

majority of edge providers need not reach any direct agreement with Comcast in order to deliver traffic to its network.

80. Moreover, the agents of edge providers, including CDNs, themselves have many options to reach an ISP's network.¹¹⁰ In addition to reaching direct peering agreements with ISPs, CDNs can and do purchase transit services from one or more of the ISP's peering partners, many of whom exchange traffic with the ISP on settlement-free terms. In some cases, a CDN could even elect to send traffic over an ISP's paid transit connection, thereby imposing costs on the ISP. All of this means that edge providers can choose between many CDNs, each of which can itself choose between many transit options and/or direct peering to reach the ISP's network.

(3) *The wide array of interconnection alternatives limits the combined firm's power over edge providers and protects edge providers and consumers from harm*

81. The combined firm (like any ISP) will have strong incentives to keep the wide array of paths into its network open post-transaction, thus greatly limiting any alleged power over edge providers (or their agents). The value of broadband services depends on network effects and interconnectivity. Content comes from, and must be sent to, many networks that Comcast does not reach directly. Hence, for several reasons, the combined firm will lack the incentive and ability to close off or substantially limit these access

¹¹⁰ See Besen and Israel (2013), 243-244.

points into its network.¹¹¹

82. **First**, if Comcast were to close other providers' access to its network, Comcast's customers would lose access to content. Indeed, even if Comcast were inclined to attempt to foreclose access to its network or increase prices for access on *some* links, edge providers (or their agents) would likely simply shift content to *other* transit options. This effect arises because content providers (and their agents) can multi-home across many interconnection alternatives, so closing off a single link or even several links does not prevent the edge provider from accessing the Comcast network.

83. Hence, to prevent a particular edge provider's content from reaching its network, Comcast would potentially have to close off a substantial portion of the links into its network (including links to peers and CDNs). In doing so, Comcast would potentially deny its customers access to a substantial amount of content, thus significantly harming its broadband offering and inducing consumers to downgrade their broadband service or switch to other broadband options due to the loss of valuable content.¹¹²

84. **Second**, in addition to losing access to downloaded content, cutting off

¹¹¹ Note that this conclusion also refutes claims that the combined firm will obtain higher prices for access to its network via negotiation. As a matter of economics, such higher prices via negotiation would generally come from a more credible threat to close off or limit access to the combined firm's network, unless an edge provider (or CDN or transit provider) pays more. This section explains the factors that would make such threats non-credible for the combined firm.

¹¹² See Section II.B.1(a).

interconnection with other networks would harm the ability for Comcast customers to send traffic to those networks. Comcast needs to get its customers' traffic to other ISPs' customers (including overseas customers), so closing off an access point would harm Comcast's upstream traffic flow (*e.g.*, it would hinder its ability to ensure delivery of emails or over-the-top video calls), which would further harm its broadband business.

85. **Third**, edge providers exert substantial influence and control over the quality of the end-user experience with their content at specific ISPs, thus ensuring that the edge provider retains significant bargaining power, given its ability to inflict harm on an ISP's reputation and quality. The quality of the end-user experience can turn on the edge providers' server capacity, its transit or CDN partner, the compression or lack of compression of the content it sends, and other factors. Many of these factors are entirely or largely in control of edge providers and not ISPs. For example, by shifting traffic across different delivery routes, an edge provider can change the user experience for an ISP's customers, causing congestion that can affect just its traffic or also affect others' traffic on the same route. Indeed, based on its selection of interconnection options, an edge provider can potentially inflict direct monetary costs on the ISP.¹¹³ As Israel and

¹¹³ Barry Tishgart, Vice President, Product Management & Wholesale Services, February 20, 2014, interview. *See also*, DrPeering International, "The Art of Peering: The Peering Playbook," available at <http://drpeering.net/white-papers/Art-Of-Peering-The-Peering-Playbook.html>, site visited April 2, 2014, (categorizing different strategies used by peering coordinators to obtain peering agreements.)

Besen (2013) explain:¹¹⁴

CDNs (and their content provider clients) and ISPs have alternatives to direct peering, and those alternatives limit whatever negotiating leverage an ISP would otherwise have . . . [I]n negotiations with an ISP about the terms of paid peering, a CDN can threaten to exploit transit alternatives that would leave the ISP worse off than if it had entered into a reasonably priced paid peering relationship with the CDN.

