REPLY REPORT OF PROFESSOR SIMON J. WILKIE

ECONOMIC ANALYSIS OF THE PROPOSED COMCAST-NBCU-GE TRANSACTION

August 19, 2010

I. INTRODUCTION

A. Assignment

1. I have been asked by EarthLink to review and critique, where necessary, the reply of Professors Mark Israel and Michael L. Katz to my initial analysis and findings on the effects of the proposed Comcast/NBCU transaction.[1] In my initial report,[2] I analyzed possible anti-competitive consequences of such a transaction on the emerging online video market and Internet service providers ("ISPs"). I concluded that under the structure of the proposed transaction, Comcast will have clear business incentives that are not aligned with consumer interests and that EarthLink's proposed structural remedy would protect consumer interests. This conclusion was supported by the fact that Comcast has a history of

[1] *See* Economic Analysis of the Proposed Comcast-NBCU-GE Transaction, Mark Israel and Michael L. Katz (Jul. 20, 2010) ("Israel and Katz").

[2] *See* EarthLink Petition, Appendix 2: Report of Professor Simon J. Wilkie, *Consumer Sovereignty, Disintermediation and the Economic Impact of the Proposed Comcast/NBCU Transaction* (Jun. 21, 2010).

punitively limiting the bandwidth of competitors and the fact that the acquisition of NBCU by Comcast would not only increase Comcast's incentives to act anti-competitively, but would give it a natural set of content to promote, further increasing Comcast's ability to act anti-competitively. In addition, EarthLink's proposed pro-competitive structural remedies would offer a low-cost solution and allow market-based competition to protect consumer welfare.

B. Outline of Report

2. Section II discusses the Israel and Katz critique of my economic analysis and illustrates the flaws in their critique. Having analyzed their critique, I conclude that should the proposed merger of Comcast and NBCU be consummated, Comcast likely will have the incentive and ability to raise the price of standalone broadband service. Section III addresses the Israel and Katz critique of my use of signal compression data in my analysis. Israel and Katz appear to have misunderstood my basic point that Comcast's past history demonstrates that they have the ability to engage in discriminatory conduct. Section IV addresses the implications of the uncertainty inherent in the Israel and Katz application of the Commission Staff model and highlights an important missing element of the Israel and Katz analysis – partial foreclosure of the online video market. Section V explains why the proposed wholesale stand-alone broadband access

condition is pro-competitive and will address consumer harms caused by the proposed merger. Section VI contains my conclusion.

II. CRITIQUE OF WILKIE MODEL

3. In the model presented in my original report, I constructed a "two goods model" in which a firm offers standalone units of either of the two goods (broadband and cable) and a bundle consisting of a unit of each. (¶¶ 38-41) Consumers are represented by their valuations of broadband and cable, given by a joint density function. Situations before and after the merger are distinguished by an increase in advertising revenues per video-subscriber that the vertically-integrated entity receives post-merger. My model demonstrated that it will be profitable for the merged entity to raise the standalone price of broadband service, to the detriment of consumers. The profitability of the raise depends both on the per-subscriber advertising revenue and the distribution of consumers' valuations.

4. Israel and Katz attempt to invalidate my analysis by means of a contrived counterexample.[3] The counterexample is singularly fragile: their construction of the counterexample hinges on certain, implicitly assumed, tie-breaking rules. The tie-breaking rules they assume are by no means the most natural for the problem, and the selection of a different tie-breaking rule yields results that are consistent with my initial analysis. As

[3] The unconventional distribution of consumers in the table below is also worth noting.

demonstrated below, their counterexample is not robust and their argument is consequently self-defeating.

5. Israel and Katz propose the following counterexample, which they claim demonstrates a situation in which the standalone price of broadband decreases following the merger between Comcast and NBCU:

Number of Consumers	Value of Broadband (x)	Value of Cable (y)
5	6	8
50	8	6
10	6	6
200	0	10

6. Israel and Katz claim that before the merger, the profit-maximizing prices are p_x=8, p_y=10, and p_B>14. They claim that the profit-maximizing prices after the merger are p_x=6, p_y=10, and p_B=12.

