REDACTED – FOR PUBLIC INSPECTION

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

In the Matter of	)	
	)	
Applications of	)	
	)	
Comcast Corp. and	)	MB Docket No. 14-57
Time Warner Cable Inc.	)	
	)	
For Consent To Transfer Control of	)	
Licenses and Authorizations	)	

APPLICATIONS AND PUBLIC INTEREST STATEMENT

DESCRIPTION OF TRANSACTION, PUBLIC INTEREST SHOWING,
AND RELATED DEMONSTRATIONS

COMCAST CORPORATION

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April 8, 2014

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I. INTRODUCTION AND SUMMARY

The proposed merger of Comcast Corporation ("Comcast") and Time Warner Cable Inc. ("TWC") (together, "Applicants") will provide unique benefits to both consumers and businesses throughout the combined company's service area, and broadly advance the public interest in multiple concrete ways. This transaction will enhance consumer welfare and competition and deliver substantial public interest benefits, including through competitive entry in market segments neither company can meaningfully serve on its own today. Together, Comcast and TWC will bring to millions of households and businesses of all sizes the next generation of broadband Internet, video, voice, and related technologies and services, and will compete more effectively against communications, media, and technology providers with national and global scale.

The two companies, which serve distinct geographic areas, both began as cable operators offering television services to consumers. Today, each Applicant offers a diverse array of services and technologies to consumers, and increasingly competes in its respective footprint for business customers as well. Offering this broad suite of advanced services and a rich video experience is a capital-intensive, high-fixed-cost endeavor – in a space where competition is intense and continued investment and innovation are essential. And competition is increasing as this marketplace becomes more diverse and expansive.

To date, Comcast has been able to adapt to this changing marketplace through a commitment to network upgrades and substantial investment in research and development. TWC has made significant strides in video technology and business services, though its smaller scale and scope have limited some of those efforts. By combining these two companies' technological developments and know-how, and their geographic reach, along with Comcast's

strong balance sheet, commitment to invest significantly in the TWC systems, and substantial expertise in efficiently upgrading cable systems, the post-transaction company will be well positioned to compete against its national and global competitors, to improve the customer experience today, and to forge ahead to meet future challenges and needs.

For **consumers**, this means expanded access to, and more rapid deployment of, the industry-leading technology, services, and programs that Comcast is dedicated to providing, including:

- High-speed broadband services available on bundled and standalone bases;
- A fully upgraded network that provides highly reliable and secure service;
- A nationally acclaimed and comprehensive low-income broadband adoption program;
- The most robust and advanced VOD and TV Everywhere experience;
- The best-in-class video technology and user interface;
- The most successful alternative to traditional voice services; and
- A commitment to diversity and inclusion, and to providing accessible solutions to people with disabilities.

Nowhere will these benefits be more important than in the broadband space. While TWC has upgraded its entire network to DOCSIS 3.0 and has plans to improve speeds and further digitize its network, Comcast has already transitioned to a fully digital network, stands ready to implement DOCSIS 3.1 (the next-generation broadband standard), and has rolled out some of the fastest Internet speeds and the largest Wi-Fi network in the nation. This transaction will accelerate network upgrades in the TWC markets and produce a more advanced broadband network. As the Commission has recognized, such network investment not only answers essential consumer needs in the short term, but also will spur demand for the applications and content of tomorrow. And substantial investment by one network provider provokes responsive

investment and accelerated deployment by competitors – a dynamic richly borne out by the past two decades of spirited broadband competition.

Significant benefits will result for **business** customers, as well. Comcast and TWC have made some inroads into the business market, offering small- and medium-sized businesses innovative services and a better value proposition than was previously available to such customers from legacy providers – and provoking competitive responses by those incumbents. Each company has had some success, but its limited geographic scope has constrained its ability to offer truly meaningful competition to the established providers. The combined company's greater geographic reach and its combined expertise and services will allow it to become a stronger competitor, offering businesses of all sizes better options, lower prices, higher quality, and enhanced services.

Likewise, the transaction will result in new options for **advertisers**. The combined company will have the scale to market on a near-national basis and to invest in the development and deployment of dynamic ad insertion and addressable technologies for use in VOD and other cable and online programming that will bring added value to programmers and advertisers. This, in turn, should incentivize programmers to make additional popular content available on VOD and other platforms, to the benefit of consumers.

Finally, the transaction will extend a variety of other public interest benefits to the TWC markets, including conditions and commitments resulting from the NBCUniversal transaction. These include application of the Open Internet rules and Comcast's commitment to offer standalone broadband, among others. The TWC markets also will benefit from Comcast's deep dedication to broadband adoption, diversity, accessibility, and cybersecurity.

The Commission can be confident in all the benefits described above, not only because many are essential to the transaction's rationale, but also because of Comcast's record of keeping its promises in prior transactions to bring new benefits to consumers and competition. Time and time again, Comcast has delivered – and over-delivered – on its promises to unleash more investment and innovation. Together with TWC, it is fully poised to do so again, including a commitment to add substantial incremental investments to TWC's planned upgrades and enhancements over the next three years.

In contrast to these clear public interest benefits, there is no credible theory of harm arising from the transaction. After the transaction, customers in the Comcast and TWC markets will have as many providers to choose from – for Internet, video, or voice – as they have today. Said another way, there is no change in local market share – the only geographic market of any relevance to the core services at issue here – in *any* market Comcast or TWC serves, because Comcast and TWC do not compete today, and Comcast will simply replace TWC as the provider in the latter's service areas. In contrast to certain proposed mergers of direct competitors that were met with skepticism because they would have reduced choice for consumers, there is no horizontal consolidation issue here.

Vertical effects similarly raise no concerns. In the past, there was concern about "buying power" in the video marketplace, on the theory that allowing a cable company to serve too many households would give that company too much influence over the viability of unaffiliated programming networks. That concern was tested in 2001, and again in 2009, in connection with a 30 percent cable ownership cap that had been put in place by the Commission. In both cases, the court concluded that this theoretical concern was not supported by the marketplace facts and decisively rejected a 30 percent standard. As the court said in 2009:

> [T]he record is replete with evidence of ever increasing competition among video providers. *Cable operators, therefore, no longer have the bottleneck power over programming that concerned the Congress in 1992*.

The court also noted that, "[b]ased upon the record before the [same] court [in 2001], the [FCC's horizontal ownership] subscriber limit . . . could not have been lower than 60%," and went on to conclude that, "[i]n light of the changed marketplace, the Government's justification for the 30% cap is even weaker now than in 2001."

Competition has only *increased* since this ruling. Notably, since 2009 when the court last rejected the 30 percent cap, the two nationwide DBS providers have added another 1.7 million subscribers and the telco video providers have added 6.2 million subscribers, while traditional cable operators have *lost* 7.3 million video subscribers. And this is just one dimension of the competition that Comcast and TWC face in a dynamic and increasingly mobile and global marketplace marked by innovation and consumer choice. Internet and device companies, with newfound global scale, also are competing aggressively in the video marketplace and in the larger broadband ecosystem. For example, Netflix now has over 33 million customers in the United States alone, with another 11 million international customers; Google's video websites now attract over 157 million unique viewers each month who watch nearly 13 billion videos; Apple iTunes viewers purchase over 800,000 TV episodes and over 350,000 movies *per day*. Apple has launched Apple TV and seems poised to launch a more comprehensive set-top box product. Likewise, Amazon currently offers a streaming video service and just announced the planned release of Amazon Fire TV, an advanced video set-top device. And some of these companies have annual revenues and/or market capitalizations that are two or three times greater than Comcast's. On top of this, there are potential new online entrants, and Verizon, Dish, and DirecTV have been making progress on this front just in the last month. In the evolving video

marketplace in which these companies have thrived, there is no reason why a cable company should be limited in evolving as well, especially one that has time and again demonstrated its willingness to meet and enhance competition through innovation and investment. Added scale will make that innovation go faster and that investment go farther.

Notwithstanding the absence of plausible horizontal harms, however, Comcast is prepared to divest systems totaling approximately 3 million video subscribers, such that Comcast-managed subscribers will remain at a level that is below the now-vacated 30 percent horizontal limit.

Nor is there cause for concern in the broadband marketplace. Comcast and TWC provide broadband services in different geographic areas, so there is no reduction in consumer choice as a result of this transaction. Internet service providers ("ISPs") like Comcast and TWC are not aggregators of content for their broadband customers, but instead serve as a means of access for any and all of the Internet content their customers want. And they do so against an increasingly competitive backdrop, in which traditional phone companies as well as new providers such as Google Fiber and others are actively pursuing market share. Indeed, the Commission's own data demonstrate that consumers enjoy a high level of choice among providers. Furthermore, wireless broadband is increasingly emerging as a competitive alternative to wired broadband given the accelerating speed and reliability of advanced wireless networks, the growing value of mobility, and the fact that consumers increasingly use tablets and smartphones as "first screens." In this highly competitive marketplace, there is simply no economic incentive for Comcast to use its broadband network to interfere with its customers' access to edge providers' content on the backbone or the last mile – Comcast customers place a high premium on being able to access any Internet content they want. In any event, Comcast's Open Internet commitment removes all

doubts and provides an additional regulatory safeguard – one that is not present for any other ISP in the market.

In sum, an objective weighing of the significant public interest benefits that are inherent in this transaction against the speculative and ill-defined harms that are unlikely to arise should lead to ready approval.

II. DESCRIPTION OF THE TRANSACTION

A. The Proposed Transaction

Comcast has entered into an agreement with TWC whereby Comcast will acquire 100 percent of TWC's equity in exchange for Comcast Class A shares ("CMCSA"). The proposed transaction is a straightforward acquisition of TWC, and Comcast plans to retain all of TWC's existing assets, subject to divestitures of cable systems totaling approximately 3 million subscribers. As illustrated in the structure charts included in Exhibit 3, at the closing of the transaction, Tango Acquisition Sub, Inc. ("Merger Sub"), a new direct wholly owned subsidiary of Comcast, will merge with TWC under Delaware law. At that time, the separate corporate existence of Merger Sub will cease and, thereafter, TWC will be a wholly owned subsidiary of Comcast. Contemporaneously with the merger, each TWC share will be converted into the right to receive 2.875 shares of CMCSA.

B. The Applicants

1. Comcast

Comcast Corporation is a global media and technology company with two primary businesses – Comcast Cable and NBCUniversal – with approximately 136,000 employees. As illustrated in the first map in Exhibit 7, Comcast's network facilities cover portions of 39 states

and the District of Columbia, and Comcast faces strong competition in each of those areas for all of its services.

a. Comcast Cable

Comcast Cable is a leading provider of video, high-speed Internet, digital voice, and other next-generation services and technologies to millions of residential customers and small- and medium-sized businesses.

i. Cable Systems and Video Services

Comcast currently owns and operates cable systems serving approximately 21.7 million video customers, including residential and business customers.[1] Since 1996, Comcast and its predecessors-in-ownership have invested tens of billions of dollars to upgrade network infrastructure by installing fiber optics and other technological enhancements. Comcast led the industry in transitioning to digital and has already implemented an all-digital platform across its systems.

Comcast provides a variety of video services with access to tens of thousands of entertainment choices under the Xfinity brand. Customers enjoy a full array of both traditional and advanced video products, including hundreds of channels of linear video programming from local broadcast stations, premium cable programmers, and national, regional, and local cable networks; programming packages tailored for diverse audiences; pay-per-view services; an impressive range of high-definition ("HD") programming; approximately 50,000 video-on-demand ("VOD") choices on Xfinity On Demand, most of which are available to digital video customers at no additional charge; digital video recorder ("DVR") services; and interactive

[1] Comcast Corp., Annual Report (Form 10-K), at 3 (2013) ("Comcast 10-K").

programming guides. In addition, Comcast recently began to offer its customers the option to purchase and own digital copies of movies and television shows.

Through Xfinity.com/TV and the Xfinity TV Go App, Comcast customers can stream over the Internet to their PCs and mobile devices over 50 linear cable networks and thousands of hours of the latest TV shows and popular movies, and, with the Xfinity TV Go App, Comcast customers can even download movies and shows to their mobile device to take anywhere. The most striking example of Comcast's efforts to provide its customers with cutting-edge services is Comcast's next-generation entertainment operating system, the X1 platform, which is now available across Comcast's entire footprint. The X1 platform provides a state-of-the-art cloud-based user interface and, in select markets, the ability to stream to computers and mobile devices in the home practically the entire channel lineup (including PEG and must-carry channels). And with the launch of the new X1 DVR with cloud technology, Comcast customers will be able to record more shows; access them in their homes on multiple TVs, computers, and mobile devices; and download their recordings to mobile devices.

ii. Broadband Internet

Comcast owns and operates one of the most robust networks in the country. Comcast's high-speed Internet service currently has approximately 20.7 million customers, including residential and business customers.[2] Comcast has deployed DOCSIS 3.0 to almost its entire broadband footprint.[3]

Comcast's investments of tens of billions of dollars over the past 20 years to continually upgrade its network have led to clear benefits to customers. Comcast has increased broadband

[2] Comcast 10-K, at 3.

[3] Comcast has deployed DOCSIS 3.0 to 99.8 percent of its footprint.

speeds 12 times in 12 years, and the vast majority of Comcast customers now subscribe to speed tiers with download speeds of 25 Mbps and upload speeds of 5 Mbps along with the fastest in-home Wi-Fi – in fact, over one-third of Comcast customers have download speeds of 50 Mbps or more and upload speeds of 10 Mbps or more. Comcast offers broadband options at multiple speed levels. For customers that want ultra high-speed Internet, Comcast now offers a speed tier of 105 Mbps downstream and 20 Mbps upstream throughout much of its service area, and has begun to offer a tier of 505 Mbps downstream and 100 Mbps upstream in an expanding number of markets by leveraging fiber deeper into its network. Soon, Comcast will be able to offer speeds of 250 Mbps downstream and 50 Mbps upstream to customers' homes across its footprint using its existing Hybrid Fiber/Coax ("HFC") network infrastructure.

iii. Voice Services

Delivering on its promise made in its acquisition of AT&T Broadband over ten years ago to bring new competition to the market for voice services,[4] Comcast now provides voice services to approximately 10.7 million customers, including residential and business customers.[5] Using Voice over Internet Protocol ("VoIP") technology, Comcast provides competitive facilities-based voice services to deliver digital-quality phone service, plus enhanced features that are integrated with other Comcast services. Comcast has brought significant innovations to its voice service in the past several years and offers Xfinity Voice customers unlimited nationwide talk and text (including on their mobile devices over Wi-Fi using Voice 2go on the Xfinity Connect App), access to voicemail on the Xfinity Connect website, and Readable Voicemail that enables

[4] *See Applications for Consent to the Transfer of Control of Licenses from Comcast Corp. and AT&T Corp., Transferors to AT&T Comcast Corp., Transferee*, Memorandum Opinion and Order, 17 FCC Rcd. 23246 ¶¶ 186-188 (2002) (noting that Comcast and AT&T asserted that the merger would "further accelerate the deployment of facilities-based local telephone competition, creating substantial public interest benefits"), *aff'd sub nom. Consumer Fed'n of Am v. FCC*, 348 F.3d 1009 (D.C. Cir. 2003) ("*Comcast-AT&T Broadband Order*").