86. The ability for an edge provider to affect an ISP's business, including its reputation for high quality service, is aptly demonstrated by Comcast's recent experience with Netflix and Cogent. Complaints received by customers and reports in the popular press make it clear that many customers blamed Comcast for performance issues related to congestion of Cogent pipes, thus harming Comcast's reputation.¹¹⁵ Comcast bears the cost of such harm to its reputation, with the effects likely including an increase in consumer churn—a phenomenon likely to be exacerbated by other ISPs (looking for a competitive edge) and edge providers (looking for a negotiation edge) who have strong incentives to emphasize and capitalize on the harms to Comcast's reputation.^{116, 117}

¹¹⁴ Besen and Israel (2013), 243-244.

¹¹⁵ See, e.g., Jon Brodtkin, "Netflix Slow on Verizon or Comcast? A VPN Might Speed Up that Video," *Ars Technica*, February 15, 2014, available at <http://arstechnica.com/information-technology/2014/02/netflix-slow-on-verizon-or-comcast-a-vpn-might-speed-up-that-video/>, site visited March 26, 2014.

¹¹⁶ While data are not available to measure the size of the churn effects, numerous comments on Comcast forums from customers threatening to disconnect from Comcast due to slow Netflix speeds indicate the likelihood of such effects. (See, e.g., <http://forums.comcast.com/t5/Basic-Internet-Connectivity-And/Netflix-is-slow/td-p/1856575>, site visited March 28, 2014.)

Indeed, the cost of such reputational harm may grow as Comcast grows, since problems anywhere in its network, involving any edge provider, may cause reputation harm across Comcast's entire customer base. Comcast's experience with Netflix and Cogent therefore demonstrates the cost to Comcast should it cut off (or intentionally congest or otherwise harm) interconnection points (or the last mile) in order to impact negotiations with specific edge providers.

87. **Finally**, Comcast generates revenue by selling transit to third parties like CDNs, universities, content providers, and other entities. If Comcast were to block its peering avenues with other providers (or tried to exact a "toll" on those links), it would not be able to provide its transit customers with access to blocked providers.

88. As a final note on this discussion, I point out that any analogies between edge providers' access to the Comcast network and the concept of "terminating access monopolies" are inapposite. The term "terminating access" monopoly arises in the

¹¹⁷ For example, Netflix publishes a monthly ISP speed index "to compare ISPs and give you monthly insight into which ISPs deliver the best Netflix experience." (*See* <http://ispspeedindex.netflix.com/>, *site visited* March 31, 2014.)

And ISPs use the Netflix's ISP speed index for marketing purposes. (*See, e.g.*, Cablevision-optimum, "Optimum and Netflix," *available at* <https://www.optimum.net/pages/netflix.html>, *site visited* March 31, 2014.) ("While Verizon slipped in the rankings, Optimum Online continues to remain on top, delivering the best picture quality and the fastest Netflix connection of any provider in the Tri-State region. For Optimum Online high speed internet customers that subscribe to Netflix it means having the fastest Netflix connection speeds. Faster than Verizon FiOS and AT&T U-Verse. So, if you subscribe to Netflix, your best choice is Optimum Online.")

context of Public Switched Telephone Networks (“PSTNs”), where the concern is that a terminating local carrier could charge supra-competitive prices to a long-distance carrier to connect to its customers because the long-distance carrier had no means to pass along higher fees to the local carrier’s customers. Consequently, the local carrier’s customers had no incentive to switch to another local carrier that charged the long distance provider lower access fees. For all the reasons developed in this section, this analogy does not apply to the Internet, where (i) edge providers have direct relationships with end customers and (ii) consumers are likely to seek out alternative ISPs if they lose access to those edge providers that are relevant to them. I also note that edge providers have the option of reaching the “termination network” without negotiating directly with or paying the ISP, working instead with a CDN or transit provider and thus effectively pooling their content with substantial other content.¹¹⁸

2. There is no basis to conclude that the transaction will shift bargaining power in a way that will harm consumers or reduce welfare

89. The preceding discussion has explained how the facts of the residential broadband and interconnection marketplaces indicate that edge providers (or their agents) have important options in their dealings with cable operators or other ISPs (including the combined firm), thus limiting the power that any ISP (with or without the proposed

¹¹⁸ See generally, *Besen and Israel (2013)*, 244.

transaction) has in negotiations with edge providers. In this section, I go on to explain why, even if the transaction were to affect the nature of bargaining between the combined firm and edge providers (or the CDNs or transit providers who distribute content on edge providers' behalf), there is no way to conclude that this shift would necessarily lead to greater bargaining power for the combined firm *or* that any shift would reduce total or consumer welfare, rather than simply shifting the percentage of the “pie” captured by each party.