7. I will call the consumer represented in the *i*th row of the table the "type-*i*" consumer. For example, a consumer in the 2nd row of the table is a "type-2 consumer" who values a unit of broadband at 8 and a unit of cable at 6 (and there are 50 such consumers). Consider the situation after the merger: If the post-merger prices are p_x=6, p_y=10, and p_B=12, then either option yields a surplus of 2 for the type-2 consumer and a surplus of 0 for the type-3 consumer.

8. Thus, if one is to deduce that the profit maximizing prices are p_x=6, p_y=10, and p_B=12, then one must be relying on the "tie-breaking" rule that if a consumer is indifferent between buying the bundle and a standalone unit of broadband, then it will choose to buy the bundle. This is a significant

point: the Israel and Katz claim that they have constructed a counterexample to my model rests entirely on this particular tie-breaking rule. Israel and Katz do not, however, address the two additional tie-breaking rules that could possibly apply for this scenario:

(1) a consumer indifferent between buying the bundle and buying only a standalone broadband unit will buy either with equal probability;

(2) a consumer indifferent between buying the bundle and buying only a standalone broadband unit will buy only broadband.

9. It is clear that the tie-breaking rule described in (1) above (*i.e.,* indifferent consumers will buy either option with equal probability) is the only neutral choice. In fact, ties result when surpluses from choosing any of the options equal each other. The only assumption on ties that I make in my model is that if buying yields a surplus of zero, then the consumer chooses to buy rather than not to buy. I make no a further assumption on the choice. Instead, my model assumes that if more than one of the three options involving a purchase (buying only broadband, buying only cable, buying the bundle) yields the highest surplus (possibly zero), then each of these options is exercised with equal probability.

10. When this is the case before the merger, the monopolist will set the profit maximizing price of broadband arbitrarily close to 8. After the merger, though, it is optimal for the monopolist to set prices in such a way that consumers are incentivized away from buying only broadband.

Specifically, the monopolist will price its offerings in such a way that customers of type-1, 2 and 3 buy the bundle and the type-4 customers buy only cable. In particular, broadband is priced above 6, so that no consumer buys it as an individual unit. This conclusion contradicts the Israel and Katz results, which state that the price of standalone broadband decreases to 6. Indeed, setting p_x=6 post-merger as Israel and Katz propose is suboptimal for the monopolist, who prefer not to have type-2 and type-3 consumers indifferent to the standalone offering of the broadband and the bundle.[4] Formally, the Israel and Katz argument breaks down when natural tie-breaking rules are invoked. Consequently, the Israel and Katz counterexample is inapt.

11. In general, it is extremely difficult to characterize the optimal prices for a multiple product firm that sells its products both on a stand-alone basis and as a bundle. Progress on this problem has been made in an important paper by Manelli and Vincent.[5] The nature of the solution depends on the distribution of customers' values for the products on a stand-along basis and as a bundle. The firm's optimal prices may involve randomized allocations of its products being sold on a stand-alone or bundled basis. However, if we have (1) an initial interior optimum (*i.e.,* the firm sells its products both on a stand-alone and bundled basis); (2) either the "neutral"

[4] Under the assumptions of Israel and Katz, these consumers would simply buy the bundle.

[5] R. Manelli and D. Vincent (2006), "Bundling As An Optimal Selling Mechanism For A Multiple-Good Monopolist," *Journal of Economic Theory*, vol. 127, pp. 1-35.

tie breaking rule for discrete distributions or a continuous distribution of customer types; and (3) at the initial optimum the profit per customer on the bundle is higher than the profit on standalone broadband, then my conclusion stands. The Israel and Katz example involves the firm switching from one corner solution to another, *i.e.,* from a situation in which the firm only sells its products on a stand-alone basis to a circumstance in which it only sells its products on a bundled basis. Given the nature of the current market (*i.e.,* we are not at a corner solution and the bundle is more profitable per subscriber than standalone broadband), I conclude that my original analysis of marginal changes to an interior optimum is the relevant case.