[5] Comcast 10-K, at 3.

customers to read their voicemail messages over email. By integrating Xfinity Voice with other services, Comcast provides innovative features like Universal Caller ID, which identifies a caller on a customer's TV, computer, or mobile device.

iv. Business Services

Comcast is an aggressive new entrant in the business services market, currently focused on serving small- and medium-sized businesses. Comcast's services for business customers include broadband, voice, and video offerings; a website hosting service; an interactive tool that allows customers to share, coordinate, and store documents online; hosted voice services using cloud network servers; a business directory listing; "Be Anywhere" functionality that allows customers to make and receive calls from any device at any location with one phone number; and an integrated suite of cloud-based business solutions like data backup, security, and online storage. Comcast also provides advanced voice services and Ethernet network services to business customers that connect multiple locations. Moreover, Comcast is active in the wholesale business, particularly with respect to cellular backhaul services that help wireless carriers manage their network bandwidth more efficiently by leasing fiber facilities to transport wireless traffic from their cell towers.

v. Advertising

Comcast Spotlight is the advertising sales division of Comcast Cable and provides a variety of advertising solutions for local, regional, and national advertisers. Comcast Spotlight offers television, online, VOD, multi-screen, and addressable advertising services. Currently, Comcast Spotlight has a presence in almost 80 markets. Comcast, together with TWC and Cox Media, is also an owner of NCC Media, which represents national spot advertising sales for cable, satellite, and telco programming distributors across the country.

vi. Cable Programming

Comcast directly owns interests in the following cable program networks and services: MLB Network (8.3 percent), NHL Network (15.6 percent), Midco Sports Network (50 percent), iN Demand (54 percent), and Streampix (100 percent), as well as the following local origination channels: Pittsburgh Cable News Network (30 percent), C2 (100 percent), Comcast Entertainment Television (100 percent), Comcast Hometown Network (100 percent), Comcast Television Network (100 percent), CN100 (100 percent), HoosierTV (100 percent), Utah Channel 6 (100 percent), and WNFM-TV (100 percent).[6]

b. NBCUniversal

NBCUniversal, which is owned and controlled by Comcast, is one of the world's leading media, news, and entertainment companies. NBCUniversal operates the NBC and Telemundo broadcast television networks. Ten local NBC stations are owned and operated by NBCUniversal. Telemundo's operations include 17 owned-and-operated local stations. NBCUniversal's national cable networks include the following (100 percent ownership unless otherwise noted): Bravo, Chiller (80 percent), Cloo (formerly Sleuth), CNBC, CNBC World, E!, Esquire Network (formerly Style), G4, Golf Channel, MSNBC, mun2, NBC Sports Network (formerly Versus), Oxygen, Sprout, SyFy, Universal HD, and USA Network. In addition, NBCUniversal owns non-controlling interests in RLTV (7.7 percent), Universal Sports (11 percent), ShopNBC (14.5 percent), FEARnet (31 percent), The Weather Channel Companies (25 percent), and TV One (47.2 percent). NBCUniversal also owns New England Cable News (100

[6] Comcast also has interests in other, smaller local origination channels.

percent), a regional news network, and has minority interests in Television Korea 24 (1 and 2) (14 percent) and Saigon Broadcasting Television Network (50 percent).[7]

Several regional sports networks ("RSNs") are also part of NBCUniversal's cable programming portfolio. NBCUniversal owns interests (with percentage interests shown in parenthesis) in Comcast SportsNet Houston (22.5 percent),[8] Comcast SportsNet Chicago (30 percent), Comcast SportsNet Bay Area (67 percent), Comcast SportsNet Philadelphia (75 percent), Comcast SportsNet New England (80 percent), Cable Sports Southeast (81 percent),[9] Comcast Sports Southwest (100 percent), Comcast SportsNet California (100 percent), Comcast SportsNet Mid-Atlantic (100 percent), Comcast SportsNet Northwest (100 percent), and The Comcast Network (100 percent). In addition, NBCUniversal has a minority interest in SportsNet New York (8.2 percent).[10]

NBCUniversal has other businesses as well, including film and television production studios, theme parks, and online services.

2. Time Warner Cable

TWC is a leading provider of video, high-speed Internet, and voice services to residential and business customers. As illustrated in the map in Exhibit 7, TWC's network facilities cover

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[7] NBCUniversal also has a 33 1/3 percent non-controlling interest in Hulu. Pursuant to the NBCUniversal Conditions, Comcast has no management rights in Hulu.

[8] On February 4, 2014, a bankruptcy court entered an order for relief in connection with Comcast SportsNet Houston, thus making the network a debtor under Title 11 of the United States Code. The bankruptcy case is proceeding and it has yet to be determined whether the network will be reorganized, sold, or liquidated.

[9] Cable Sports Southeast recently announced plans to cease operations on May 31, 2014.

[10] NBCUniversal's ownership of cable program networks has actually *decreased* since the Comcast-NBCUniversal transaction. In particular, NBCUniversal is no longer affiliated with 11 A&E national video programming services (i.e., A&E, Bio, Crime & Investigation Network, Current, History, History En Espanol, History International, Lifetime, Lifetime Movie Network, Lifetime Real Women, Military History). *See* Michael J. de la Merced, *Comcast to Sell Back Its Stake in A&E for $3 Billion*, N.Y. Times, July 10, 2012, *available at* http://dealbook.nytimes.com/2012/07/10/comcast-to-sell-back-its-stake-in-ae-for-3-billion/?_php=true&_type=blogs&_r=0.

portions of 31 states, and TWC faces strong competition in each of those areas for all of its services.

a. Cable Systems and Video Services

TWC is the fourth-largest multichannel video programming distributor ("MVPD") in the United States, with cable systems serving approximately 11.4 million residential and business customers. TWC has developed and deployed switched digital video technology, and its cable systems typically provide access to hundreds of linear channels and 18,000 hours of VOD programming. TWC services include features like StartOver, which allows customers to restart a live program in progress, and LookBack, which allows customers to watch programs up to three days after they air live, all without a DVR. TWC offers various tiers and packages of video programming, as well as specialty programming tiers tailored to particular interests. TWC's all-digital migration is complete in about 17 percent of its footprint, and TWC plans to be all-digital in 75 percent of its footprint by the end of 2016.

Like Comcast, TWC offers live streaming service and access to on-demand services to its customers on a range of devices in the home using TWC's TV apps. TWC's customers also can access some video programming on computers outside the home via www.twctv.com.

b. Broadband Internet

TWC serves approximately 11.6 million high-speed Internet customers, including residential and business customers. TWC offers a range of speeds at different price points – from up to 2 Mbps downstream and up to 1 Mbps upstream to up to 50 Mbps downstream and up to 5 Mbps upstream – in most markets. And, in certain select markets (such as New York City and Los Angeles), TWC recently began offering speed tiers of up to 75-100 Mbps downstream and up to 5 Mbps upstream.

c. Voice Services

TWC serves approximately 5.3 million residential and business voice customers. TWC's broadband infrastructure has enabled it to deploy interconnected VoIP services throughout its geographic footprint. Indeed, TWC was the first multi-system cable operator – and one of the first service providers – to introduce a mass-market, facilities-based VoIP service, Digital Phone, bringing a reliable, feature-rich, competitive voice alternative to millions of residential consumers. TWC's voice services offer customers unlimited local and long-distance calling throughout the United States and to Canada, Puerto Rico, and Mexico, together with a variety of calling features including call waiting, call forwarding, distinctive ring tones, and caller ID on the customer's telephone, computer, or television. TWC also provides a free web portal, VoiceZone, which allows voice customers to customize their service features, set up caller ID on personal computers, block unwanted calls, and access voicemail, all using the Internet.

d. Business Services

TWC offers a wide variety of products and services to business customers, including high-capacity transmission services (such as Metro Ethernet), video, high-speed Internet, and voice services, as well as hosting and cloud computing services (through its NaviSite subsidiary), all in competition with the incumbent local exchange carriers ("ILECs") and other service providers. TWC offers these services on a retail and wholesale basis using its own network infrastructure and third-party infrastructure. TWC's retail customers consist primarily of small- and medium-sized businesses, and TWC also has made some initial strides in serving enterprise businesses with multiple locations, as well as government, education, and non-profit institutions. In addition, TWC offers wholesale transport services to wireless providers for cell tower backhaul and to other service providers. In December 2013, TWC acquired DukeNet

Communications LLC, adding new fiber capacity to serve its business customers.

e. Advertising

TWC sells video and online advertising to local, regional, and national customers. As noted above, TWC, together with Comcast and Cox, is an owner of NCC Media.

f. Cable Programming

TWC owns and manages a number of local news channels (including Time Warner Cable News NY1), local sports channels, and local lifestyle channels.[11] In October 2012, TWC launched two RSNs, one in English and one in Spanish, that carry Los Angeles Lakers basketball games, as well as other regional sports programming. Some of TWC's local channels also include qualifying RSN content, including two that carry professional sports programming in Spanish and 12 others that carry local or regional college sports programming. In addition, TWC has a minority interest in SportsNet New York (26.8 percent), and provides affiliate sales, ad sales, and certain other production and technical services to (but has no ownership interest in) SportsNet LA, an RSN that carries the Los Angeles Dodgers' baseball games and other sports programming and that is owned and was recently launched by American Media Productions, LLC. TWC also has attributable interests in a national network, MLB Network (6.35 percent), and in the iN Demand programming service (29.3 percent).

III. STANDARD OF REVIEW

The Commission has stated that it will approve a transfer of control of authorizations and licenses connected with a proposed transaction under Sections 214(a) and 310(d) of the Act if the proposed transaction does not violate a statute or rule, and if, after weighing "the potential public interest harms of the merger against any potential public interest benefits," it concludes that, "on

[11] A list of TWC's programming interests is attached as Exhibit 8.

balance," the transfer "serves the public interest, convenience and necessity."[12] This standard involves balancing potential public interest benefits from the transfer against potential harms,[13] and the applicants must show "by a preponderance of the evidence, that the proposed transaction, on balance, will serve the public interest."[14] In assessing the potential public interest benefits of a proposed transaction, the Commission "focuses on demonstrable and verifiable public interest

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[12] *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from MediaOne Group, Inc., Transferor, to AT&T Corp., Transferee*, Memorandum Opinion and Order, 15 FCC Rcd. 9816 ¶ 8 (2000) ("*AT&T-MediaOne Order*"); *see also Applications of AT&T Inc. and Atlantic Tele-Network, Inc.*, Memorandum Opinion and Order, 28 FCC Rcd. 13670 ¶ 12 (2013) ("*AT&T-ATN Order*"); *Applications Filed for Transfer of Control of Insight Commc'ns Co. to Time Warner Cable Inc.*, Memorandum Opinion and Order, 27 FCC Rcd. 497 ¶ 7 (2012) ("*Insight-TWC Order*"); *Applications filed by Qwest Commc'ns Int'l Inc. and CenturyTel, Inc. d/b/a CenturyLink for Consent to Transfer of Control*, Memorandum Opinion and Order, 26 FCC Rcd. 4194 ¶ 7 (2011) ("*CenturyLink-Qwest Order*"); *Applications for Consent to the Assignment and/or Transfer of Control of Licenses from Adelphia Commc'ns Corp. (and Subsidiaries, Debtors-In-Possession), Assignors, to Time Warner Cable Inc. (Subsidiaries), Assignees, Adelphia Commc'ns Corp. (and Subsidiaries, Debtors-In-Possession), Assignors and Transferors, to Comcast Corp. (Subsidiaries), Assignees and Transferees*, Memorandum Opinion and Order, 21 FCC Rcd. 8203 ¶ 23 (2006) ("*Adelphia Order*"); *AT&T Inc. and BellSouth Corp. Application for Transfer of Control*, Memorandum Opinion and Order, 22 FCC Rcd. 5662 ¶ 19 (2007) ("*AT&T-BellSouth Order*").

[13] *See General Motors Corp. & Hughes Elec. Corp., Transferors, and News Corp., Transferee, for Authority to Transfer Control*, Memorandum Opinion and Order, 19 FCC Rcd. 473 ¶ 15 (2004) ("*News Corp.-Hughes Order*"); *see also AT&T-ATN Order* ¶ 12; *CenturyLink-Qwest Order* ¶ 7; *AT&T-BellSouth Order* ¶ 19; *Applications for Consent to the Transfer of Control of Licenses from Comcast Corp. and AT&T Corp., Transferors, to AT&T Comcast Corp., Transferee*, Memorandum Opinion and Order, 17 FCC Rcd. 23246 ¶ 26 (2002) ("*Comcast-AT&T Broadband Order*").

[14] *AT&T-ATN Order* ¶ 12; *Applications of SOFTBANK CORP., Starburst II, Inc., Sprint Nextel Corp., and Clearwire Corp. for Consent to Transfer Control of Licenses and Authorizations; Petitions for Reconsideration of Applications of Clearwire Corp. for Pro Forma Transfer of Control*, Memorandum Opinion and Order, Declaratory Ruling, and Order on Reconsideration, 28 FCC Rcd. 9642 ¶ 23 (2013) ("*Softbank-Sprint Order*"); *SkyTerra Commc'ns, Inc. Transferor, & Harbinger Capital Partners Funds, Transferee, Applications for Consent to Transfer of Control of SkyTerra Subsidiary, LLC*, Memorandum Opinion and Order and Declaratory Ruling, 25 FCC Rcd. 3059 ¶ 10 (2010) ("*SkyTerra-Harbinger Order*"); *Applications of AT&T Inc. and Centennial Commc'ns Corp. for Consent to the Transfer Control of Licenses, Authorizations, and Spectrum Leasing Arrangements*, Memorandum Opinion and Order, 24 FCC Rcd. 13915 ¶ 27 (2009) ("*AT&T-Centennial Order*"); *Applications for Consent to Transfer of Control of Licenses; XM Satellite Radio Holdings Inc., Transferor, to Sirius Satellite Radio Inc., Transferee*, Memorandum Opinion and Order and Report and Order, 23 FCC Rcd. 12348 ¶ 30 (2008); *News Corp. & DIRECTV Group, Inc., Transferors, and Liberty Media Corp., Transferee, Applications for Authority to Transfer Control*, Memorandum Opinion and Order, 23 FCC Rcd. 3265 ¶ 22 (2008); *AT&T-BellSouth Order* ¶ 19; *Verizon Commc'ns Inc. & MCI, Inc. Applications for Approval of Transfer of Control*, Memorandum Opinion and Order, 20 FCC Rcd. 18433 ¶ 16 (2005) ("*Verizon-MCI Order*"); *SBC Commc'ns Inc. & AT&T Corp. Applications for Approval of Transfer of Control*, Memorandum Opinion and Order, 20 FCC Rcd. 18290 ¶ 16 (2005) ("*SBC-AT&T Order*").

benefits that could not be achieved if there were no merger."[15] Its evaluation also includes, among other things, a "deeply rooted preference for preserving and enhancing competition in relevant markets [and] accelerating private sector deployment of advanced services . . . ."[16] In particular, consistent with the Commission's broader public interest mandate, such analysis may also entail assessing whether the transaction will affect the quality of communications services or will result in the provision of new or additional services.[17]

The Commission's analysis of potential harms entails both an examination of potential anticompetitive effects and an inquiry into whether the transaction would violate the Act or the Commission's implementing rules, or otherwise substantially frustrate the Commission's implementation or enforcement of the Act.[18] The Commission has repeatedly stressed that a

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[15] *AT&T-MediaOne Order* ¶ 154; *see also Applications of Nextel Commcn's, Inc. & Sprint Corp. for Consent to Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, 20 FCC Rcd. 13967 ¶ 129 (2005) ("*Sprint-Nextel Order*") ("We examine whether operation of the combined entity could yield consumer benefits unattainable absent a merger."). In particular, the Commission's review is confined to the transaction before it rather than the relative merit of any hypothetical alternative transactions. *See, e.g., Citadel Commc'ns Co., Ltd. and Act III Broad. of Buffalo, Inc.*, Memorandum Opinion and Order, 5 FCC Rcd. 3842 ¶ 16 (1990) ("Section 310(d) of the Act limits our consideration to the buyer proposed in an assignment application, and we cannot consider whether some other proposal might comparatively better serve the public interest.").

[16] *See AT&T-ATN Order* ¶ 13; *Softbank-Sprint Order* ¶ 24; *AT&T-Centennial Order* ¶ 28; *CenturyLink-Qwest Order* ¶ 8.

[17] *See Applications of Comcast Corp., General Elec. & NBCUniversal, Inc. for Consent to Assign Licenses and Transfer Control of Licenses*, Memorandum Opinion and Order, 26 FCC Rcd. 4238 ¶ 23 (2011) ("*Comcast-NBCUniversal Order*" or "*NBCUniversal Order*"); *Comcast-AT&T Broadband Order* ¶ 27; *Wavecom Solutions Corp., Transferor, & Hawaiian Telcom Inc., Transferee, Applications for Consent to Transfer of Control*, Memorandum Opinion and Order and Declaratory Ruling, 27 FCC Rcd. 16081 ¶ 8 (2012)*; Applications filed by Global Crossing Ltd. & Level 3 Commc'ns, Inc. for Consent to Transfer Control*, Memorandum Opinion and Order and Declaratory Ruling, 26 FCC Rcd. 14056 ¶ 11 (2011) ("*Level 3-Global Crossing Order*"); *CenturyLink-Qwest Order* ¶ 8*; see also* Remarks of Jonathan Sallet, Acting General Counsel, FCC, Conference on Competition and IP Policy in High-Technology Industries, Stanford, CA (Jan. 22, 2014), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0124/DOC-325267A1.pdf.