- First, I explain why the economic theory of bargaining provides no basis to conclude that the transaction will increase the bargaining power of the combined firm, relative to Comcast and TWC on their own. In particular, although economic theory indicates that relative bargaining power may (or may not) change following the transaction, it does not even indicate the direction of any change. (See Section II.B.2(a)).
- Second, I explain why—unlike the standard monopoly or monopsony power cases—even if bargaining power does shift in one direction or the other, such shifts do not necessarily imply any reduction in total or consumer welfare. (See Section II.B.2(b)).

(a) *No economic basis to conclude that the transaction will increase the combined firm's bargaining power*

90. Critics of the transaction have argued that, by virtue of becoming larger, the combined company will be in a better bargaining position vis-à-vis edge providers (or vis-

à-vis transit providers or CDNs that may negotiate on behalf of edge providers).¹¹⁹

Below, I consider two possible mechanisms by which one might posit that the transaction could increase the bargaining power of the merging parties and I find that there is no basis to conclude that either mechanism will lead to greater bargaining power. Put simply, framing the analysis around “negotiation” and “bargaining power” does not change the basic antitrust logic that, if products are not substitutes, the transaction does not raise horizontal concerns.

91. At the outset, I note that the identification of buyers and sellers in bargaining models is somewhat arbitrary. Throughout this section, I adopt the convention that distributors (*e.g.*, ISPs) are buyers and edge providers are sellers. I do so in order to have a consistent language to use in the discussion and because this taxonomy is consistent with the bargaining literature on negotiations between MVPDs (distributors) and content providers. However, the conclusions discussed in this section apply even when transfer payments (from buyer to seller) are negative (meaning that the edge providers or their agents, which I am calling sellers, actually pay the ISPs). The direction of payment flows

¹¹⁹ For example, Public Knowledge has asserted: “A bigger Comcast would have even more power as such a significant customer and business partner of other media and Internet companies. By itself, it would be able to dictate terms, ensure that it always gets the most favorable treatment, and limit the ability of rivals (including online video) to access content.” (Jodie Griffin, “Why the FCC Should Cut the Cord on the Comcast/Time Warner Cable Deal,” Public Knowledge, February 14, 2014, *available at* <http://www.publicknowledge.org/news-blog/blogs/why-the-fcc-should-cut-the-cord-on-the-comcast-time-warner-cable-deal>, *site visited* March 28, 2014.

does not change the underlying economics, which concern the division of surplus between negotiating parties.

(1) *Technical background on economic models of bargaining and the importance of “concavity of surplus functions”*

92. The economic analysis of bargaining identifies factors that influence the outcome of negotiations, whereby buyers and sellers bargain to split the gains from reaching an agreement to which both sides contribute.¹²⁰ Under standard economic theories of bargaining, in determining how hard to bargain, each party takes into account the fact that strong demands might lead to a failure to reach an agreement. As a result, the nature of the agreement that is reached depends on the parties’ “disagreement points.”¹²¹ It would be economically irrational for either party to accept an agreement that resulted in profits for that party that were lower than its disagreement point—the party would be better off

¹²⁰ In previous transactions, the Commission has used a specific example of economic bargaining models (the Nash bargaining framework) to assess the competitive effects of vertical mergers on negotiations between distributors and input providers. (See, e.g., *Comcast-NBCUniversal Order*, Appendix B, § I.B. See also, John Nash (1950), “The Bargaining Problem,” *Econometrica*, 18: 155-162; Ken Binmore, Ariel Rubinstein, and Asher Wolinsky (1986), “The Nash Bargaining Solution in Economic Modeling,” *The RAND Journal of Economics*, 17: 176-188.)

This framework can be used to assess transactions, such as the proposed transaction, in which the merging parties do not operate in the same markets as each other and do not supply inputs to each other.