12. It follows that, under the most likely scenarios as described in my initial report, "at the margin, the post merger Comcast entity will have the incentive to raise the prices of stand-alone broadband service absent other competitive pressures." (¶39) Sufficient competitive choice from a neutral provider, such as an independent ISP like EarthLink, would serve to discipline Comcast's ability to raise prices and would mitigate the harm to consumers who desire broadband service at lower, competitive prices.

III. CRITIQUE OF SIGNAL COMPRESSION

13. In my initial report I described Comcast's historical anti-competitive degradation of rivals' online products. (¶¶25-27) Israel and Katz did not disagree that the FCC formally ruled that Comcast had illegally throttled

BitTorrent traffic or that Comcast was a competitor to parties whose content it was throttling

14. Israel and Katz did criticize the additional evidence of intentional degradation via Comcast's recompression signals. They argue that Comcast's "systems…optimize the degree of signal compression as a function of the characteristics of content being aired and the set of high-definition networks sharing common bandwidth on its fiber backbone at the time…".[6] They conclude that the Comcast systems "do *not* set different quality levels for different networks based on the identity of the network owner" and "hence, no inference of selective or discriminatory 'degrading' can be made based on differential bitrates across high-definition networks at a point in time."[7]

15. My initial report recognizes that these degradations of network quality "may have been done for legitimate network management reasons." (¶27) This acknowledgment, however, certainly does not refute my conclusion that "post-merger Comcast will be operating with a new and powerful incentive to favor NBCU content over non-NBCU content in the online distribution channels." (¶17)

16. As described in detail in my initial report (¶¶13-24), Comcast's economic incentives will be changed when it becomes vertically integrated with NBC; the merged entity will have incentives that will differ from

[6] Israel & Katz, p. 145.
[7] *Id.*

Comcast's incentives today. For example, the merged firm will have incentives to discriminate in favor of its own programming and services, to block access or degrade rivals' online products, and to engage in anti-competitive signal degradation.

17. That Comcast may have legitimate reasons for degrading network quality today does not change the fact that Comcast has the *ability* to selectively degrade online video content, demonstrated by the fact that it has done so in the past via signal compressions, discrimination and otherwise. (¶17) Further, Israel and Katz imply that, because the current automated systems which Comcast uses to control signal quality do not contain a parameter which denotes NBCU content from non-NBCU content, such a parameter could not be added post-merger. Comcast's *ability*, however, to make such a determination is the significant point. The merged firm with its change in incentives would now have both the incentive and ability to discriminate against competitors in the emerging online market for video services.

IV. IMPLICATIONS OF THE UNCERTAINTY IN THE COMMISSION STAFF MODEL

18. Israel and Katz also critique the claim in my original report that, due to the highly uncertain parameters in their foreclosure model, "there is a substantial probability that the proposed transaction will harm consumer welfare." (¶29) Given this uncertainty, I suggested the most prudent course is for the FCC to take a cautious approach and to explore low cost

remedies that could effectively eliminate the outcomes that would be detrimental to consumer welfare. (¶35) Israel and Katz responded that they had "performed sensitivity analyses in which we evaluated the online foreclosure model under a broad range of parameter values" which did not yield results in which foreclosure was profitable.[8]

19. I disagree with Israel and Katz critique for two reasons. First, the parameters of their analysis of the likelihood of consumer harm were predicated on complete foreclosure, an extreme assumption. Second, their analysis ignores the possibility of local or regional foreclosure.

20. Israel and Katz assume that parameters used to judge consumer harm should be isolated to complete foreclosure only. This assumption is faulty. This position is not only extreme, but does not consider the more likely alternatives, that partial foreclosure or the threat of complete foreclosure would be used by the merged entity to raise prices and harm consumers.