[18] *See News Corp.-Hughes Order* ¶ 16; *AT&T-MediaOne Order* ¶ 9; *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Tele-Commc'ns, Inc., Transferor, to AT&T Corp., Transferee*, Memorandum Opinion and Order, 14 FCC Rcd. 3160 ¶ 14 (1998) ("*AT&T-Tele-Communications Order*") ("To apply our public interest test, then, we must determine whether the merger violates our rules, or would otherwise frustrate our implementation or enforcement of the Communications Act and federal communications policy. That policy is, of course, shaped by Congress and deeply rooted in a preference for competitive processes and outcomes.").

license transfer proceeding must focus on *transaction-specific* harms (and benefits) and is not an open forum for airing pre-existing disputes or industry-wide policy debates, which are better addressed, as appropriate, in separate adjudicatory or industry-wide rulemaking proceedings.[19]

As set forth in Section VI below, the transaction complies fully with the Communications Act and the Commission's rules. Thus, the Commission's task in reviewing this transaction is to weigh the potential public interest benefits against the potential public interest harms. As demonstrated in Sections IV and V, the proposed transaction will generate substantial public interest benefits and no public interest harms.[20] Accordingly, the Applicants respectfully request that the Commission approve the transaction and grant its consent to the transfer of control of TWC's licenses and authorizations to Comcast.

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[19] *See, e.g.*, *Applications of Cellco P'ship d/b/a/ Verizon Wireless & SpectrumCo LLC and Cox TMI, LLC for Consent to Assign AWS-1 Licenses*, Memorandum Opinion and Order and Declaratory Ruling, 27 FCC Rcd. 10698 ¶ 89 (2012) ("We also find that any issues of interoperability in the Lower 700 MHz band raised by commenters are not transaction-related. The interoperability issues in the Lower 700 MHz band long predate these transactions. Further, the Commission has already initiated a rulemaking proceeding earlier this year to address these issues on an industry-wide basis."); *AT&T-Centennial Order* ¶ 141 ("We find that the proposed conditions prohibiting exclusive handset arrangements are not narrowly tailored to prevent a transaction-specific harm, but apply broadly across the industry and are more appropriate for a Commission proceeding where all interested industry parties have an opportunity to file comments. RCA filed a petition asking the Commission to review exclusive handset agreements on an industry-wide basis, and the Commission will be able to develop a comprehensive approach on handset exclusivity based on a full record in that proceeding.") (internal citations omitted); *AT&T-BellSouth Order* ¶ 56 n.154 ("To the extent commenters allege that . . . contracts of the type used by AT&T and BellSouth are anticompetitive in general, this is not a merger-specific harm, but rather is an issue that has been raised, and is better addressed, in the Commission's pending special access rulemaking."); *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee*, Memorandum Opinion and Order, 16 FCC Rcd. 6547 ¶ 6 (2001) ("*AOL-Time Warner Order*") ("It is important to emphasize that the Commission's review focuses on the potential for harms and benefits to the policies and objectives of the Communications Act that flow from the proposed transaction – i.e., harms and benefits that are 'merger-specific.' The Commission recognizes and discourages the temptation and tendency for parties to use the license transfer review proceeding as a forum to address or influence various disputes with one or the other of the applicants that have little if any relationship to the transaction or to the policies and objectives of the Communications Act.").

[20] Applicants recognize that the Commission must conduct its own evaluation and make its own judgment, after hearing from interested parties. Applicants will cooperate in that process and invite a constructive dialogue that addresses any legitimate issues. At the same time, merger proceedings too often are used by various parties as a forum to advance imagined and even contrived grievances, and such tactics must not be permitted to obstruct or delay the Commission's processes.

IV. THE TRANSACTION IS PRO-CONSUMER, PRO-COMPETITIVE, AND WILL GENERATE SUBSTANTIAL PUBLIC INTEREST BENEFITS.

A. Overview

1. Applicants Compete in a Dynamic, Expanding, and Highly Competitive Marketplace.

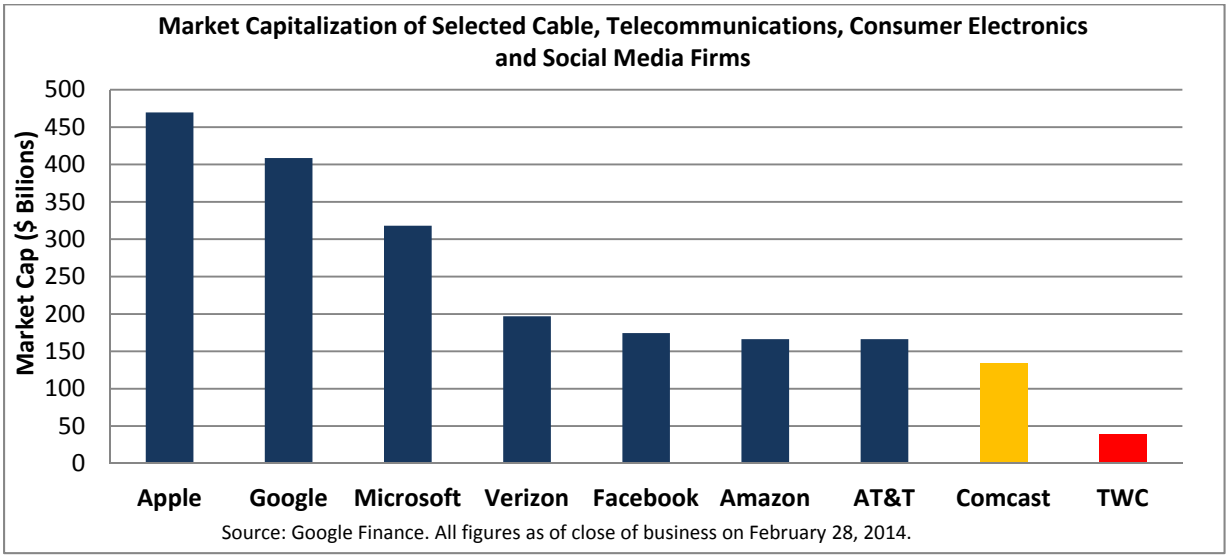
The combination of Comcast and TWC will create a world-class communications, media, and technology company significantly better positioned than either company alone to bring consumers the advanced services they want now and will need in the future and to keep America at the forefront of technology and innovation.

This is no longer the media and communications industry of the 1992 Cable Act or the 1996 Telecommunications Act, or even the industry that the FCC and antitrust agencies analyzed in the Comcast-AT&T Broadband and Adelphia merger proceedings or in the Comcast-NBCUniversal transaction four years ago. Rather, it is a larger, more complex, and multifaceted ecosystem, in which an array of sophisticated companies with national or even global footprints offer stiff competition for all or key components of Comcast's and TWC's businesses. Established satellite providers are evolving, as are the major telco companies, which have the benefit not only of robust wireline footprints, but also of national wireless platforms. As Verizon's CFO recently noted, "I'm the fifth largest cable company now. I also have something that cable doesn't have, which is 100 million eyeballs on wireless devices."[21] Indeed, Verizon has indicated that it intends to add a wireless video product that can bring "24-hour linear

[21] Fran Shammo, EVP & CFO, Verizon, Deutsche Bank Media, Internet and Telecom Conference, Tr. at 15 (Mar. 10, 2014). AT&T's CFO similarly stated: "[T]he advantage for us is that opportunity for over-the-top for the whole 65 million broadband connections we have may be so attractive that it allows us to shift gears or take risks with regard to our traditional subscription model on our 5.4 million customers. We're committed to our U-verse video that's gone well, but we do have flexibility in our space just because of the amount of broadband customers and connections we have that don't have a subscription on it today." John Stephens, CFO, AT&T, Inc., Deutsche Bank Media, Internet & Telecom Conference, Tr. at 11 (Mar. 12, 2014).

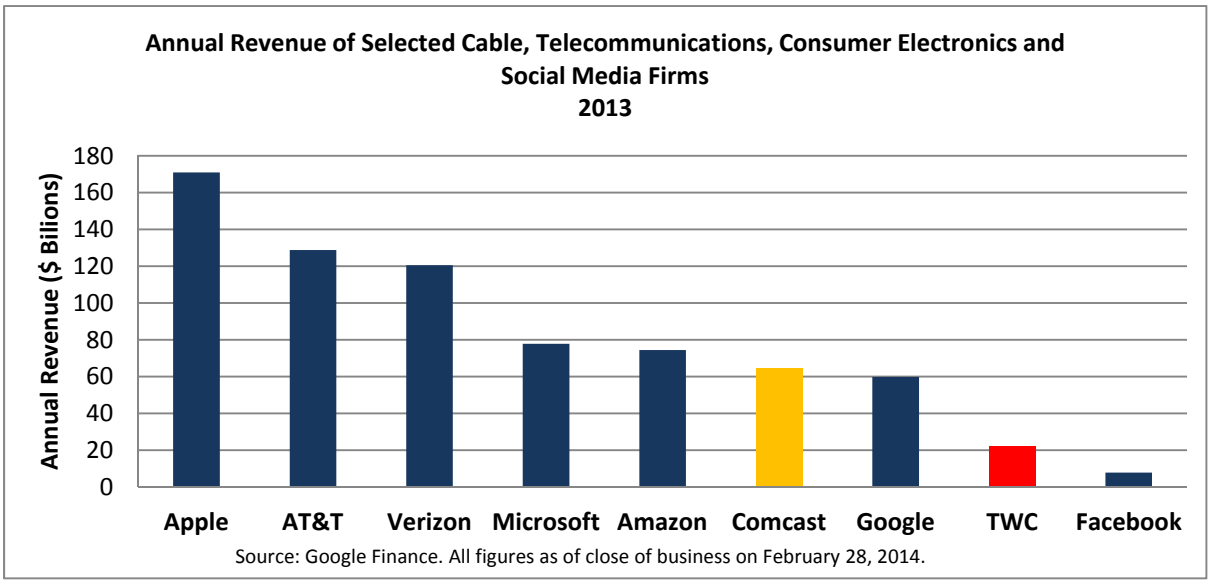
programming" to wireless devices.[22] Today, Google increasingly competes as a network, video, and technology provider; Apple tablets now serve as a viewing platform for IP cable services even while Apple offers an online video service, Apple TV, and explores development of an Apple set-top box; Microsoft just announced that it will feature ads on the Xbox One, creating a new video advertising platform; and Amazon continues to leverage its unequaled sales platform and family of competitive tablets to promote its burgeoning Prime Instant Video business, and just last week announced the rollout of its own advanced video set-top box.[23]

In contrast to all of these companies, both Comcast and TWC have a more limited scale and scope, as reflected in their relative market capitalizations and revenues.



[22] Fran Shammo, EVP & CFO, Verizon, Deutsche Bank Media, Internet and Telecom Conference, Tr. at 15 (Mar. 10, 2014).

[23] *See* Greg Bensinger & Shalini Ramachandran, *Amazon Unveils Video-Streaming Device Fire TV*, Wall St. J., Apr. 2, 2014, http://online.wsj.com/news/articles/SB10001424052702304441304579477283348851844.



To meet these challenges, Comcast has fundamentally transformed itself over the last decade from a regional cable company to a leading communications, media, and technology company. By investing heavily in talent, research and development, and in the infrastructure needed to facilitate creativity and invention, Comcast has created a culture of innovation. Comcast now employs over 1,000 engineers and developers, and vigorously competes for new engineering talent with the likes of Google, Apple, Facebook, Netflix, Microsoft, and Twitter.[24] Its single-minded focus on enhancing its services and pursuing innovation have earned it first place among cable and satellite providers on Fortune Magazine's list of World's Most Admired Companies – up from third place.[25] The transaction will enable the company to continue to meet the challenges ahead in this increasingly dynamic, expanding, and competitive marketplace, and to ensure that customers enjoy all the benefits that Comcast and TWC have offered to date and stand ready to deploy in the future.

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[24] Comcast's research and development efforts involve highly-talented individuals at its technology centers around the country, including in Seattle, Silicon Valley, Denver, Washington, DC, and Philadelphia.

[25] *See* Comcast – Most Admired Companies, Fortune, http://money.cnn.com/magazines/fortune/most-admired/2014/snapshots/5035.html (last visited Apr. 4, 2014).

2. The Key Economic Drivers of the Transaction Will Produce Substantial Benefits.

As the attached economic analyses of Drs. Rosston and Topper and Dr. Israel make clear, a few powerful economic mechanisms will drive the core competitive benefits from the transaction: (a) economies of scale, (b) expanded geographic reach, and (c) sharing of technologies and services.

Scale efficiencies are key. As Drs. Rosston and Topper explain: "Scale can make the difference between investing in a new product or service and not investing, and it can accelerate the introduction of products, services, and network and equipment enhancements."[26] Dr. Israel echoes this analysis and conclusion, noting that "[w]hen 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 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."[27] Dr. Israel also explains why scale is an even more effective driver of efficiencies and benefits in this transaction in light of Comcast's business model:

> 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. 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.[28]

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[26] Declaration of Dr. Gregory L. Rosston and Dr. Michael D. Topper ("Rosston/Topper Decl.") ¶ 10, attached as Exhibit 5.

[27] Declaration of Dr. Mark A. Israel ("Israel Decl.") ¶ 107, attached as Exhibit 6.

[28] *Id.* ¶ 108.

As shown above, communications technologies and services have rapidly advanced, and the cable industry has built out and matured. In the current environment, fixed cost investments in developing new and compelling digital technologies have become more important. As Drs. Rosston and Topper state, "since cable operators now pass the vast majority of homes in their respective franchise areas, they increasingly need to compete for customers with satellite companies, telcos, and other distributors by making investments in the development of new platforms and services and upgrading their networks, all of which have large fixed costs."[29] Moreover, even though some technologies would still be developed gradually even by companies without the benefit of larger scale, "having a larger scale can accelerate investment in development and deployment of new technology [and] . . . may make it profitable to hire more developers and engineers and thereby achieve the same technological improvement in less time."[30]

Second, the expanded geographic reach and additional geographic clustering made possible by a combination of firms will also increase the economic efficiencies by enhancing the ability of the combined entity to serve customers whose needs span the existing geographic footprints of the two firms. "In addition, geographic agglomeration can lead to operating efficiencies and the ability to provide higher quality services to customers in certain geographic areas."[31]

Third, by combining their portfolios of products and services, the companies will be able to provide more products and services at lower cost than they would be able to do on their own. It will be more efficient for Comcast and TWC to provide these services as a combined company

[29] Rosston/Topper Decl. ¶ 45.

[30] *Id.* ¶ 48.

[31] *Id.* ¶ 58.

because the two firms use similar inputs in creating these services. In addition, each company brings proprietary technology and specialized knowledge about providing its unique mix of products and services.[32]

Each of the foregoing economic bases for efficiencies and synergies is strongly present in this transaction. For example, by adding TWC's customers and markets, Comcast will expand its video subscriber base by 8 million customers (after divesting 3 million customers), for a total of approximately 30 million video subscribers in the systems it manages. The incremental scale will promote continued innovation by providing a broader base of customers across which to spread the high fixed costs of research and development.

Moreover, this increased presence will provide equipment manufacturers, app developers, programmers, and other companies with increased incentive to take chances on new technology projects with the combined company, and to do so on reasonable terms. For example, it is far easier to attract developers to build applications for national or global platforms such as Apple TV, Google, Microsoft, and Sony, than to create an app for a limited regional platform – or to convince a manufacturer to embed a tailored feature that has nationwide appeal, than one that has localized, geographically constrained appeal.[33] In short, larger scale and scope will help the combined company attract more collaborators and partners more easily throughout the ecosystem.

The Commission has previously recognized that scale can be an important driver of increased innovation and consumer benefits:

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[32] *See id.* ¶¶ 65-68.

[33] *See id.* ¶ 56 ("In addition, the larger scale enabled by the transaction should make the combined company a more attractive partner for device manufacturers seeking to provide apps to deliver video services on a wider range of third-party devices and technology firms seeking to deliver video to consumers in new, innovative ways. Having a larger potential customer base makes developing these apps and services more feasible for Comcast and more appealing for the partnering company.").

> We also agree with the Applicants that the greater scale and scope of the merged entity is likely to spur new investment. The development and deployment of new technologies often entails a significant up-front, fixed investment. The merged company should have a greater ability to spread those fixed costs across a larger customer base, which should in turn foster incentives for investment by the merged entity, as well as other businesses that seek to sell equipment, technology, and services to the merged entity.[34]

One need look no further than what Comcast has been able to accomplish with the scale it gained from the AT&T Broadband and Adelphia transactions, which contributed significantly to the technological innovation Comcast has already introduced. With greater scale in a far more demanding and capital-intensive marketplace, a combined Comcast-TWC will be able to drive even more innovation and consumer benefits over the next decade – and beyond.