¹²¹ The Commission has referred to these disagreement points as the best alternative to a negotiated agreement (“BATNA”). (See, e.g., *Comcast-NBCUniversal Order*, Appendix B, § I.B.)

without such an agreement. Thus, the negotiations will be over how the two parties divide the gains (or “surplus”), over and above the disagreement point, which can be characterized by a “surplus function.” Under the negotiated agreement, each party will receive an amount equal to its disagreement profits plus some share of the surplus created by working together.¹²²

93. This economic bargaining framework implies the impact of a merger on bargaining power cannot be determined simply by asking which side of the negotiation gets larger. Instead, the effect of a merger between buyers depends on technical conditions, such as the “concavity” or shape of the sellers’ surplus functions (*i.e.*, the way in which the surplus function changes with the number of customers), and the impact of a merger between sellers depends on technical conditions, such as the “concavity” of the buyers’ surplus functions. If the *per-customer* benefit to an edge provider of reaching more customers decreases with the number of customers the edge provider can access, then the surplus function is “concave.” Conversely, if the *per-customer* benefit to an edge provider of reaching more customers increases with the number of customers the edge provider can access, then the surplus function is not concave, but rather “convex.” And if

¹²² Under standard economic models of bargaining, those shares of surplus are driven by the relative bargaining abilities of the two parties, as well as their relative bargaining costs or costs of waiting.

the *per-customer* benefit does not depend on the number of customers that can be accessed, then the surplus function is “linear.”¹²³

94. Most importantly, under standard economic models, only if an edge provider’s surplus function is concave will the transaction enhance the bargaining power of the combined firm vis-à-vis that edge provider.¹²⁴ This conclusion follows from the fact that if the marginal buyer’s contribution to the seller’s surplus function is *less than the average* buyer’s contribution to the seller’s surplus function—as is the case when the surplus function is concave—then the marginal buyer will be in a weaker position on its own and thus will be able to negotiate a better (lower) price if it negotiates jointly with other buyers and thus is “averaged in” with the other buyers. Hence, given a concave surplus function, a merger would reduce the price paid to the seller (meaning, in the context of the present transaction, power would shift toward the combined firm and away from the edge provider). In contrast, if the marginal buyer’s contribution to the seller’s

¹²³ A simple example illustrates the concept. If the per-customer benefit from the first customer is \$1 and the per-customer benefit from the second customer is \$0.50, then the surplus function is “concave” because the per-customer benefit falls with more customers. If the per-customer benefit from the first customer is \$1 but the per-customer benefit from the second customer is \$2, then the surplus function is “convex.” Finally if the per-customer benefit from both the first and the second customer is \$1, then the surplus function is “linear.”

¹²⁴ This conclusion does not depend on whether the buyer pays the supplier a positive fee (as is typically the case in negotiations between MVPDs and content providers) or a negative fee (as is sometimes the case in paid peering arrangements between ISPs and edge providers).

surplus function is *greater than the average* contribution to the seller's surplus function (*i.e.*, the surplus function is convex), then the marginal buyer is actually in a stronger position on its own and will be able to negotiate a better (lower) price if it negotiates separately.¹²⁵ In this case, a merger will actually increase the price paid to the seller (meaning, in the context of the present transaction, power would shift away from the combined firm and toward the edge provider).

95. Building on this theoretical background, in the following sub-sections, I consider potential arguments that edge providers' surplus functions are concave and thus that the transaction would improve the combined firm's bargaining power vis-à-vis edge providers. I find that there is no basis to conclude that these conditions hold and thus no basis to conclude that the proposed transaction will increase the combined firm's bargaining power.

(2) *No change in bargaining power resulting from horizontal substitution*

96. Concerns about increased bargaining power typically arise in the context of transactions in which the merging parties are, at least to some degree, horizontal substitutes for each other. In such a setting, the merger may change the bargaining incentives of the negotiating parties because the parties will internalize the fact that, if one of the merging parties loses customers due to more aggressive bargaining with providers,

¹²⁵ If the surplus function is linear, the merger would have no impact.

it will recapture those customers who substitute to the other merging party.¹²⁶ Stated differently, the value to an edge provider of reaching a deal with one ISP would be lessened to the extent that, in the event no agreement could be reached, some of the ISP's customers would switch to a rival distributor with whom the edge provider has a deal. Consequently, on a stand-alone basis, the edge provider would be willing to negotiate more aggressively with one of the merging ISPs, on the condition that there is an agreement in place with the other merging ISP. This implies that, in the presence of such horizontal substitution, the edge provider's surplus function would tend to be concave, in which case a merger of the two ISPs could lead to enhanced ISP bargaining power.

97. However, in this matter, there is no such substitution-based argument for increased bargaining power, because Comcast's and TWC's footprints do not overlap with each other and therefore they are not horizontal substitutes for each other.¹²⁷

(3) *No basis to conclude that larger size increases bargaining power*

98. Critics of the transaction have pointed to another mechanism by which they assert that the combined firm may enjoy an enhanced bargaining position despite the lack of

¹²⁶ See, e.g., Gautam Gowrisankaran, Aviv Nevo, and Robert Town, "Mergers When Prices are Negotiated: Evidence from the Hospital Industry," December 24, 2013, *available at* http://www.u.arizona.edu/~gowrisan/pdf_papers/hospital_merger_negotiated_prices.pdf, *site visited* March 28, 2014.