21. Partial foreclosure could take many forms. As detailed in the report of Professor Kevin Murphy, one possible partial foreclosure strategy would be for the merged Comcast/NBCU to increase retransmission rates.[9] The potential for partial foreclosure through an increase in retransmission rates, however, is ignored by Israel and Katz. The analysis by Prof. Murphy, however, can also be applied to Comcast's online behavior,

[8] Israel & Katz Report, p. 165 (July 20, 2010).

[9] This far more likely possibility was explored in the June 21, 2010 report of Professor Kevin Murphy, on behalf of DIRECTV.

including the partial foreclosure of the OVPD market. If Comcast/NBCU is likely to increase retransmission rates in the MVPD market, so too will it engage in similar foreclosure strategies in the OVPD market.

22. In addition, Israel and Katz do not address foreclosure of local programming and sports. They focus on the "full set of NBCU content," noting explicitly that, "[a]mong the Commission's stated reasons to focus on broadcast networks has been the importance of sports and local programming to traditional MVPDs…. It is less clear that such programming would be important to an online MVPD, which would likely have a broad geographic footprint and possibly face constraints on the streaming of live events, among other differences."[10]

23. Israel and Katz argue that Comcast/NBCU would not find complete foreclosure profitable when the merged firm must sacrifice nationwide revenues by foreclosing access to all NBCU content in order to maintain or increase subscribers in their geographic footprint. However, Israel and Katz neither address nor refute the economic argument that the merged firm would find it profitable to foreclose access to selected programming, such as local programming and sports.[11] In such a scenario lost revenues would only stem from local or regional foreclosed programming. This would be offset by the ability of Comcast to reduce competition between

[10] Israel & Katz Report, p. 41 FN77 (May 4, 2010).

[11] Because of the personalized nature of the delivery of internet content the merged firm's incentive to foreclose access to localized content likely would be greater.

Comcast and emerging OVPDs who, while able to provide national programming, would be unable to provide local programming and sports. It is implausible to suggest that because prospective OVPDs would have "broad geographic footprint[s]" they would be unwilling or unable to provide local content. This line of reasoning is akin to suggesting that national websites such as Yelp.com, Craigslist.com, Monster.com or Google Maps could not offer, or would not be interested in offering, localized content because of their national footprint. Similar arguments that current constraints associated with broadcasting live events over the Internet would impose a significant barrier to future online MVPDs are equally untenable.

24. While Israel and Katz critique my claim that their parameters are uncertain, they do not address the next sentence in my report, which points out that because of the nascent nature of the market it is sensible "to take a cautious approach and explore remedies that would effectively eliminate those albeit uncertain outcomes that would be harmful to consumer welfare." (¶35) In fact, at no point do Israel and Katz counter my findings that EarthLink's proposed structural remedy is an efficient, low cost (or no cost) structural remedy that would provide safeguards against likely harm to consumers.[12]

[12] This is true even if one assumes, *arguendo*, Israel and Katz conclusions that the probability of substantial consumer harm is low.

V. WHOLESALE STANDALONE BROADBAND ACCESS IS A PRO-COMPETITIVE REMEDY

25. The critiques offered by Israel and Katz do not undermine my economic analysis, which shows that the proposed merger will increase the ability and incentives of the merged firm to engage in anti-competitive behavior. Moreover, their critiques do not invalidate my conclusion that the structural solution proposed by EarthLink will mitigate the potential harms to consumers.

26. Allowing consumers to have a choice of ISPs will (1) let consumers "break the bundle," (2) promote competition and discipline Comcast's pricing, and (3) protect the development of the nascent online video market.

27. First, currently consumers have limited ISP choice in most of the United States and consumers often bundle broadband service with MVPD service. In Comcast's region, the EarthLink remedy will expand consumer choice of ISPs and allow consumers to drop the MVPD service in favor of OVPDs, if desired (*i.e.,* "break the bundle").