The transaction will also provide the geographic efficiencies that Drs. Rosston, Topper, and Israel describe. Post-transaction, Comcast will reach additional markets in which it previously had limited or no presence (e.g., New York City, Los Angeles, Dallas/Fort Worth). And the transaction will provide Comcast with access to several markets that are clustered near its existing markets (e.g., Georgia, South Carolina, North Carolina, and Virginia). This will allow Comcast to more efficiently deploy and upgrade its broadband facilities, by potentially investing, for example, in new Converged Regional Access Networks ("CRANs") supported by

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[34] *Comcast-AT&T Broadband Order* ¶ 184; *see also GM-News Corp. Order* ¶ 344 ("Based on the evidence presented by Applicants, we believe that the transaction is likely to enable the merged entity to achieve certain economies of scale and scope, particularly in R&D, that absent the transaction the parties individually could not have achieved."); *AT&T-BellSouth Order* ¶ 214 n.594 ("We find . . . that the increase in scale and scope arising from the merger will help the merged entity to better spread the costs of, and internalize the benefits of, its R&D, thus increasing its incentives to invest."). The benefits from scale in the development of broadband Internet access have also been recognized by the Antitrust Division of the Department of Justice. *See Ex Parte* Submission of the U.S. Dep't of Justice, GN Docket No. 09-51, at 29-30 (Jan. 4, 2010) ("These broad goals are best served by promoting competition in broadband markets. In practice, this does not mean striving for broadband markets that look like textbook markets of perfect competition, with many price-taking firms. That market structure is unsuitable for the provision of broadband services, which involve very substantial fixed and sunk costs. Rather, promoting competition is likely to take the form of enabling additional entry and expansion by wireless broadband providers, applying other appropriate policy levers, and spurring competition among broadband providers by improving the information available to consumers about the service offerings in their areas.").

additional regional data centers – an expense that might not have been justified by either company's individual network assets (or customers) in a particular area.

As set forth in the Declaration of Michael J. Angelakis, Comcast Vice Chairman and Chief Financial Officer, these economic drivers will provide the combined company with a greater ability to invest and innovate, not only to serve its existing customers better, but also to respond effectively to new competitive dynamics.[35] In addition, the transaction should result in cost savings and other synergies worth approximately $1.5 billion in increased earnings before interest, taxes, depreciation, and amortization, within three years, and recurring every year thereafter.[36] This is a conservative estimate and does not take into account future revenue-generating opportunities.[37]

These savings will provide the combined company additional wherewithal to invest across its diverse products and services, including in video, business services, and voice. But nowhere else will these savings translate into more renewed investment than in the capital-intensive area of broadband.[38] As economist Ev Ehrlich has aptly observed, "Comcast's offerings will not only improve service to TWC's customers, but it will make the combined company a better competitor and innovator in the competitive cage match in which providers of connectivity, devices, apps, services and content fight for a share of the value the broadband world creates."[39]

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35 Declaration of Michael J. Angelakis ("Angelakis Decl.") ¶¶ 12-13.

36 *Id.* ¶ 6. The transaction is also expected to result in approximately $400 million in capital expense efficiencies. *See id*. 8.

37 *Id.* ¶ 9.

38 *Id.* ¶¶ 21-25 .

39 Ev Ehrlich, *Who Holds the Cards Online*, San Jose Mercury News, Mar. 7, 2014, *available at* http://www.mercurynews.com/opinion/ci_25291788/ev-ehrlich-who-holds-cards-online (calculating that "[t]he (average weighted) rate of profit on sales for 'providers' is 3.7 percent, versus 24.4 percent for 'residers'").

While TWC announced earlier this year a multi-year plan to upgrade its network and enhance its services,[40] Comcast's stronger balance sheet, together with efficiencies generated by the transaction, and Comcast's experience in converting its own plant to all-digital over a compressed time frame, will ensure that the combined company is better positioned to efficiently and expeditiously upgrade the TWC systems, and with minimum disruption to the customer experience. And Comcast is committed to adding substantial incremental investments to what TWC had planned for broadband upgrades and enhancements over the next three years.

As detailed below, the above-described efficiencies and synergies of this transaction are not just theoretical. Rather, Comcast is committed to putting them to work to forge a faster path to all-digital systems, higher broadband speeds, more advanced video and voice services, a more secure network, better system reliability, and other benefits to consumers, businesses, and the public interest generally. The transaction will also extend a variety of other public interest benefits to the TWC markets, including conditions and commitments resulting from the NBCUniversal transaction, as well as Comcast's deep commitment to broadband adoption, diversity, accessibility, and cybersecurity. This array of benefits would not be achieved as expansively or as quickly without the transaction.

B. Consumers Will Benefit Directly from Advances in Broadband, Video Technologies, Digital Voice, and Other Innovations to Residential Services.

1. The Transaction Will Accelerate Broadband Deployment, Increase Broadband Competition and Innovation, and Expand Broadband Adoption.

President Obama has described broadband as "essential to the Nation's global competitiveness in the 21st century, driving job creation, promoting innovation, and expanding

[40] Mike Farrell, *TWC Unveils Three-Year Ops Plan*, Multichannel News, Jan. 30, 2014, *available at* http://www.multichannel.com/cable-operators/twc-unveils-three-year-ops-plan/147999.

markets for American businesses."[41] FCC Chairman Wheeler similarly has said that "[b]roadband networks are essential to our national well-being" – a view embraced by his fellow commissioners.[42] And both the President and Chairman have emphasized the benefits that the protections of the Open Internet rules provide for broadband deployment, adoption, investment, and innovation. Comcast and TWC have invested billions of dollars to build broadband networks that are "essential to our national well-being" and "the Nation's global competitiveness in the 21st century." But the additional investments and innovations that are needed now to deliver the services consumers demand and need will be more rapidly, effectively, and efficiently achieved by the combined company than either company could achieve alone.

a. The Transaction Will Help Fulfill the Goal of Greater Deployment of Even Better Broadband Service for More Americans.

In 1996, Congress instructed the Commission to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability [i.e., broadband] to all Americans."[43] Congress authorized the Commission to "accelerate deployment of such

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41 Exec. Order No. 13616 (June 14, 2012), *available at* http://www.whitehouse.gov/the-press-office/2012/06/14/executive-order-accelerating-broadband-infrastructure-deployment; *see also* Office of the Press Secretary, Statement from the President on the National Broadband Plan (Mar. 16, 2010), *available at* http://www.whitehouse.gov/the-press-office/statement-president-national-broadband-plan ("America today is on the verge of a broadband-driven Internet era that will unleash innovation, create new jobs and industries, provide consumers with new powerful sources of information, enhance American safety and security, and connect communities in ways that strengthen our democracy. . . . Expanding broadband across the nation will build a foundation of sustained economic growth and the widely shared prosperity we all seek.").

42 Prepared Remarks of Tom Wheeler, Chairman, FCC, at the Computer History Museum, Mountain View, CA (Jan. 9, 2014), *available at* http://www.fcc.gov/document/fcc-chairman-tom-wheeler-remarks-computer-history-museum. Commissioner Jessica Rosenworcel observed that "[n]o matter who you are or where you live, prosperity in the twenty-first century will require access to broadband." Statement of Commissioner Jessica Rosenworcel, Subcommittee on Communications and Technology, Oversight of the Federal Communications Commission (July 10, 2012), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-315077A1.pdf. Recognizing the "transformative impact of broadband," Commissioner Ajit Pai has similarly observed that, "[n]ext-generation networks could revolutionize everything from health care to education" and "will also allow our businesses to become more productive, and our country to become more competitive in the global economy." Remarks of FCC Commissioner Ajit Pai, Looking Back and Looking Ahead: The FCC and the Path to the Digital Economy (July 25, 2013), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-322384A1.pdf.

43 47 U.S.C. § 1302(a).

capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market."[44] Thanks to private investment and government policies, a staggering amount of progress toward achieving these goals has occurred, but more remains to be done, and can be done, on an accelerated basis over the next several years.

Approval of this transaction would accelerate the deployment of advanced telecommunications capabilities and promote more infrastructure investment in very concrete ways, as described below. The Commission need not rely here on what some have called a "triple cushion shot" chain of reasoning to link its actions to the Congressional objective.[45] Rather, this transaction provides the Commission an opportunity for a direct strike into the corner pocket – unleashing the combined company's deployment of advanced broadband services and broadband infrastructure investments.

Faster Broadband Speeds. Comcast has invested substantially in advanced broadband technology, system upgrades, and innovative services to meet consumer demand and increased use of broadband. Those investments exceed {{ }} since 1996 alone. For example, Comcast invested over a billion dollars to deploy DOCSIS 3.0 and migrate its systems to all-digital. As a result of its commitment to a full network upgrade, Comcast has deployed some of the industry's fastest speeds[46] – both upstream and downstream. As the graph below shows, Comcast has increased Internet speeds 12 times in the past 12 years, with Comcast's top

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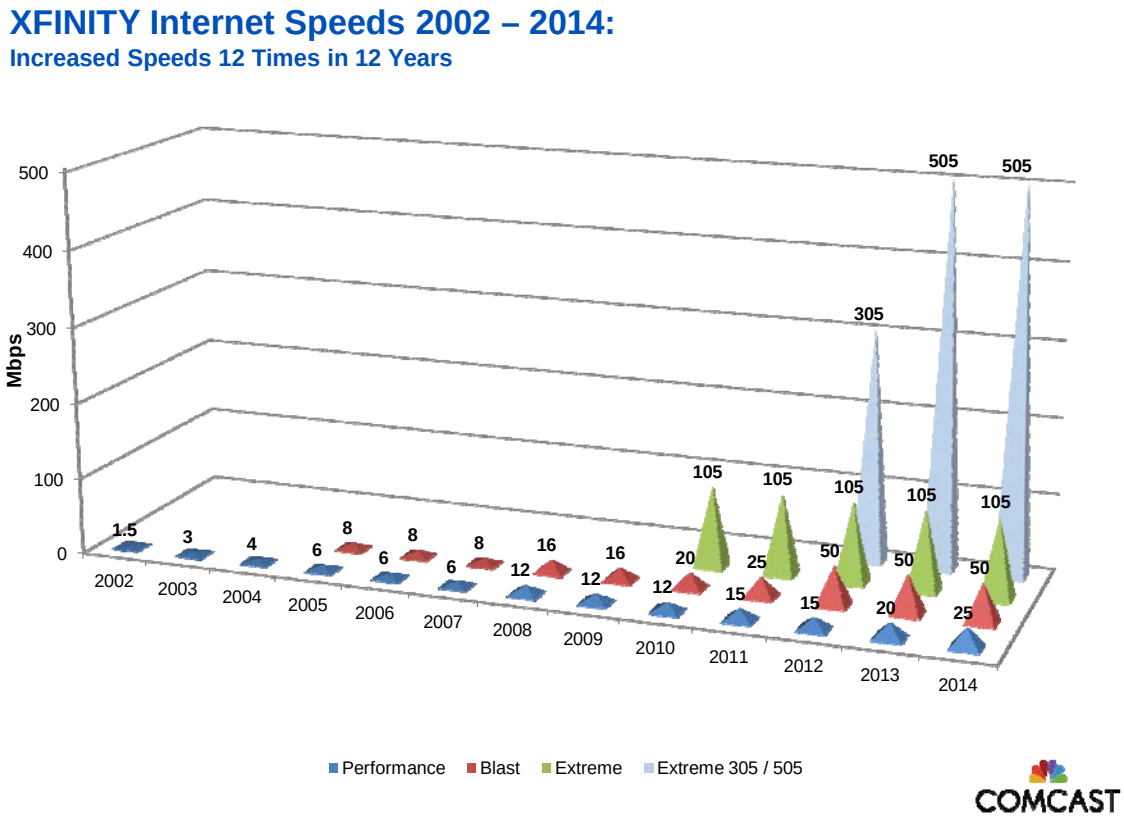
44 *Id.* § 1302(b).

45 *See Verizon v. FCC*, 740 F.3d 623, 659-60 (D.C. Cir. 2014).

46 *See* FCC, Office of Eng'g & Tech. & Consumer & Governmental Affairs Bureau, *A Report on Consumer Wireline Broadband Performance in the U.S.* (Feb. 2013), *available at* http://www.fcc.gov/measuring-broadband-america/2013/February#Chart1; Ookla, *Comcast Broadband Performance*, http://www.speedtest.net/isp/comcast (last visited Mar. 30, 2014).

residential broadband speed increasing more than 30-fold since just five years ago.[47] Due to its past and ongoing investments in network infrastructure, Comcast will have the network capacity to continue to increase speeds over time.



This is no accident: The company is philosophically committed to making the investments necessary to ensure that its network is not only robust for today's needs but capable of evolving to meet tomorrow's consumer and business demand. Over one-third of Comcast customers are on speed tiers with speeds of 50 Mbps/10 Mbps or more. More generally,

[47] As broadband speeds have increased again and again and again, Comcast has consistently reduced the average price Comcast's customers pay on a per-Megabit basis.

Comcast historically has doubled the size of its broadband network capacity every 18 months.[48] In 2013 alone, Comcast added over {{ }} optical nodes, effectively doubling the capacity to customers in neighborhoods served by these nodes.

Comcast's commitment to providing cutting-edge broadband services recently earned it a 2013 Best Practice Award from Frost and Sullivan, which ranked Comcast first among all North American broadband providers in "Technology Innovation."

TWC too has invested significantly in advanced broadband technologies like DOCSIS 3.0, and has upgraded its network to bring faster speeds. Nevertheless, its transition to all-digital technology, which is necessary to free up the additional bandwidth needed to provision higher speeds, is complete in only approximately 17 percent of its footprint.[49] In contrast, Comcast undertook a five-year effort to transition to all-digital, which it completed ahead of schedule in 2012. As a result of this transition, Comcast typically bonds 8 QAM channels together in its systems, and its most popular speed tier is 25 Mbps downstream and 5 Mbps upstream across its footprint. TWC, meanwhile, bonds only 4 QAM channels in nearly half its systems (only a little over a third of the TWC systems bond 8 QAM channels), and its most popular speed tier is 15 Mbps downstream and 1 Mbps upstream in most areas.

Put differently, both companies ensure that customers have access to basic broadband service: [[ ]] percent of Comcast customers and [[ ]] percent of TWC customers enjoy downstream speeds of at least 3 Mbps, based on December 2013 data.[50] The companies diverge

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[48] *See* David L. Cohen, *White House Reports on U.S. Broadband Successes and Challenges*, Comcast Voices (June 17, 2013), http://corporate.comcast.com/comcast-voices/white-house-reports-on-u-s-broadband-success-and-challenges.

[49] *See* Ian Olgeirson, *Charter, Time Warner Cable Lag in All-Digital Push To Convert CapEx into Capacity*, SNL Kagan (Jan. 17, 2014).

[50] Israel Decl. ¶ 168 n.225. These and other speed calculations are based on Applicants' December 2013 Form 477 data.

at the higher downstream speeds, however: [[ ]] percent of Comcast customers have downstream speeds of 25 Mbps or above, while only [[ ]] percent of TWC customers enjoy those speeds.[51] A similar differential in upstream speeds is also notable: As of December 2013, [[ ]] percent of Comcast's broadband customers and only [[ ]] percent of TWC's customers had upstream connection of at least 3 Mbps.[52] Comcast also has deployed significantly more DOCSIS 3.0 modems than TWC – [[ ]] (approximately [[ ]] percent of Comcast customers) compared to TWC's [[ ]] (approximately [[ ]] percent of TWC customers).

Broadband Speed Summary		
Speed Category	**Comcast**	**TWC**
≥ 3 Mbps *downstream*	[[	
≥ 25 Mbps *downstream*		
≥ 3 Mbps *upstream*		
Percentage of Customers with DOCSIS 3.0 Modems		]]

In these and other respects, there is no doubt that customers in the TWC markets will benefit directly from the substantial upgrades that Comcast intends to make (and has the expertise and resources to make) to the TWC broadband service. While TWC recently announced plans to upgrade its broadband speeds to 75 percent of its footprint over three years,

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[51] *Id.* ¶ 168 tbl. 2.

[52] *Id.* ¶ 169 tbl. 3. While TWC's upstream speeds are more than adequate for current uses, the applications of tomorrow may require even more upstream capacity. For example, today Skype recommends 1.5 Mbps upstream speed for HD-quality video calls. *See How Much Bandwidth Does Skype Need*, Skype, https://support.skype.com/en/faq/FA1417/how-much-bandwidth-does-skype-need (last visited Mar. 30, 2014). The upstream speed differential between Comcast and TWC is even more pronounced at the highest end tiers, with Comcast's fastest widely available residential broadband tier offering upstream speeds up to 100 Mbps while TWC's fastest tiers offer 5 Mbps upstream.

