pre-merger price is {{

}}. See Evans Declaration II, ¶ 139.

month, an increase of {{ }} percent would be about an additional {{ }} per MVPD subscriber per month. With respect to the Time Warner Cable subscribers, if we assume that before the merger Time Warner Cable was receiving no more than Comcast was in video profit per subscriber and that after the merger the combined entity would charge the same access fee on former Time Warner Cable subscribers as on former Comcast subscribers, then the additional fee resulting from the merger applicable to the former Time Warner Cable subscribers would be at least as large as the {{ }} per subscriber per month I have calculated for the Comcast subscribers.

Under these assumptions, the merger would increase annual terminating access fees of by {{ }} in 2022.⁷⁵ In addition to a {{ }} percent increase I also consider smaller increases of 10, 25 percent and 50 percent for comparison, which result in increases of the annual terminating access fee of {{ }}, {{ }} and {{ }} respectively.⁷⁶ The present discounted value of these increases over 10 years, from 2022 to 2031, are {{ }} (10 percent increase), {{ }} (25 percent increase), {{ }} (50 percent increase), and {{ }} ({{ }} percent increase) in 2022 dollars.

⁷⁵ This is based on the post-merger entity having 30.0 million MVPD customers (accounting for divestitures).

⁷⁶ Even loss of only 25 percent of its MVPD profits, the impact of the merger on terminating access fees would still be substantial. The impact would be {{ }} assuming a 50 percent increase in fees resulting from the merger. With the loss of 75 percent of its MVPD profits, the impact of the merger would be {{ }} assuming a 50 percent increase in fees.

Table 2: Comcast’s Terminating Access Fee Needed to Replace Lost MVPD Revenue

Increase in Terminating Access Fee	Terminating Access Fee (Before Increase)	Terminating Access Fee (After Increase)	Increase in Terminating Access Fee	Net Present Value of the Fee (After Increase) 2022-2031	Net Present Value of the Fee Increase 2022-2031
10%	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
25%	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
50%	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}

Therefore, if Professor Carlton were right that Comcast, in the face of losing MVPD profits, would enter into mutually beneficial contracts with OVDs rather than foreclose them, then Comcast would charge much greater terminating access fees than the approach based on the current Netflix contract described in the preceding section, and the merger would result in an increase in those annual fees that would be more be much greater than that based on the Netflix contract.⁷⁷

VI. Conclusion

Robust evidence shows that Comcast has significant market power over terminating access fees to OVDs because its subscribers have little or no choice but to use Comcast and because OVDs have no way to reach those subscribers but through Comcast’s closed private network. Robust evidence also shows that larger ISPs charge significantly higher terminating access fees. Comcast would therefore likely raise terminating access fees significantly following the acquisition of Time Warner Cable. The absolute magnitude of the increase in terminating access fees following the merger is likely to be substantial given that the OVD

⁷⁷ Professor Carlton is not right though. His theoretical analysis is wrong as applied to the facts of this matter and is inconsistent with views stated by, and actions taken by, Comcast’s senior management. See Evans Vertical Paper.

industry is growing rapidly and will likely account for a substantial portion of the time American households spend watching long-run videos using their wired ISPs.

* * *

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

Executed on April 6, 2015.



David S. Evans
Chairman
Global Economics Group