28. Second, by enabling consumer choice, if the merged entity were to engage in discriminatory behavior, consumers would have the option of changing ISPs. The ability of consumers to choose among ISPs will promote competition and will allow market forces to discipline the merged firm's behavior, including pricing of services.

29. Third, giving consumers a choice of ISPs will protect the development of the nascent market for online video services. In particular, the EarthLink remedy will protect the development of online video programming by ameliorating the ability of Comcast/NBCU to discriminate against unaffiliated distribution competitors. The profitability of such discrimination would be reduced because consumers would have a viable economic option to switch to a competitors ISP by imposing a marketplace "penalty," (*i.e.,* dissatisfied customers can switch to an alternative ISP).

30. In order to compete, an independent ISP will provide the best service in order to win customers. Competitive choice will also give consumers access to the content of their choosing without fear of degrading or blocking activities that would hobble the development of the OVPD market. As I explained in my initial report, "[r]egardless of whether particular online video *content* is a substitute or a complement in relation to Comcast/NBCU broadcast and/or cable products and/or services, the provision of Internet service by an independent ISP is *always a substitute* for the provision of Internet service by Comcast." Thus, ISPs with no content assets will have no incentives to discriminate against content in the same way a vertically integrated firm like Comcast would and will have no incentive to favor one distribution channel over another.

31. A wholesale standalone broadband access condition would also serve as a check on Comcast's ability to raise prices for its own standalone broadband access service. If Comcast raises retail prices, customers will have the competitive options stemming from the wholesale access condition.

VI. CONCLUSION

32. My previous conclusion, that the proposed Comcast/NBCU transaction will provide the post-merger Comcast with strong incentives and abilities to interfere with emerging online video services and affect broadband pricing in a manner that is harmful to consumer welfare, remains unchanged after reviewing the Israel and Katz critique. Based on my foregoing analysis and my analysis to date, it is clear that EarthLink's proposed structural remedy as a condition of merger approval will be a low-cost and effective mechanism to improve significantly the public welfare results of the Transaction.

APPENDIX 2

PROPOSED CONDITION: WHOLESALE STANDALONE BROADBAND ACCESS

Within ninety (90) days after the effective date of the order approving the proposed transaction with conditions ("Order") and prior to closing the transaction, Comcast shall enter into a Wholesale Standalone Broadband Access Service Agreement ("Agreement") with at least four (4) national unaffiliated Internet Service Providers ("ISPs").

The requirements of the Agreement shall be as follows:

REQUIRED TERMS	DESCRIPTION
Prior Approval	FCC approval of the Agreement required prior to execution.
Term	The Agreement shall be for a term of at least five (5) years with a reasonable customer transition period upon termination.
Rates	Wholesale standalone broadband access service shall be provided at reasonable rates, which shall be at least 40% less than the current advertised retail rates for Comcast's broadband access services, including any promotional discounts and bundled rates [or at the imputed cost of such service]. If Comcast offers free installation and/or modem equipment or other services, either to its retail consumers or to any other party, the unaffiliated ISPs shall obtain such services/equipment as part of the wholesale rate.
Geographic Scope	Wholesale standalone broadband access service shall be made available in 100% of Comcast's nationwide footprint. The number of customers provisioned using wholesale standalone broadband access service shall not be limited.
Access/Ordering	Reasonable terms of access, including without limitation reasonable ordering and provisioning, shall be established. Comcast shall provide the unaffiliated ISPs: (i) access to systems and tools necessary for the ISPs to offer Tier 1 customer support, or Comcast shall provide the Tier 1 support; (ii) a prequalification system that allows the unaffiliated ISPs to determine accurately the serviceability of a customer through a real-time API, or Comcast shall provide all serviceable addresses in a file updated daily; (iii) prequalification data which shall include whether a customer will be rejected due to owed balance or credit issues; and (iv) APIs for trouble reporting, ticket creating, ticket updates, and network outages. Comcast shall provide Tier 2 support, and shall report network outages promptly to the ISPs. Customers will not be required to purchase any other Comcast product or other service as a condition of service from the unaffiliated ISPs.
Billing	ISPs may have a direct billing arrangement with their customers. Comcast may offer a billing service to any ISP, but shall not require any ISP to purchase this service as a condition of obtaining access.