Comcast intends to extend its higher speeds and related consumer benefits to the TWC systems on an accelerated and more cost-efficient basis than TWC could accomplish on its own. The goal would be to bring the TWC services up to Comcast levels. Thus, for example, TWC customers currently on the 15 Mbps/1 Mbps tier would see their speeds increase to 25 Mbps/5 Mbps.[53]

And none of this accounts for the next generation of upgrades the combined company would bring to consumers across its footprint in the next few years. Comcast is actively pursuing next-generation technologies that will provide additional significant speed benefits to its broadband customers. It already has plans to invest significantly in capacity and network-related initiatives over the next three years; post-transaction, TWC's systems will be part of those plans (at appropriate incremental levels of investment), and the company as a whole will be able to scale these investments more efficiently.[54]

CCAP. Converged Cable Access Platform ("CCAP") is a new technology that will enable Comcast to bond 16 or more downstream QAM channels and 8 upstream QAM channels to deliver downstream speeds in excess of 250 Mbps and upstream speeds in excess of 50 Mbps over Comcast's existing HFC network plant. Comcast has begun deployment of CCAP technology and will have it deployed to about **[[ ]]** percent of its footprint by the end of this year, **[[ ]]** percent by the end of 2015, and 100 percent in 2016. TWC currently is deploying CCAP technology to several markets (including New York and Los Angeles), and has announced plans to do so to 75 percent of its footprint in the coming years. This transaction will

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53 Angelakis Decl. ¶ 23

54 *Id.* ¶¶ 22-23.

enable Comcast to bring CCAP-enabled Cable Modem Termination Systems ("CMTSes") to all of TWC's customers, and more quickly than TWC could alone.

DOCSIS 3.1. The CCAP technology upgrades, in turn, will facilitate the deployment of the next generation of cable modem technology – DOCSIS 3.1 – which Comcast expects to start deploying soon after the expected finalization of the specifications in 2015 (assuming equipment availability), ahead of any other broadband provider. DOCSIS 3.1 technology will be capable of delivering speeds of several Gigabits per second. This is the most economically scalable broadband architecture in the marketplace, and it will take advantage of Comcast's (and, with this transaction, TWC's) substantial infrastructure investments over the past decade. The broader scale afforded by the larger combined company will mean that ultra-fast broadband capability made possible by DOCSIS 3.1 will be deployed not only more quickly to the acquired TWC systems than it would be otherwise, but also on a more cost-efficient basis across the combined company's footprint.[55]

As it plans for the DOCSIS 3.1 rollout, Comcast continues to innovate. Last year, for example, Comcast demonstrated that its network is capable of delivering 3 Gbps downstream.[56] It also successfully trialed the first *1 Terabit* connection on a portion of its network from Ashburn, VA to Charlotte, NC.[57] This is believed to be the first trial in which live data traffic was carried at this speed on an existing, commercial network.[58] Approval of the transaction will

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55 *Id.* ¶¶ 23-24.

56 *See* Press Release, Comcast Corp., The Future of Broadband Speed and 4K Ultra HD Video (June 11, 2013), http://corporate.comcast.com/news-information/news-feed/comcast-demonstrates-the-future-of-broadband-speed-and-4k-ultra-hd-video.

57 *See* Press Release, Ciena Corp., Comcast Conducts Industry's First Live 1 Terabit Network Trial with Ciena's 6500 Converged Packet Optical Solution (Oct. 22, 2013), http://www.ciena.com/about/newsroom/press-releases/Comcast-Conducts-Industrys-First-Live-1Terabit-Network-Trial-with-Cienas-6500-Converged-Packet-Optical-Solution.html.

58 *Id.*

allow TWC customers to benefit from Comcast's investments and culture of innovation and experimentation.

Backbone Investments. The scale and geographic efficiencies created by the transaction will facilitate Comcast's continued investment in and deployment of its backbone and dark fiber network, and may even accelerate these efforts. Comcast and TWC have independently developed their own national core backbone infrastructure. By combining the companies' core networks, the transaction will lead to additional innovations around capacity and architecture that will allow Comcast to reach more commercial customers on a single network with potentially reduced latency for national enterprise customers.[59] The additional scale facilitated by the merger may accelerate Comcast's contemplated upgrades to its national backbone infrastructure. Moreover, where Comcast has systems in geographic proximity to those of TWC systems, the transaction should make it profitable for Comcast to invest in new CRANs supported by new regional data centers.[60] Such investments would improve the quality of the network to the benefit of residential and business customers, as well as edge providers, through, among other things, improved scalability and resiliency of the network, lower latency through the deployment of more fiber, and increased points of interconnection.[61]

Broadband Promises Made, Promises Kept. In its prior transactions with AT&T Broadband and Adelphia, Comcast explained how the increased scale and synergies made possible by those mergers would lead to substantial consumer benefits in terms of accelerated deployment of advanced digital services and increased network investment, among other things.

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59 Israel Decl. ¶ 187.

60 *Id.* ¶ 188; Rosston/Topper Decl. ¶ 60.

61 Israel Decl. ¶ 189; Rosston/Topper Decl. ¶ 101 n.98.

The Commission recognized those benefits and approved both transactions,[62] and Comcast followed through on each of its investment and deployment commitments, often exceeding them.

For example, after the Commission approved its acquisition of AT&T Broadband at the end of 2002, Comcast invested over $8 billion in capital improvements to upgrade its cable systems and build out a record 53,000 miles of fiber during 2004. Not only did Comcast meet every upgrade target, but it also exceeded its already aggressive construction plans by over 15 percent, thus ensuring that 99 percent of its customers had access to a two-way broadband network.[63] After its acquisition of customers from Adelphia, Comcast invested billions to bring the systems it acquired up to Comcast's standards, and did so in record time. Since then, Comcast has continued to transform its network again and again. This is its *modus operandi* and its reputation, and it will do the same in TWC areas.

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[62] *See, e.g.*, *Comcast-AT&T Broadband Order* ¶ 183 ("We agree with Applicants that the merged entity is likely to accelerate the deployment of broadband services in AT&T service areas. . . . Comcast appears to have a greater 'ability to manage an accelerated program for upgrading its plant while maintaining its operating margins.' We believe that applying this expertise to the AT&T cable systems is likely to have a positive impact on the deployment of broadband to AT&T subscribers that currently do not have access to those services.") (citation omitted). Comcast and TWC each demonstrated this to the Commission in 2006. *See Adelphia Order* ¶ 256 ("[W]e find it more likely than not that the proposed transactions will have a positive impact on the deployment of certain advanced services to Adelphia subscribers."); *id.* ¶ 257 ("We also find it likely that Comcast and Time Warner will improve the quality and availability of advanced services on Adelphia's systems and that Adelphia subscribers will benefit from the transactions in this regard. Comcast's and Time Warner's timely deployment of advanced services on their own systems, especially those systems that Comcast acquired from AT&T Broadband, suggests that they will further deploy advanced video services, facilities-based telephony service, and high-speed Internet service on Adelphia's systems. We also find that the Applicants have provided sufficient information to conclude that the upgrades likely will occur in the near future.").

[63] *See Applications for Consent to the Assignment and/or Transfer of Control of Licenses from Adelphia Commc'ns Corp. (and Subsidiaries, Debtors-In-Possession), Assignors, to Time Warner Cable Inc. (Subsidiaries), Assignees, Adelphia Commc'ns Corp., (and Subsidiaries, Debtors-In-Possession), Assignors and Transferors, to Comcast Corp. (Subsidiaries), Assignees and Transferees*, Applications and Public Interest Statement of Adelphia Commc'ns Corp., Comcast Corp., and Time Warner Inc., MB Docket No. 05-192, at 33 (May 18, 2005). In recognition of these and other achievements, Comcast was named Operator of the Year by Multichannel News in 2003. Mike Farrell, *Bigger. Better*, Multichannel News, Sept. 28, 2003, *available at* http://bit.ly/1l0rqC6 (noting that, with respect to the upgrade of the former AT&T systems, Comcast "outperformed even its own stated expectations").

More recently, Comcast has met or exceeded the broadband-related commitments it made in the NBCUniversal transaction.[64] In particular:

- Comcast surpassed the NBCUniversal Conditions' three-year build-out milestones by (i) expanding its broadband network by approximately 6,300 miles (the Conditions required 4,500 miles over three years),[65] and (ii) extending its broadband plant to over 715,000 additional homes (the Conditions required 400,000). Comcast extended its broadband infrastructure to 33 communities in 2011, exceeding its six-community commitment.

- Comcast has also exceeded the requirement to offer a broadband tier of at least 12 Mbps downstream speed (and 5 Mbps upstream) in all Comcast DOCSIS 3.0 markets. The "Performance" tier in all markets is 25/5 Mbps speed, and a 105 /20 Mbps tier is available in almost the entire footprint.

- Comcast added courtesy broadband and video accounts to over 650 schools, libraries, or other community institutions in underserved areas (the Conditions required 600).[66]

Now in a more dynamic, competitive, and far more resource-intensive marketplace, Comcast is poised – through the proposed acquisition of TWC – to revamp existing networks yet again, and to bring even greater benefits to millions of consumers. Comcast's proven track record means that the Commission can be assured that Comcast will deliver on the broadband-related and other benefits it has described in connection with this transaction.

Better and More Convenient Wi-Fi In and Outside the Home. The transaction will also drive benefits through deployment of advanced Wi-Fi equipment and networks – both within and outside consumers' homes. The quality of broadband service depends not only on the "last mile" infrastructure but also the delivery of the signal through the last few yards, so the availability of high-speed Wi-Fi gateways has a significant impact on the consumer's experience.

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64 Moreover, as described further in Section IV.E.1 below and detailed in Exhibit 9, Comcast has delivered on all of its commitments made in the NBCUniversal transaction.

65 Third Annual Report of Compliance with Transaction Conditions, MB Docket No. 10-56, at 19 (filed Feb. 28, 2014), http://corporate.comcast.com/images/MB-10-56-C-NBCU-Annual-Compliance-Report-2013-2014-02-28.pdf ("*Third Annual Compliance Report*").

66 *Third Annual Compliance Report* at 20.

Comcast has led the industry – not just the cable industry, but all broadband providers – in rolling out in-home Wi-Fi gateways that give customers the nation's fastest wireless speeds and excellent performance over their home wireless network (these gateways are capable of speeds of up to 270 Mbps as compared to speeds of 85 Mbps from the prior generation devices).[67] Comcast has already deployed these gateways to approximately eight million households, where consumers now enjoy faster speeds and better performance over their home wireless network.[68] In contrast, TWC only recently announced plans to begin deploying advanced in-home Wi-Fi gateways. This, in part, reflects the fact that scale is important in purchasing and deploying such equipment – and even more so for investing in the next generation of the technology. So the transaction will not only ensure that TWC customers enjoy access to today's best gateway devices, but will help position the company to offer *all* its customers tomorrow's upgrades.[69]

The substantial broadband infrastructure investment made possible by this transaction will also lead to greater access to many more *public* Wi-Fi hotspots to qualified Xfinity customers – a substantial consumer benefit.[70] A Wi-Fi network becomes much more valuable as its coverage becomes more ubiquitous.[71] Comcast has made Wi-Fi deployment a central focus of its investment and service strategy and is in the process of building one of the largest and most

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67 *See* Rob Slinkard, *Newest Xfinity Wireless Gateway Powers Connected Home with the Fastest WiFi in the Nation*, Comcast Voices (Apr. 26, 2013), http://corporate.comcast.com/comcast-voices/newest-xfinity-wireless-gateway-powers-connected-home-with-fastest-wifi-in-the-nation.

68 *See id.*

69 As Drs. Rosston and Topper explain, one such example of innovation arising from scale economies is whole home, cloud-based management tools, like parental controls and antivirus software, that can be implemented across all devices in the home, rather than on a per-device basis. Because the development of this technology requires significant fixed cost investments, the additional scale afforded by the transaction will allow the combined company to develop these whole home tools more efficiently. *See* Rosston/Topper Decl. ¶ 94.

70 *See* Israel Decl. ¶¶ 191-92.

71 Rosston/Topper Decl. ¶ 96.

robust Wi-Fi networks in the nation to give its broadband customers more flexibility and mobility, including Wi-Fi access at public venues like sports arenas. Customers are making full use of this service. For example, in February alone, there were over [[ ]] unique users with approximately [[ ]] unique devices on the Xfinity WiFi network. Xfinity WiFi hotspots come in three different categories: (1) Outdoor (e.g., hanging off a cable wire); (2) as part of the service provided to small- and medium-sized businesses ("SMBs"); and (3) Neighborhood Hotspots (Wi-Fi residential gateways that offer a supplemental public pathway for other Xfinity users, without affecting the host customer's service and without needing the host's Wi-Fi password). In less than three years, Comcast has deployed approximately 870,000 Xfinity WiFi access points in its footprint (about [[ ]] of which are Neighborhood Hotspots in customers' homes).[72]

Public awareness of the benefits of this early-stage initiative is increasing,[73] and usage is steadily growing. In fact, users connecting to Neighborhood Hotspots utilize them for longer periods of time, with their sessions lasting three times as long as sessions on Outdoor hotspots and with users consuming almost three times as much data.[74]

TWC has built out its own Wi-Fi network in certain of its markets (primarily in New York and Los Angeles), although to a lesser degree than Comcast, having thus far deployed only

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[72] *See* Jeff Baumgartner, *Comcast Marches Towards 1 Million Wi-Fi Hotspots*, Multichannel News, Mar. 5, 2014, *available at* http://www.multichannel.com/distribution/comcast-marches-toward-1-million-wi-fi-hotspots/148678. The fact that Comcast's current Wi-Fi hotspot total has increased to this level from just 43,000 hotspots one year ago underscores the substantial investments and commitment Comcast has made to its Wi-Fi initiatives.

[73] Robert Channick, *Comcast Turning Chicago Homes into Public Wi-Fi Hotspots*, Chi. Trib., Mar. 5, 2014, *available at* http://articles.chicagotribune.com/2014-03-05/business/chi-chicago-public-wifi-comcast-20140304_1_xfinity-wi-fi-moffettnathanson-public-wi-fi-hot-spots/2.

[74] Overall Xfinity WiFi usage is growing. *See* Israel Decl. ¶ 192 ("[T]he average Comcast broadband user (excluding home subscribers in their own home) consumes approximately [[ ]] gigabytes of data per month via Wi-Fi, a figure that has increased by [[ ]] percent over the past year.").

29,000 Wi-Fi access points in its footprint and with no equivalent of Neighborhood Hotspots to date. To be sure, Comcast and TWC are already both part of a CableWiFi initiative that allows Comcast and TWC customers to use certain Wi-Fi hotspots in each of their respective markets. But the transaction will provide a more seamless fabric of Wi-Fi connectivity across the combined company's footprint.[75] The combined company will enjoy the geographic reach, economies of scale, customer density, and return on investment needed to expand Wi-Fi hotspots across the combined footprint, in part because "Comcast will internalize the benefits of a greater number of Wi-Fi access points to legacy Comcast customers who travel in the TWC footprint, and vice versa, because offering a broad Wi-Fi footprint makes Comcast and TWC more attractive to consumers."[76]

This will be an important consumer benefit in its own right, by enhancing consumers' wireline access.[77] Wider availability of Wi-Fi hotspots means that customers can use advanced devices in more places, more conveniently.[78] In addition, ubiquitous and robust Wi-Fi has direct and tangible benefits for public safety, as was demonstrated during the Boston Marathon bombing.[79] The extension and expansion of the combined company's Wi-Fi network will provide a broader platform for the "innovation and decentralized investment that has been a

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[75] Angelakis Decl. ¶ 25.

[76] Israel Decl. ¶ 195.

[77] Non-Xfinity Internet customers can also take advantage of greater Wi-Fi availability outside the home. Comcast offers hourly, daily, and weekly Xfinity WiFi access passes for non-customers. *Xfinity WiFi*, Comcast Corp., http://www.comcast.com/wifi/default.htm?SCRedirect=true (last visited Mar. 29, 2014).

[78] In addition, policymakers have acknowledged that unlicensed spectrum technologies like Wi-Fi are "vital to our economy . . . [,] have transformed the personal electronics industry, and are poised to make substantial contributions to the retail, manufacturing, and other sectors." White House Office of Science and Technology Policy & The National Economic Council, *Four Years of Broadband Growth*, at 20 (June 2013).

[79] After the Boston Marathon attack, cellular networks were overloaded. In response, "Comcast opened its network to anyone – including non-Comcast subscribers – with a Wi-Fi-enabled device to establish communications with loved ones, leading to significantly increased usage of our Xfinity WiFi network in Boston and the surrounding communities." *Hearing on State of Wireless Communications Before the S. Comm. on Commerce, Sci., and Transp.*, 113th Cong. (2013) (Written testimony of Thomas E. Nagel, Senior Vice President, Comcast Corp., at 6).

hallmark of the Wi-Fi boom" across the Internet ecosystem.[80] As Commissioner Rosenworcel has recognized, "Wi-Fi is an essential onramp to the Internet" that "contribut[es] between $16-37 billion to our economy annually."[81]

But it could have an additional collateral benefit as well. A ubiquitous Wi-Fi network built by Comcast could make a "Wi-Fi-first" service, which combines commercial mobile radio service with Wi-Fi, a more viable alternative.[82] One prominent commenter has suggested this could be "a highly disruptive wireless offering," and "a game changer."[83]

b. The Transaction Will Increase Broadband Competition and Enhance the Broadband Ecosystem.