¹²⁷ See Section §II.A.

horizontal overlap—greater size. In particular, these critics assert that because the combined firm will be much larger, it will control access to many more customers or “eyeballs” (bringing together customers in Comcast and TWC regions), and that, as a result, edge providers will be forced to acquiesce to less favorable terms from the combined firm than they could obtain from either as a stand-alone firm.^{128, 129} For example, they point to the combined firm’s share of nationwide broadband subscribers (between 20 percent and 40 percent post-merger, per the discussion above) and argue that this size will enable the combined firm to harm edge providers by extracting additional surplus from them.

99. As an initial matter, I note that—whatever its share of broadband customers immediately post-merger—the combined firm will not have the power to deny edge providers access to downstream customers (*see* Section II.B.1). This conclusion follows

¹²⁸ For example, Free Press has asserted: “That means that anyone who has to negotiate with Comcast is going up against a behemoth. This dominance is precisely what forced Netflix to strike a deal with Comcast to ensure continued high-speed connections to Comcast’s subscribers... As online video companies like Netflix and Amazon see higher costs, those could trickle down to consumers, who get squeezed at every turn.” (*See* Free Press, “Six Myths About the Comcast-Time Warner Cable Merger,” February 25, 2014, available at <http://www.freepress.net/blog/2014/02/25/six-myths-about-comcast-time-warner-cable-merger>, *site visited* March 28, 2014.)

¹²⁹ Alternatively, commenters might argue that the combined firm will have enhanced power due to its presence in most of the largest DMAs in the U.S. This framing is just another version of the argument that size confers market power on the combined firm. The conclusions articulated in this section apply equally well to this alternative framing of the issue.

because, as explained, edge providers have many ways to reach end consumers, both via multiple “paths” through which to access the Comcast network itself and by working with broadband providers other than Comcast.

100. Nevertheless, in the remainder of this section, I explain why, even if the combined firm could control edge providers’ access to a larger set of customers than the standalone firms, this would not support a conclusion that the transaction would increase the combined firm’s bargaining power over edge providers. To do so, I consider the theoretical and empirical economic literature on this topic, in turn.

101. **First**, the theoretical literature on the effect of cross-market mergers (*i.e.*, mergers in which there is no horizontal overlap) on the bargaining power of merging parties makes *no clear predictions* about the directional effect of cross-market mergers on the parties’ bargaining positions.¹³⁰ Instead, it demonstrates that mergers between firms that are not horizontal competitors with each other will increase the parties’ bargaining power only under specific, restrictive assumptions and that the effects may well go the other

¹³⁰ See, *e.g.*, Tasneem Chipty and Christopher M. Snyder (1999), “The Role of Firm Size in Bilateral Bargaining: A Study of the Cable Television Industry,” *The Review of Economics and Statistics*, 81: 326-340 (hereinafter *Chipty and Snyder (1999)*); Alexander Raskovich (2003), “Pivotal Buyers and Bargaining Position,” *The Journal of Industrial Economics*, LI(4): 405-426; Nodir Adilov and Peter J. Alexander (2006), “Horizontal Merger: Pivotal Buyers and Bargaining Power,” *Economics Letters*, 91: 307-311 (hereinafter *Adilov and Alexander (2006)*).

way. In particular, the literature considers three factors that may affect the impact of a merger on bargaining outcomes:

- *Shape of the surplus function:* Consistent with the intuition discussed above, Chipty and Snyder (1999) develop a theoretical model of bilateral negotiations demonstrating that a merger of two ISPs will increase their bargaining power only if the counter-party's surplus (profit) is concave, as described above. As I explain below, I know of no evidence that edge providers' surplus functions are concave and thus no evidence that the transaction would enhance Comcast's bargaining position. In fact, there are reasons to believe that edge providers' surplus functions may be convex, in which case the merger could reduce the combined firm's bargaining power.
- *Whether the merger creates a "pivotal" buyer:* Raskovich (2003) extended the model of Chipty and Snyder (1999) to show that if a merger leads a buyer to become "pivotal"—*i.e.*, sufficiently large to impact the production decision of the seller—it is actually *disadvantaged* in its negotiations relative to a non-pivotal buyer because it internalizes some of the seller's costs. If the pivotal buyer negotiates a price that causes the seller not to be able to cover its costs, it will forfeit the opportunity to reach a surplus-enhancing agreement that would increase its profits. As a result, the buyer has an incentive to negotiate a price that is sufficient to allow the seller to stay in business and compete effectively. In contrast, buyers that are not pivotal do not need to take into account whether negotiating a low price will drive the seller out of business and can negotiate free of this additional constraint. Hence, although I know of no evidence that the transaction make the combined firm pivotal to any negotiating partner—and I