Services — If Comcast makes available different levels of broadband access service (including, but not limited to, quality of service guarantees, maximum and minimum throughput capacity, and byte consumption per customer) to any Comcast broadband access service customers, Comcast shall make those levels of service available to the unaffiliated ISPs with whom it has contracted for access. Comcast shall include in the wholesale service all telephony or video features that Comcast provides as part of its own stand-alone broadband access service.

Ordering — Comcast shall allow customers to select an ISP by a method that does not discriminate in favor of Comcast's affiliates on the basis of affiliation, including when the customer chooses a Comcast bundled offering. At a minimum, Comcast shall allow customers to obtain a list of unaffiliated ISPs by calling their local Comcast customer service representative and requesting such a list. Whenever a customer requests a listing of unaffiliated ISPs, Comcast shall provide the list in a reasonable and timely manner. Such list shall not discriminate in favor of Comcast's affiliates.

Network Usage — Comcast shall not interfere or discriminate in any way, directly or indirectly, with content passed in either direction along the bandwidth contracted for and being used by any ISPs with whom Comcast has an Agreement.

Comcast shall make available to the unaffiliated ISPs any network flow monitoring data (regarding data transport between the ISPs' connection point to the broadband network and a customer's location) or usage accounting that is available to Comcast's personnel.

The Agreements shall contain a clause warranting that, to the extent Comcast provides any Quality of Service mechanisms, caching services, technical support customer services, multicasting capabilities, address management and other technical functions of the broadband network that affect customers' experience with their ISP, Comcast shall provide them in a manner that does not discriminate in favor of Comcast's affiliated ISP on the basis of affiliation.

Marketing — The unaffiliated ISPs shall be permitted to market their services to Comcast broadband access service customers and Comcast shall be prohibited from restricting the ability of any current or prospective Comcast customers to select and initiate service from any ISP with whom Comcast has an Agreement.

The unaffiliated ISPs shall not be required to include any content or provide marketing as a condition of obtaining broadband access service.

Comcast shall not solicit the customers of the unaffiliated ISPs based on information in Comcast's records (*e.g.*, prequalification, ordering, or repair information) to purchase or switch to Comcast's service.

Dispute Resolution — The FCC shall be permitted to hear and resolve disputes that arise from any of the mandated merger conditions.

Confidentiality	The Agreement shall not prevent the unaffiliated ISPs from disclosing the terms of the contract or facts relating to any dispute to the FCC under the FCC's confidentiality procedures.

ENFORCEMENT: Disputes concerning Comcast's compliance with this condition shall be adjudicated by the FCC through the filing of a formal complaint and such disputes shall be resolved within sixty (60) days of the filing of the complaint.

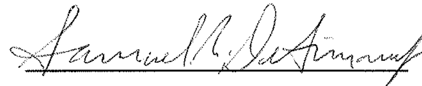
APPENDIX 3

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Application of Comcast Corporation,	)	
General Electric Company	)	MB Docket No. 10-56
and NBC Universal, Inc.	)	
	)	
For Consent to Assign Licenses or	)	
Transfer Control of Licenses	)	

DECLARATION

I, Samuel R. DeSimone, Jr., General Counsel and Secretary, EarthLink, Inc. hereby declare that the facts contained in the EarthLink Reply to Opposition to Petition to Condition or Deny, filed with the Federal Communications Commission on August 19, 2010, are true and correct to the best of my knowledge and belief.



Samuel R. DeSimone, Jr.

August 19, 2010