The transaction will also enhance the broadband ecosystem by spurring increased competition among broadband providers and fostering the virtuous cycle of innovation by edge providers.

i. Broadband Providers Will Be Spurred To Compete More Effectively.

The broadband market is competitive today, and this transaction will make it more so. By making the combined company a more effective competitor against traditional and emerging broadband providers, the transaction will spur other providers to act on powerful incentives to

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80 *See* Comments of Open Technology Institute at the New America Foundation, Public Knowledge, GN Docket No. 12-354, at 9 (Dec. 5, 2013); New America Foundation, *Solving the "Spectrum Crunch:" Unlicensed Spectrum on a High-Fiber Diet*, at 4 (Fall 2013), *available at* http://www.twcresearchprogram.com/publications.php.

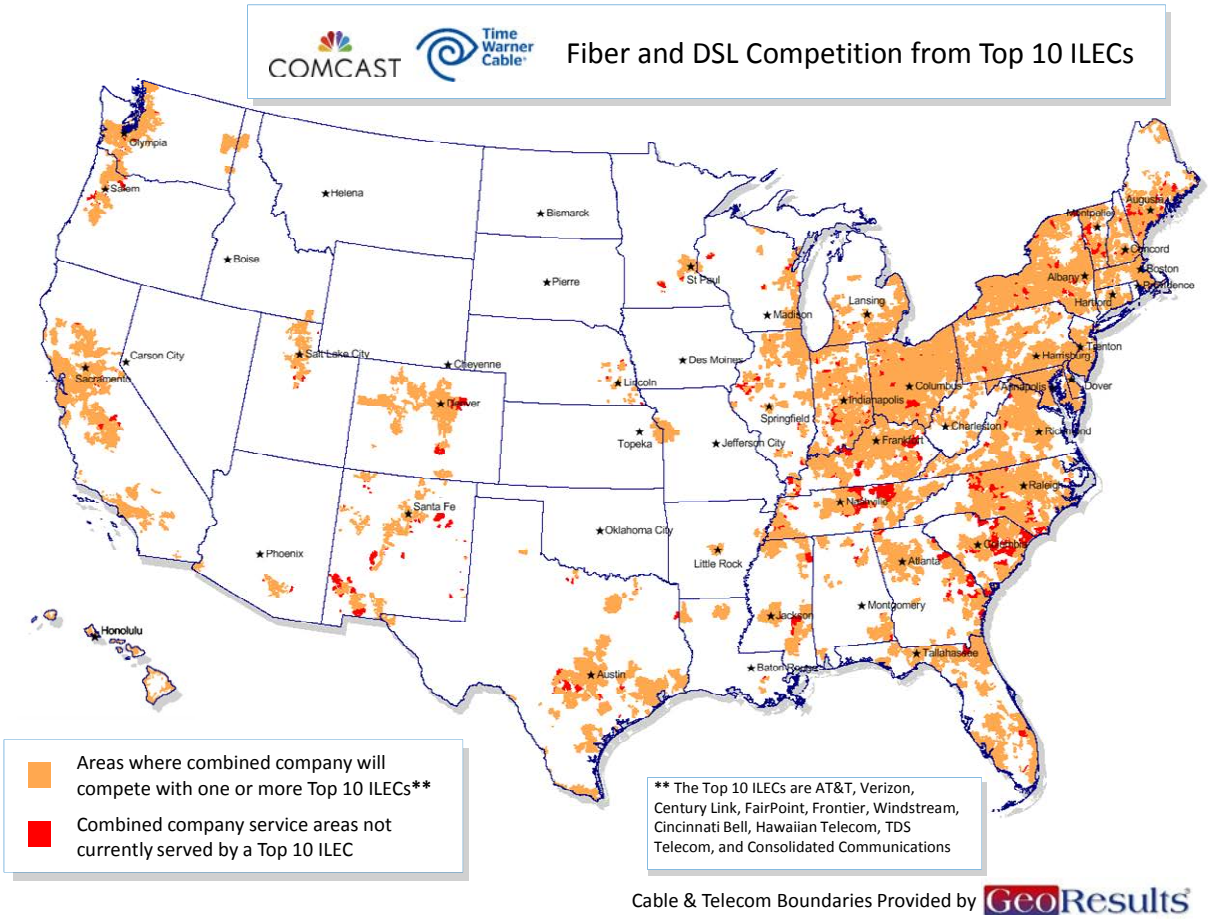
81 Remarks of FCC Commissioner Jessica Rosenworcel, *Wi-Fi in the 5 GHz Fast Lane*, The National Press Club (Mar. 7, 2014), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0307/DOC-325938A1.pdf.

82 *See* Israel Decl. ¶ 197 (describing potential entry by combining Wi-Fi infrastructure with a mobile virtual network operator option); Rosston-Topper Decl. ¶ 99 & n.95 (same).

83 Communications Daily, *Cable Operators Prepare for New Mobile Push with Verizon Wireless*, Sept. 4, 2012) (quoting Craig Moffett); Mike Dano, *Analyst: 'Disruptive Wi-Fi/MVNO' Products Coming from Cable Companies in 2014*, FierceWireless (June 27, 2013), http://www.fiercewireless.com/story/analyst-disruptive-wi-fimvno-products-coming-cable-companies-2014/2013-06-27#ixzz2vgDB5CJu.

meet competition and win consumers. In response to the combined company's investments in broadband facilities, equipment, and speeds, AT&T, Verizon, CenturyLink, other ILECs, cable overbuilders, satellite providers, and wireless broadband providers will have every reason to improve and expand the quality of their broadband offerings.

Even considering only wireline ILEC Internet access service, competition is pervasive, and this does not account for cable overbuilders, satellite broadband, and wireless broadband. As shown in the map below, in 98.4 percent of Comcast and TWC's combined service areas, customers have a choice between Comcast or TWC and one or more top-10 ILEC competitors. More specifically, the orange in the map represents the combined service areas of Comcast and TWC where a top-10 ILEC offers Internet access service. The red shows the very few areas (representing about 1.6 percent of Comcast and TWC's service areas) not currently served by a top-10 ILEC.



Service areas shown represent areas in which the top 10 ILEC providers offer fiber and/or DSL-based Internet access service of any speed. Service area boundaries have been estimated using census block data, wire center locations, and other publicly available information.

Likewise, as Dr. Israel's report illustrates, "the vast majority of consumers have access to multiple fixed broadband competitors."[84] According to recent FCC data, approximately 97 percent of households are located in census tracts where at least two or more fixed broadband providers reported offering at least 3 Mbps downstream and 768 kbps upstream, and approximately 70 percent are located in census tracts where two or more providers reported

[84] Israel Decl. ¶ 43.

offering at least 10 Mbps downstream and at least 1.5 Mbps upstream.[85] Taking into account mobile broadband, consumers have even more options. Approximately 97 percent of households are located in census tracts where three or more fixed or mobile broadband providers reported offering at least 3 Mbps downstream and 768 kbps upstream, and over 80 percent are located in census tracts where two or more providers reported offering at least 10 Mbps downstream and at least 1.5 Mbps upstream.[86]

And the transaction will spur only more competition. The entire history of the broadband industry in the United States is one of competitors constantly leapfrogging each other and spurring competitive responses. Twenty years ago, narrowband, dial-up services like AOL, Compuserve, and Prodigy offered maximum speeds of 56 kbps.[87] Led by Comcast and TWC, among others, the cable industry then took a risk and invested billions in cable modems and network upgrades to achieve higher speeds and facilitate the delivery of innovative services.[88] Telcos responded with ADSL – vastly increasing the speeds available over the telephone plant with a dedicated connection and exploiting the transmission capacity inherent in the high-frequency portion of the loop.[89] Cable responded with faster speeds for cable modem service.[90]

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[85] FCC, *Internet Access Services: Status as of December 31, 2012*, at fig. 5(a) (WCB Dec. 2013), http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db1224/DOC-324884A1.pdf.

[86] *Id.*, fig. 5(b).

[87] *See generally Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Report, 14 FCC Rcd. 2398 ¶ 31 n.31 (1999) ("*First Broadband Progress Report*") (noting that "broadband Internet access was preceded by narrowband (56 kbps) Internet access").

[88] In 1998, the Office of Plans and Policy noted that cable providers had been offering for several years "high-speed data, interactive computer and other Internet-based services." *See generally* Barbara Esbin, Cable Services Bureau, FCC, *Internet Over Cable: Defining the Future In Terms of the Past*, OPP Working Paper No. 30, at 77 (Aug. 1998), *available at* http://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp30.pdf.

[89] *See generally* Jonathan Kraushaar, FCC, Common Carrier Bureau, *Fiber Deployment Update End of Year 1996*, at 21 (1997), *available at* http://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Fiber/fiber96.pdf (noting that ADSL technology "expand[s] the capability of existing copper pairs").

Telcos and new entrants in turn responded with fiber-to-the-home, fiber-to-the-premises ("FTTP"), fiber-to-the-curb, and fiber-to-the-node ("FTTN") deployments,[91] and cable responded again by developing and deploying higher levels of DOCSIS.[92] Wireless broadband providers responded to all of this with their own 3G services that offered something no other competitor could – the ability to take your broadband with you.[93] And they quickly followed their 3G deployments with upgrades to 4G LTE technology that now provides speeds comparable to many of the wired broadband services consumers purchase.[94] More recently, telcos have begun investing in gigabit networks of their own, as well as pair bonding, vectoring, and other initiatives.[95] The marketplace is dynamic and will continue to be; no one knows quite what the future will hold.

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[90] In 1999, the Media Bureau reported to Chairman Kennard that "Cable modem deployment spurs alternative broadband technologies," and that "cable investment inherently spurs investment in DSL and vice versa." FCC, Cable Service Bureau, *Broadband Today: A Staff Report to William E. Kennard, Chairman, Federal Communications Commission, On Industry Monitoring Sessions Convened by the Cable Services Bureau* at 33 (Oct. 13, 1999), *available at* http://www.fcc.gov/Bureaus/Cable/Reports/broadbandtoday.pdf.

[91] *See, e.g.*, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Fifth Report, 23 FCC Rcd. 9615 ¶ 14 (2008) ("*Fifth Broadband Progress Report*").

[92] *See, e.g.*, Mike Robuck, *DOCSIS 3.0 Arrives*, CED, Apr. 30, 2008, *available at* http://www.cedmagazine.com/articles/2008/04/docsis-30-arrives; Press Release, CableLabs, New Generation of DOCSIS Technology (Oct. 30, 2013), http://www.cablelabs.com/news/new-generation-of-docsis-technology (announcing developments in DOCSIS 3.1 specifications).

[93] *See Fifth Broadband Progress Report* ¶ 70 (noting that 3G technologies made consumers "increasingly able to connect through broadband connections to the Internet when they travel").

[94] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Eighth Broadband Progress Report, 27 FCC Rcd. 10342 ¶ 6 (2012) ("*Eighth Broadband Progress Report*") (noting that mobile providers are "deploying new, faster, and more spectrally-efficient mobile network technologies, most notably Long Term Evolution (LTE), which offers advertised download speeds as high as 5–12 Mbps").

[95] *See, e.g.*, Press Release, AT&T, AT&T to Deliver First All Fiber 1 Gigabit Broadband Network to Austin (Oct. 1, 2013), http://www.att.com/gen/press-room?pid=24841&cdvn=news&newsarticleid=37036&mapcode; *see also* Israel Decl. ¶¶ 55-60 .

The only certainty is that this leapfrogging is continuing and intensifying in the broadband industry. As the FCC recently affirmed,[96] investment in broadband shows no signs of slowing:

- Broadband capital expenditures have remained high and have even increased in recent years despite earlier upgrades (and despite challenging economic conditions), rising from $64 billion in 2009 to $68 billion in 2012.[97]

- The Progressive Policy Institute identified the telecommunications/cable industry as one of its "Investment Heroes of 2013," including Comcast, AT&T, and Verizon, which were in the top 10 list of these major investors for the third year in a row.[98]

- Annual investment in U.S. wireless networks grew more than 40 percent between 2009 and 2012, from $21 billion to $30 billion, and exceeded investment by the major oil and gas or auto companies.[99]

- According to a PCIA study, private investment in wireless infrastructure over the next 5 years will generate $1.2 trillion in economic growth and create 1.2 million jobs.[100]

This reality plays itself out in the day-to-day competitive marketplace in which Comcast and TWC operate. As shown above, the combined company will face nearly ubiquitous wireline broadband competition from ILECs offering DSL-based and/or fiber services, including FTTN services that rely on DSL to reach consumers' homes. According to Dr. Israel, "[t]he competitive pressure imposed by wired telco providers is likely to increase over time as telcos

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96 FCC, Fact Sheet: Internet Growth and Investment (Feb. 19, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0219/DOC-325653A1.pdf.

97 *See* Patrick Brogan, *Updated Capital Spending Data Show Rising Broadband Investment in Nation's Information Infrastructure*, USTelecom, at 1-2 (Nov. 4, 2013), http://www.ustelecom.org/sites/default/files/documents/103113-capex-research-brief-v2.pdf.

98 *See* Diana G. Carew & Michael Mandel, Progressive Policy Institute, *U.S. Investment Heroes of 2013: The Companies Betting on America's Future*, at 2-4 (Sept. 2013), http://www.progressivepolicy.org/wp-content/uploads/2013/09/2013.09-Carew-Mandel_US-Investment-Heroes-of-2013.pdf.

99 White House Office of Science and Technology Policy & The National Economic Council, *Four Years of Broadband Growth*, at 2 (June 2013).

100 Press Release, PCIA – The Wireless Infrastructure Association, Wireless Infrastructure Investment Will Generate $1.2 Trillion in Economic Activity and Create 1.2 Million Jobs (Sept. 19, 2013), http://www.pcia.com/pcia-press-releases/601-wireless-infrastructure-investment-will-generate-1-2-trillion-in-economic-activity-and-create-1-2-million-jobs.

invest in new technologies, including FTTN and others, that improve the quality of their broadband services."[101] Indeed, contrary to the picture some have painted of DSL as a defunct service, between December 2008 and December 2012, DSL-based broadband connections grew at an average annual rate of 25 percent, *exceeding cable broadband's pace of growth at an average annual rate of 18 percent*.[102] Dr. Israel notes that "DSL is broadly deployed and the Commission considers it an effective broadband option."[103] As Comcast has documented elsewhere, numerous DSL providers offer speeds equal to or exceeding the Commission's broadband speed threshold at affordable prices.[104] For example, Verizon offers DSL service at speeds up to 15 Mbps, Frontier offers speeds up to 25 Mbps, and CenturyLink offers speeds up to 40 Mbps. And AT&T, CenturyLink, Frontier, and others are investing significantly in upgrading DSL service through new technologies such as VDSL2 and pair bonding.[105]

Consider AT&T in particular – the largest telecommunications company in the United States (by revenues). AT&T's DSL and FTTN U-verse services significantly overlap both Comcast and TWC – with U-verse currently provisioned at speeds up to 45 Mbps downstream – and AT&T has affirmed its plans to continue to enhance and expand these services. AT&T is currently in the middle of a three-year *$6 billion* investment plan (called Project Velocity IP

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101 Israel Decl. ¶ 57.

102 *Id.* ¶ 60. December 2012 is the most recent date for which FCC-reported data are available.

103 *Id.*

104 *See* Letter from Lynn R. Charytan, Senior Vice President, Legal Regulatory Affairs and Senior Deputy General Counsel, Comcast Corp., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 10-56, Ex. A, Pt. 3 (Feb. 21, 2014) (detailing competitive standalone HSD options in Comcast's top 30 markets).

105 *See id.* CenturyLink represents the type of multifaceted investment ongoing today by wireline providers: "We have utilized and continued to utilize a balanced capital investment approach, including gigabit fiber, VDSL2, and pair bonding deployments to efficiently enable higher speeds, enhanced services to consumers and businesses in our markets." CenturyLink, Inc., Q4 2013 Earnings Call, Tr. at 5 (Feb. 12, 2014); *see also* Robert W. Starr, Treasurer & SVP, Frontier Commc'ns Corp., Goldman Sachs TMT Leveraged Finance Conference, Tr. at 5 (Mar. 19, 2014) (noting Frontier is "compet[ing] against [cable] today on the residential and on the small business side and we're taking share away from them on the residential side . . . . [W]e think that our opportunities against the cable companies continue to be a very good one.").