consider such an outcome highly unlikely—even if it did so, Raskovich’s work indicates that this could reduce rather than enhance Comcast’s negotiating position.¹³¹

- *Factors that may change the split of the surplus:* Adilov and Alexander (2006) extend the model of Raskovich (2003) to allow for asymmetric surplus division. They agree that “a precise relationship between firm size and bargaining power cannot be determined by theory” but rather is an empirical question.¹³² However, they consider three conditions under which a merger that increases a buyer’s size could, hypothetically, improve its bargaining power: (i) the merger may give the buyers more information about prices and other contractual terms; (ii) the merger may result in retaining a more skilled bargaining team (*e.g.*, the best negotiators from each merging party); and (iii) firm size and outside options may be positively correlated (larger firms may have a better fallback position irrespective of whether they are “buyers” or “sellers”). *As I show below, there is no evidence that any of these conditions apply to the transaction.*

102. Based on available evidence, I see no basis to conclude that the conditions identified in the theoretical economic literature for a merger to increase the combined

¹³¹ The Raskovich model is set up in terms of the effects of internalizing costs. But the intuition generalizes to any case in which edge provider surplus functions may be convex because working with a single ISP simply enables the edge provider to survive, with sizable profits only occurring when dealing with additional ISPs from which the edge provider can capture large incremental margins. In such a case, each separate ISP may be able to bargain for a share of those large incremental margins, whereas the combined firm will bargain over the overall surplus, including the less profitable deal with a first ISP, thus potentially reducing the bargaining power of the combined firm.

¹³² *Adilov and Alexander (2006)*, 310.

firm's bargaining power are satisfied for the current transaction. Indeed, the effects could well go in the other direction. In particular:

- As noted, there is no evidence that edge providers' surplus functions are concave; that is, no evidence that the per-customer surplus of edge providers is decreasing in the number of customers the edge provider can access. Indeed, to the extent that the demand for edge providers' services are subject to network effects—which arise when consumers place a higher value on a product when more consumers use the product—such effects are generally a source of increasing returns to scale, which would generate *convexity* in the providers' surplus functions.¹³³ For example, consider a hypothetical edge provider that develops a new interactive online video game and enters into negotiations with ISPs to determine how to divide the surplus created by distributing the game to an ISP's customers. Suppose this game becomes more attractive as more gamers play it (*i.e.*, the game exhibits positive network effects). In particular, suppose the per-subscriber surplus of the first gamer is assumed to be zero (because no one wants to play the game if no one else is playing) while the per-subscriber surplus of the 2nd gamer is assumed to be \$1 (*i.e.*, the game is more attractive to users when others are available to play). This increasing surplus with more gamers means that the surplus function is convex. Now suppose the first gamer was a customer of ISP 1 and the second gamer was a customer of ISP 2. If the two ISPs negotiate with the game developer separately, *conditional on the other having reached an*

¹³³ See David Besanko, David Dranove, Mark Shanley, and Scott Schaefer (2003), *Economics of Strategy*, 3rd Edition, Hoboken: John Wiley & Sons (hereinafter *Besanko et al. (2003)*), Chapter 12.

agreement with the edge provider (for example, with contracts that end in alternating years), then during each negotiation, each separate ISP is effectively bringing \$1 in surplus to the table (the value of the second gamer). However, if the two ISPs merge, the combined ISP is only bringing \$1 in surplus to the table (the total surplus arising from an agreement with the combined ISP), meaning that post-merger, the combined ISP is in a *weaker* bargaining position than the sum of the two separate ISPs. If for example, negotiations result in each side getting $\frac{1}{2}$ the surplus, then each separate ISP would each capture \$0.50 of surplus (\$1 total), leaving zero for the game developer, while the merged ISP would capture only \$0.50, leaving \$0.50 for the game developer.