("Project VIP")) to expand its U-verse service to 33 million homes.[106] Dr. Israel notes that, "outside the U-verse footprint, AT&T will also upgrade ATM-DSLAMs to IP-DSLAMS for another 24 million households, allowing it to achieve speeds as high as 45 Mbps."[107] And AT&T plans to offer speeds as high as 100 Mbps in the future.[108] As AT&T's CEO Randall Stephenson has aptly described it, cable and telcos will be in an incessant "dogfight" for the next 20 years when it comes to broadband competition:

> Somebody invests in technology and it gives them an advantage and they ride it for a while. Somebody comes along and they invest. . . . [Y]ou're just going to continue to see bandwidth improvements over time. And it's going to be a dogfight between us and cable for the next 20 years. I don't see that changing. They will invest and they'll step up. We'll invest. It'll go back and forth. But I feel really good that we're doing very well against cable today.[109]

Indeed, in response to the proposed transaction, Stephenson stressed:

> [W]e came into 2014 really focused on completing our VIP build that's our network infrastructure commitment that we began a little over a year ago, and [the transaction] puts a heightened sense of urgency on the VIP build. And we're really going to be very, very aggressive pushing hard on completing all these various areas of VIP.[110]

For its part, Verizon appears just as eager to compete with its DSL and FiOS FTTP service, which presents substantial and well-known competition to both Comcast and TWC in significant parts of their service areas. As its spokesman said in response to the announcement of the Comcast/TWC transaction: "Verizon has a history of introducing the next big thing for

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106 *See* Press Release, AT&T, AT&T to Invest $14 Billion to Significantly Expand Wireless and Wireline Broadband Networks, Support Future IP Data Growth and New Services (Nov. 7, 2012), http://www.att.com/gen/press-room?pid=23506&cdvn=news&newsarticleid=35661&mapcode=.

107 Israel Decl. ¶ 59.

108 *See id.* ¶ 57.

109 Randall Stephenson, Chairman & CEO, AT&T, Inc., Goldman Sachs 22nd Annual Communacopia Conference, Tr. at 14 (Sept. 24, 2013).

110 Randall Stephenson, Chairman & CEO, AT&T, Inc., Morgan Stanley Technology, Media & Telecom Conference, Tr. at 3 (Mar. 6, 2014).

our video and Internet customers. This [transaction] just changes the name of the competitor in some of our markets."[111] Verizon's CFO more recently affirmed:

> I compete against Time Warner Cable today. I compete against Comcast today. I'll just compete against Comcast tomorrow and the way I view it is FiOS is a superior product to any of them because it is the only one that is fiber to the prem[ises] . . . .[112]

While telco DSL and fiber services make up the greatest share of fixed broadband competition that Comcast and TWC face, they are by no means the only source of such competition. The combined company also will continue to face significant competitive pressures from cable overbuilders such as WOW! and RCN; new and ambitious entrants such as Google Fiber; municipal providers; fixed wireless broadband services like Verizon's HomeFusion; and satellite broadband offered by Hughes and WildBlue[113] – with Dish aggressively developing plans for spectrum-based broadband offerings.[114]

Google, for example, is now deploying a competitive fiber network in several areas of the country. Notably, on February 19, 2014, Google announced plans to quadruple the number of cities in which it provides service, potentially launching in *nine* new metro areas. Comcast or TWC has a significant presence in eight of those nine areas (which are already served by

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111 Gautham Nagesh, *Comcast Sees Time Warner Cable Deal Boosting Broadband Competition*, Wall St. J., Feb. 21, 2014, *available at* http://online.wsj.com/news/articles/SB10001424052702304275304579397541413329198 (quoting Verizon spokesman Ed McFadden).

112 Fran Shammo, EVP & CFO, Verizon, Deutsche Bank Media, Internet and Telecom Conference, Tr. at 13 (Mar. 10, 2014).

113 The Commission recently recognized that "[s]atellite broadband has made significant improvements in service quality." FCC, Office of Engineering and Technology and Consumer and Governmental Affairs Bureau, 2013 Measuring Broadband America Report – February 2013, at 7, *available at* http://www.fcc.gov/measuring-broadband-america/2013/February#Background.

114 *See, e.g.*, Press Release, Sprint Corp., Sprint and Dish to Trial Fixed Broadband Service (Dec. 17, 2013), http://newsroom.sprint.com/news-releases/sprint-and-dish-to-trial-fixed-wireless-broadband-service.htm.

multiple other MVPDs and broadband providers).[115] This means that millions of the combined company's customers may soon have an additional choice of high-speed broadband service providers. And Google possesses the financial and technical wherewithal to expand Google Fiber to many additional markets.

Competitive forces are also present – increasingly and robustly so – via mobile wireless services offered by well-capitalized and aggressive national wireless providers. For a large number of Americans, wireless is already a meaningful broadband alternative.[116] And it will become an increasingly effective competitor in the near future, as even bandwidth-intensive edge providers have recognized.[117] This reality was reinforced when President Obama enlisted two wireless providers to help him achieve his goal of bringing ultra-high-speed Internet connectivity to schools and making it available to students at school, in the community, and at home.[118] As

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[115] *See* John Brodkin, *Google Fiber Chooses Nine Metro Areas for Possible Expansion*, Ars Technica, Feb. 19, 2014, http://arstechnica.com/business/2014/02/google-fiber-chooses-nine-metro-areas-for-possible-expansion/.

[116] *See* Israel Decl. ¶¶ 61-62; Kathryn Zickuhr & Aaron Smith, Pew Research Center, *Home Broadband 2013* (Aug. 26, 2013), http://www.pewinternet.org/2013/08/26/home-broadband-2013/ ("*Pew Home Broadband 2013*").

[117] As the head of MLB Advanced Media recently articulated in an interview, in response to the claim that "[t]he cable guys pretty much control broadband":

> How? We have telcos now. You've got wireless. The only pay TV business that's growing now is U-[v]erse and FiOS. They're owned by AT&T and Verizon. I don't think you should discount what AT&T and Verizon can do without a landline – what they can do through the air. Who knows what this is going to look like?
>
> * * *
>
> A lot of our people watch our live games in 4G. . . . If you watch [a] live baseball game in 4G it looks pretty good and 5G is just round the corner.

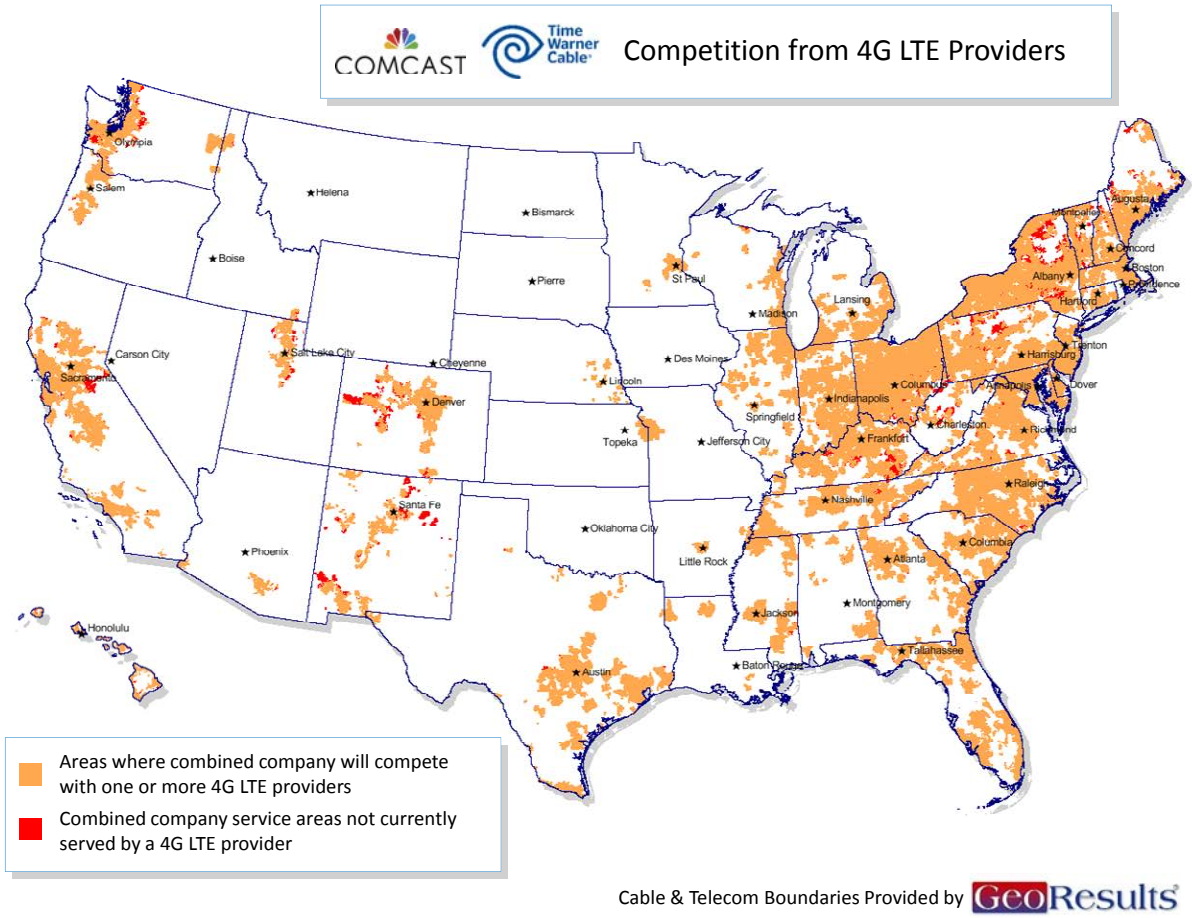
David Lieberman, *Q&A: MLB Advanced Media CEO Bob Bowman on WWE Network, Sony's Virtual Pay TV Plans, and What's Next for Streaming Video*, Deadline (Jan. 21, 2014), http://www.deadline.com/2014/01/qa-mlb-advanced-media-ceo-bob-bowman-on-wwe-network-sonys-virtual-pay-tv-plans-and-whats-next-for-streaming-video/ (quoting Bob Bowman).

[118] Karl Bode, *AT&T, Sprint Promise Free Wireless Service for Schools*, DSL Reports (Feb. 4, 2014), http://www.dslreports.com/shownews/ATT-Sprint-Promise-Free-Wireless-Service-for-Schools-127609. President Obama previously noted "innovative new mobile technologies hold the promise for a virtuous cycle – millions of consumers gain faster access to more services at less cost, spurring innovation, and then a new round of consumers benefit from new services. The wireless revolution has already begun with millions of American taking advantage of wireless access to the Internet. . . . In order to achieve mobile wireless broadband's full potential, we need an

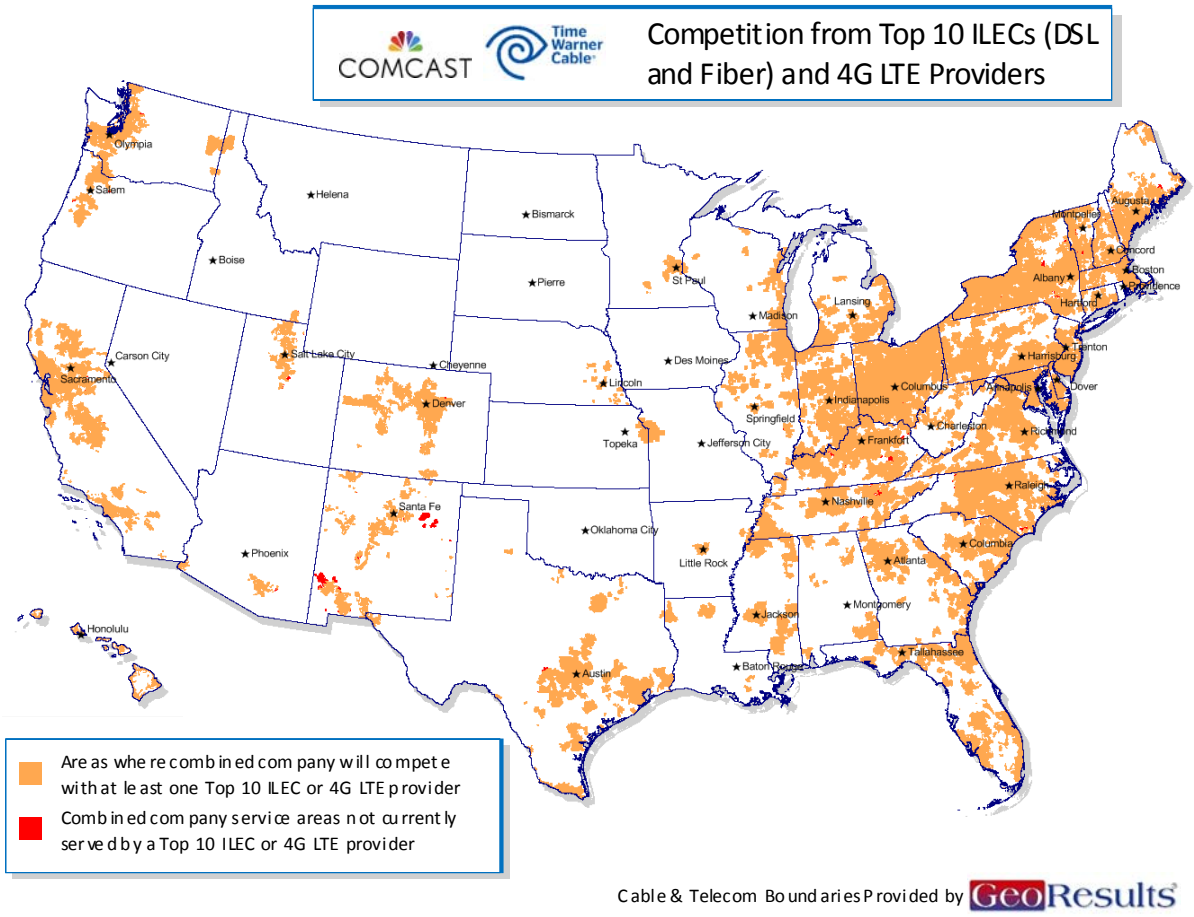
wireless data speeds and capacity continue to increase substantially with the deployment of advanced services – including LTE, LTE-Advanced, and beyond – wireless broadband service will increasingly become even more competitive with wireline broadband.[119] These developments will further enhance competition and benefit Comcast and TWC customers, virtually all of whom currently have access to 4G LTE service as illustrated in the map below. More specifically, the orange in the map represents those parts of the combined service areas of Comcast and TWC where a 4G LTE provider offers Internet access service. The red shows the very few areas not currently served by a 4G LTE provider.

environment where innovation thrives . . . ." Office of the Press Secretary, Presidential Memorandum, *Unleashing the Wireless Broadband Revolution* (June 28, 2010), http://www.whitehouse.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution.

[119] Wireless providers see wireline providers as competition: Randall Stephenson, Chairman and CEO of AT&T, also observed that this transaction would spur AT&T's advanced wireless build-out as well as its wired build-out. Randall Stephenson, Chairman & CEO, AT&T, Inc., Morgan Stanley Technology, Media & Telecom Conference, Tr. at 3 (Mar. 6, 2014).



Moreover, when one considers the near-ubiquitous availability of top-10 ILECs plus 4G LTE providers, there are virtually no areas of the combined Comcast and TWC services areas where customers do not have one of these options, as shown in the map below.