- To the extent that critics of the transaction claim that the transaction would cause the combined firm to become sufficiently large to become “pivotal,” the model of Raskovich (2003) indicates that such an outcome would *lessen* rather than enhance the parties’ bargaining position.
- There is no evidence that the transaction will provide additional information that would affect negotiations (and utilizing such information might generate other efficiencies if it exists). In other words, there is no evidence that the combined firm would obtain information that would advantage it in negotiations simply by virtue of getting bigger.
- Comcast and TWC are already sophisticated negotiators—there is no evidence that the transaction would materially increase the bargaining skill of either party.
- Finally, I see no basis to conclude that combining Comcast’s and TWC’s (non-overlapping) broadband businesses would create a better fallback position:
 - As described above, with or without the merger, the content provided by edge providers is important to consumers (and thus to the demand for an ISP’s broadband business), and the loss of such content (due to failure to reach a deal with an edge provider or a CDN or transit provider) would be harmful to the end users who can no longer access that content and thus to

the ISP's broadband business. There is no basis to conclude that bringing together two ISPs with distinct footprints lessens the harm from loss of that content for any particular end user in a given area.

- In fact, to the extent that edge providers are offering content that is attractive to consumers, the harm from degrading that content may *increase* with the size of the buyer as a large ISP may have more reputational assets to protect. For example, problems anywhere in the network (*e.g.*, a particular congested link) might harm Comcast's reputation everywhere—meaning that a larger ISP may have a stronger incentive to protect quality throughout the entire network).

103. In sum, there is no theoretical basis to support a claim that the transaction will increase the combined firm's bargaining power.

104. **Second**, although the empirical literature is limited—and I am aware of no empirical literature that addresses negotiations between distributors and edge providers (or their agents) in particular—*empirical analysis of a related industry (bargaining between video distributors and content providers) indicates that bargaining effects can, go the other way, with a merger leading to reduced bargaining power.*¹³⁴

¹³⁴ See, *e.g.*, *Chipty and Snyder (1999)*, 326 (“large buyers do not benefit from positive bargaining effects in the cable television industry”).

(b) *Even if there are changes in relative bargaining power due to the transaction, this does not imply lower welfare*

105. Finally, I note that even if one were to conclude that, despite the evidence presented above, the transaction will significantly increase the combined firm's bargaining power vis-à-vis edge providers, such an effect is not itself anti-competitive. Put simply, shifts in bargaining power do not imply any reduction in total welfare. A change in bargaining power is distinct from increases in "monopoly" or "monopsony" power that are generally at the heart of antitrust concerns. The common thread of monopoly and monopsony power is a reduction in output—either a powerful seller (with monopoly power) restricts output supplied to drive prices up or a powerful buyer (with monopsony power) restricts output purchased to drive input prices down. The competitive harm in each case derives from the restriction of output (and associated price increase) ultimately available to end consumers. In contrast, a shift in bargaining power may result simply in a transfer of surplus from one bargaining party to the other, with no reduction in output and thus no anti-competitive reduction in welfare.¹³⁵ In fact, well-known economic results indicate that, in many bargaining settings, the buyer and seller have an incentive to reach a deal that leads to the economically efficient quantity, thereby

¹³⁵ See, e.g., Suchan Chae and Paul Heidhues (2004), "Buyer's Alliances for Bargaining Power," *Journal of Economics and Management Strategy*, 13: 731-754; Roman Inderst and Greg Shaffer (2007), "Buyer Power in Merger Control", in W.D. Collins, ed., *Issues in Competition Law and Policy*, ABA Antitrust Section, Chapter 20.

eliminating the deadweight loss.¹³⁶ More generally, in a bargaining context, one cannot point to the simple versions of economic theories of monopsony or monopoly power to claim that the merger will generate competitive harms.

III. THE ECONOMIC LOGIC BEHIND SCALE-BASED BENEFITS FROM THE PROPOSED TRANSACTION

106. In contrast to the lack of economic support for claimed competitive harms from the transaction, there is a long-established economic basis supporting the conclusion that the transaction will result in substantial pro-competitive consumer benefits. The economic basis follows from two well-established economic principles:

- By competing in more regions, the combined firm will be able to capture more revenue from any given investment, thus resulting in more investments (particularly those for which a large component of costs are “fixed” or invariant to scale) meeting the necessary hurdle rate to be undertaken. By incentivizing more investment, the proposed transaction is likely to lead to more innovation and greater output.
- As a matter of both economics and experience, such scale is difficult to obtain via partnerships or other collaborations among different firms, as conflicting incentives among partners, “hold up” problems that limit investments in arms-length ventures, “double marginalization,” coordination difficulties, and other

¹³⁶ See, e.g., Jean Tirole (1988), *The Theory of Industrial Organization*, Cambridge: The MIT Press, 22-25.

transactions costs limit the efficacy of such collaborations and sometimes prevent them from occurring at all.

In the remainder of this section, I explain these economic principles in more detail.

A. FOR INVESTMENTS INVOLVING FIXED COSTS, INCREASED SCALE LEADS TO LARGER RETURNS AND THUS MAKES MORE INVESTMENTS PROFITABLE

107. By allowing the combined firm to amortize fixed cost investments over a larger base of customers, the transaction is likely to generate new investment and innovation that would not have been profitable absent the transaction. The economic logic behind this conclusion is simple and well established.¹³⁷ Firms generally choose to undertake investments for which the incremental revenues expected to be generated due to the investment are large enough to yield a rate of return that meets or exceeds a targeted rate, known as a “hurdle rate.”¹³⁸ When investments have the character that some or all of the costs are “fixed”—meaning costs that do not grow as the investment is extended to a larger scale (or at least do not grow proportionally to the increase in scale)—then greater

¹³⁷ See, e.g., Stephen A. Ross, Randolph W. Westerfield, and Bradford D. Jordan (2010), *Fundamentals of Corporate Finance*, 9th Edition, Boston: McGraw-Hill, Chapter 11.3 (discussing the importance of number of sales and fixed costs in break-even analysis); Dennis W. Carlton and Jeffrey M. Perloff (2004), *Modern Industrial Organization*, 4th Edition, Prentice Hall, Chapter 2.

¹³⁸ See, e.g., Steven C. Salop (1986), “Measuring Ease of Entry,” *The Antitrust Bulletin*, 563. (“One can measure the degree of scale economies with the concept of minimum viable scale (MVS). The MVS is the total sales a hypothetical new entrant would need to achieve in order to earn a sufficient rate of return (hurdle rate) on its invested capital to justify its entry. If the entrant cannot reach MVS, its average costs will be increased and its return will be unsatisfactory.”)

scale will lead to greater revenue without proportionally greater costs. As a result, more investments will meet the hurdle rate and thus more investments can profitably be undertaken, increasing the firm's incentive to invest in innovative new services.

108. Specific features of Comcast's business model heighten the investment and innovation benefits from greater scale. In particular, Comcast generally deploys products in a relatively homogeneous manner throughout a region and often throughout its entire footprint.¹³⁹ Therefore, it is relatively easy for Comcast to serve potential new customers in a consistent manner, and there are substantial scale economies in serving an area where Comcast has an existing plant.¹⁴⁰

109. Comcast's ordinary-course modeling of potential investments illustrates the concepts laid out above; Comcast computes the rate of return on potential investments and compares it to a hurdle rate.¹⁴¹ I discuss one such example pertaining to Comcast's decision to provide backhaul services to a major wireless provider in Section IV.A.2,

¹³⁹ Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews.

¹⁴⁰ Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews. I understand that TWC has more heterogeneity in its offerings, reducing the benefits it obtains from scale. (*Id.*)

¹⁴¹ See, e.g., []

[]]. The NPV method discounts the expected stream of cash flows from an investment by the hurdle rate to determine whether the present value of the investment is positive, *i.e.*, whether the expected rate of return from the investment exceeds the hurdle rate.

below. Hence, based on Comcast's own internal investment logic, the increased scale from the transaction will increase the expected return on potential network and other significant broadband investments, and, therefore, more investments will meet internal thresholds and be undertaken.

B. COMCAST'S CURRENT SCALE HAS ENABLED IT TO ACHIEVE SOME SCALE-BASED BENEFITS

110. To be clear, I am not claiming that Comcast obtains no benefits from its scale today. To the contrary, Comcast is a leading broadband provider with advanced technology in large part because of its scale obtained via earlier transactions. My point is that the combined firm's ability to undertake high fixed cost investments will only grow from the transaction, and these incremental fixed cost investments will benefit consumers and competition.

111. In what follows, I provide examples from Comcast's experience illustrating the types of investments that require sufficient scale to be undertaken and thus the types of investments that the proposed transaction will further incentivize and accelerate.

112. Comcast's development of the X1 platform is an excellent example of the type of investment that can be undertaken only with sufficient scale. The X1 platform provides users with a high-quality user interface that facilitates, among other features, integrated search with instant play, access to Internet and television-enabled applications,