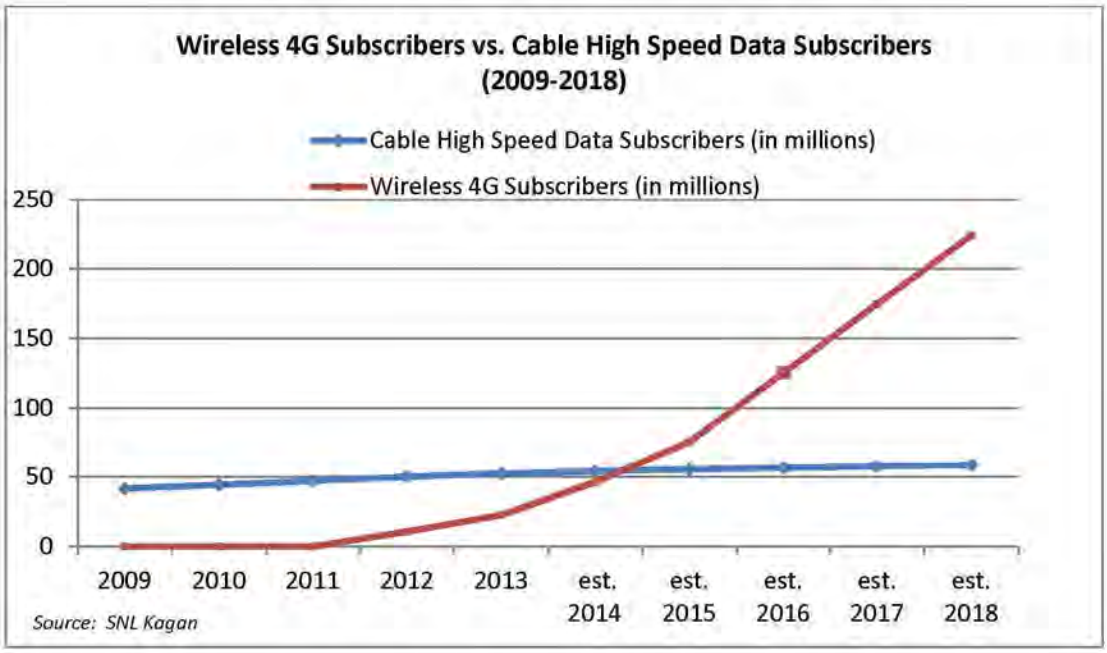


The Commission has repeatedly recognized the possibility of significant wireless broadband substitution – including in the *Adelphia Order* in 2006, the National Broadband Plan in 2010, and the most recent 706 Notice of Inquiry – as has the Department of Justice.[120] Similarly, as Dr. Israel notes, the cable industry is well aware of the possibility of material

120 *Adelphia Order* ¶ 218 (noting the possibility that cable broadband would lose market share from emerging wireless broadband competitors); FCC, *Connecting America: The National Broadband Plan*, at 40-43 (2010), *available at* http://www.broadband.gov/download-plan/ (discussing possibility of wireless substitution); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, Ninth Broadband Progress Report Notice of Inquiry, 27 FCC Rcd. 10523 ¶ 42 (2012) ("[H]igh speed, high quality, and mobility are all important characteristics of broadband service today. To what extent do Americans currently subscribe to mobile broadband as their only form of Internet access, and what demographic or geographic differences correlate with this choice?"); *Ex Parte* Submission of the U.S. Dep't of Justice, GN Docket No. 09-51, at 10 (Jan. 4, 2010) ("It is premature to predict whether the wireless broadband firms will be able to discipline the behavior of the established wireline providers, but early developments are mildly encouraging. Notably, the fact that some customers are willing to abandon the established wireline providers for a wireless carrier suggests that the two offerings may become part of a broader marketplace.").

mobile broadband substitution for cable broadband within the next few years.[121] With the increasing ubiquity of 4G wireless connectivity and the multitude of enabled devices including smartphones and tablets, these predictions are increasingly becoming a reality.

Looking out to 2018, SNL Kagan predicts that there will be *224 million* unique 4G subscriptions active in the United States, up from 22.6 million at year end 2013.[122]



That is – literally – an order of magnitude of growth over a five-year period, easily lapping the growth of cable broadband service during the past five years (and predicted growth over the next five).[123] And 4G wireless broadband technology can deliver speeds that rival those of wireline cable and telco companies – well over 50 Mbps downstream (and averaging in the double

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121 *See* Israel Decl. ¶¶ 64-65 ([redacted]).

122 SNL Kagan, Covered Pops & Subscribers by Technology in U.S. Wireless (July 2013). Similarly, Cisco predicts the number of 4G connections in North America in 2018 to be 372 million. *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2013–2018*, at 36 (2014).

123 *See* SNL Kagan, U.S. Multichannel Industry Benchmarks (detailing the number of cable high speed data subscribers since 2009 and estimating the number of subscribers through 2018).

digits).[124] Recognizing this enormous marketplace opportunity, Masayoshi Son, Chairman and CEO of SoftBank, recently observed that "[u]p to now wireless was much slower speed, more expensive, so it was not [an] alternative . . . But I'd like to give [it] a shot. . . . The cable that you are getting on the average in the States is 50 megabits per second . . . . I'd like to provide up to 200 megabits per second[.]"[125] As Dr. Israel explains, while pricing for wireless broadband plans with substantial data usage is higher than for other broadband services today, these prices have and will continue to come down over time as wireless providers achieve more capacity.[126] And, for many lighter broadband users, this is not an issue even today.

ii. Edge Providers Will Benefit from the Transaction.

As the Commission has recognized, speed and reliability in the last-mile and in the backbone spur innovation at the edges and all along the network, which in turn feeds consumer demand for broadband *and* edge services. Broadband investment in last mile and backbone transit facilities, for example, has provided the speeds and reduced transport costs to make possible what Chairman Wheeler described as "tremendous growth in the online video market," nearly tripling revenues for online video between 2010 and 2012.[127] Indeed, in emphasizing the "impact of Internet video," Commissioner Pai has noted that the "largest Internet video provider,

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[124] Sascha Segan, *Fastest Mobile Networks 2013*, PCMag, June 17, 2013, http://www.pcmag.com/article2/0,2817,2420334,00.asp; Israel Decl. ¶ 61.

[125] Masayoshi Son, CEO, SoftBank Corp., *The Promise of Mobile Internet in Driving American Innovation, the Economy and Education*, Tr. at 12 (Mar. 11, 2014), http://cdn.softbank.jp/en/corp/set/data/irinfo/presentations/vod/2013/pdf/press_20140311_02.pdf.

[126] *See* Israel Decl. ¶ 67 ("As more spectrum is released (*e.g.*, through the upcoming 600 MHz incentive auction) and average spectral efficiency continues to improve through broader LTE deployment and advances in LTE technology, the associated increase in the capacity of wireless networks will put downward pressure on the cost and price per gigabyte on wireless networks. . . . Due to these declines in cost and thus price per gigabyte, wireless broadband will likely become an increasingly economical alternative in coming years, including higher usage levels as wireless networks progress.") (citations omitted).

[127] FCC, Fact Sheet: Internet Growth and Investment (Feb. 19, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0219/DOC-325653A1.pdf.

Netflix, has more American subscribers than any single cable or satellite operator."[128] In the *Open Internet Order*, the Commission aptly described this dynamic as "a virtuous circle of innovation in which new uses of the network – including new content, applications, services, and devices – lead to increased end-user demand for broadband, which drives network improvements, which in turn lead to further innovative network uses."[129] The Commission went on to explain that

> [n]ovel, improved, or lower-cost offerings introduced by content, application, service, and device providers spur end-user demand and encourage broadband providers to expand their networks and invest in new broadband technologies. Streaming video and e-commerce applications, for instance, have led to major network improvements such as fiber to the premises, VDSL, and DOCSIS 3.0. These network improvements generate new opportunities for edge providers, spurring them to innovate further.[130]

By virtue of the better broadband speeds and services and increased competition this transaction will produce across the combined company's footprint, the Internet ecosystem as a whole will benefit. Edge providers in particular will have better tools with which to build novel services. The last-mile improvements that the combined company will bring to customers more quickly than either company could do on its own will provide an even stronger foundation for new, powerful apps and services that are dependent upon higher-quality, reliable broadband networks and Wi-Fi gateways to reach and serve customers, such as distance learning, home security, remote healthcare, and others. As Dr. Israel explains, the improvements in broadband services that will arise from this transaction will trigger this virtuous cycle of innovation.[131] As

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128 Keynote Address of FCC Commissioner Ajit Pai, FICCI Frames 2014 (Mar. 12, 2014), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0312/DOC-326016A1.pdf.

129 *Preserving the Open Internet; Broadband Industry Practices*, Report and Order, 25 FCC Rcd. 17905 ¶ 14 (2010) ("*Open Internet Order*").

130 *Id.*

131 *See* Israel Decl. ¶¶ 163-66.

the combined company's broadband service improves more rapidly than it otherwise would (especially in the acquired systems), it will enable increased quality of edge services, which will increase the value of broadband for end-users. Because edge providers are available to all ISPs, edge provider improvements that are spurred by the combined company's broadband investments will in turn create additional incentives for other ISPs to improve their own broadband services.[132]

Investors in tomorrow's edge providers are well aware of the virtuous cycle of innovation brought about by successive leaps forward in broadband speed and quality. Indeed, venture capitalists and others consistently argued for the last decade that certain services and apps required better wired or wireless broadband before they could be rolled out and achieve viability.[133] As economist Ev Ehrlich recently observed, edge providers capture the benefits of broadband innovation most directly, because "companies that use the broadband Internet make six to eight times the margins of the companies who provide it."[134]

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132 *See id.*

133 *See* Peter Grant & Bruce Orwall, *After Internet's Big Bust, Broadband Shift Went On*, Wall St. J., Jan. 8, 2003, *available at* http://online.wsj.com/news/articles/SB1041979000108173904 (John Doerr of Kleiner Perkins: "There's no question that broadband enables paid-for-content business models."); *id.* (Disney Internet Group President Steve Wadsworth on why ABC and ESPN websites were launching new video technology in 2003 as compared to the Dot Com bust: "We're getting to critical mass in broadband."); *id.* (Peter Murphy, Disney's strategic planning chief: "We are 20% into the development of broadband . . . ."); Josephine Moulds, *Boom, boom. Dotcoms Are Back in the Frame*, Telegraph, Apr. 20, 2007, *available at* http://www.telegraph.co.uk/finance/markets/2807599/Boom-boom.-Dotcoms-are-back-in-the-frame.html (Judy Gibbons of Accel: "A whole industry infrastructure has been established, there are millions of users, people are consuming online versus offline. It's become very mainstream and therefore there are still lots of opportunities to both transform existing business and create new applications that are only possible with broadband internet, like social networking."); *see also Hearing on The American Clean Energy Security Act of 2009: Before the Subcomm. on Energy & Env't of the H. Comm. on Energy & Commerce*, 111th Cong. 1245 (Apr. 24, 2009) (remarks of Rep. Edward Markey) ("[I]n 1996, we went from a point where not one home in America had broadband in 1996, not one home, to a point where, 10 years later, there is a whole new vocabulary, YouTube, Google, eBay, Amazon, Hulu, thousands of companies, millions of new jobs. They didn't exist because the market wasn't there before 1996 for broadband. It was all narrowband.").

134 Ev Ehrlich, *Who Holds the Cards Online*, San Jose Mercury News, Mar. 8, 2014, *available at* http://www.mercurynews.com/opinion/ci_25291788/ev-ehrlich-who-holds-cards-online (calculating that "[t]he (average weighted) rate of profit on sales for 'providers' is 3.7 percent, versus 24.4 percent for 'residers'").

Finally, as further discussed in Section V.D.1 below, Comcast is now the only company legally bound by the no-blocking and non-discrimination rules in the FCC's *Open Internet Order*, in the wake of the recent D.C. Circuit decision vacating these rules. It is subject as well to unique restrictions on offering, and how it offers, "specialized services." This transaction, therefore, will spread the reach of those protections to all of TWC's customers. The Open Internet rules were designed to establish baseline requirements to foster the virtuous cycle of innovation involving edge providers and to provide consumers and edge providers some important certainty.[135]

Accordingly, not only will this aspect of the transaction address and prevent any of the putative competitive harms certain parties may allege regarding edge providers, but application of these Open Internet rules to all of TWC's cable systems is an immediate and substantial public interest benefit that approval of this transaction will extend to millions of additional consumers.

c. The Transaction Will Accelerate and Expand Broadband Adoption Efforts to Reduce the Digital Divide.

One of the most pressing challenges facing this country is the significant broadband adoption gap – known as the "digital divide." The combination of Comcast and TWC will demonstrably advance the goal of bringing all Americans into the digital communications age by extending Comcast's landmark *Internet Essentials* broadband adoption program to TWC's territories, and building upon TWC's efforts. By extending and expanding the Comcast program

[135] As Chairman Wheeler recently put it, the D.C. Circuit affirmed that "the Commission was justified in concluding that an open Internet would further the interest of broadband deployment by enabling the virtuous cycle of innovation that unites the long-term interests of end-users, broadband networks[,] and edge-providers." Prepared Tom Wheeler, Chairman, FCC, Remarks at Silicon Flatirons (Feb. 10, 2014), *available at* http://www.fcc.gov/document/fcc-chairman-tom-wheeler-remarks-silicon-flatirons (discussing *Verizon v. FCC*). Likewise, Commissioner Clyburn has stated that "clear rules of [the] road are absolutely necessary for consumers . . . broadband providers, and other users of the Internet to be able to further innovate and invest." Press Release, FCC, Statement By FCC Commissioner Mignon L. Clyburn on Chairman Genachowski's Circulation of a Draft Order Preserving the Open Internet (Dec. 1, 2010), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-303145A1.pdf.

to reach new geographic areas – including large metropolitan and rural areas – the transaction will help to connect many thousands of additional low-income households to today's high-speed Internet.

The Pew Research Center's latest survey report, *The Web at 25 in the U.S.*, notes the "explosive adoption" of Internet connectivity since 1995 and "its wide-ranging impacts on everything from[ ] the way people get, share, and create news; the way they take care of their health; the way they perform their jobs; the way they learn; the nature of their political activity; their interactions with government; the style and scope of their communications with friends and family; and the way they organize in communities."[136]

According to the most recent statistics, a large majority of Americans have already embraced broadband – in their homes, at their work places, and on the go with mobile devices. Eighty-seven percent of American adults now use the Internet.[137] About 70 percent of American homes are connected to wired broadband,[138] and the residential penetration figure rises to 80 percent when wireless-only broadband homes are added.[139]

But as policymakers well understand, these statistics mean that tens of millions of Americans still remain out of the broadband loop. Beyond the sheer number of disconnected Americans in the aggregate, there are disheartening demographic distinctions. Pew reports that

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136 Susannah Fox & Lee Rainie, Pew Research Center, *The Web at 25 in the U.S*. 4 (Feb. 27, 2014), *available at* http://www.pewinternet.org/files/2014/02/PIP_25th-anniversary-of-the-Web_022714_pdf.pdf.

137 *Id.* at 5 (noting near-saturation usage among those living in households earning $75,000 or more (99%), young adults ages 18-29 (97%), and those with college degrees (97%)).

138 *See Pew Home Broadband 2013*, at 2 (Aug. 26, 2013); NTIA & Econ. & Statistics Admin, *Exploring the Digital Nation: America's Emerging Online Experience* at 2 (June 7, 2013), *available at* http://www.ntia.doc.gov/files/ntia/publications/exploring_the_digital_nation_-_americas_emerging_online_experience.pdf ("Approximately 69 percent of households used broadband Internet at home (72 percent if including dial-up) in July 2011.").

139 *Pew Home Broadband 2013* at 4.

there are "notable differences in adoption" among those lacking higher-level educational degrees, those in lower income households, and those aged 65 and older.[140] Minority adoption rates also lag behind.[141] Chairman Wheeler explained correctly that "having a significant percentage of Americans bypassed by the Internet revolution is unacceptable. We can't maximize economic growth and job creation when 20 percent of our population is cut off from the digital economy at home."[142] Commissioner Michael O'Rielly has similarly emphasized the importance of "ensur[ing] that *all* Americans have access to modern communications networks."[143] Noting that "certain populations find themselves disproportionately on the wrong side of the digital divide," Commissioner Mignon Clyburn likewise recognized that "broadband adoption is critical for full participation in today's economy."[144]

The primary barriers to broadband adoption have been fairly well identified as the following: (1) perceived lack of relevance of the Internet to the lives of individual consumers, (2) the lack of "digital literacy" in consumers' understanding of how to use the technology, and (3) the price of getting online (primarily the cost of a computer, but also the cost of service as

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140 *The Web at 25*, at 17. For example, one of the most important determinants of low adoption is education – only 37 percent of Americans without a high school diploma have adopted broadband, while college graduates have an 89 percent adoption rate. *Pew Home Broadband 2013* at 3.

141 According to Pew, 74 percent of white Americans have broadband at home, but only 64 percent of African Americans and 53 percent of Hispanic Americans have the same high-speed connections. *Pew Home Broadband 2013*, at 5.

142 Tom Wheeler, Chairman, FCC, Remarks at The Ohio State University, Columbus, Ohio 5 (Dec. 2, 2013), *available at* http://www.fcc.gov/document/remarks-fcc-chairman-tom-wheeler-ohio-state-university.

143 *Technology Transitions*, Order, GN Docket No. 13-5 (Jan. 30, 2014) (statement of Comm'r Michael O'Rielly), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0130/DOC-325345A6.pdf (emphasis added).

144 Mignon Clyburn, Acting Chairwoman, FCC, Prepared Remarks at National Urban League Washington/Urban Solutions Forum: Advancing a Broadband Agenda for Urban America (Oct. 30, 2013), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-323813A1.pdf.

well).[145] As explained below, Comcast has engaged in an unprecedented effort to address and overcome each of these barriers in an attempt to eliminate the digital divide.

Comcast Internet Essentials. Comcast shares the Commission's concern about broadband adoption, and has dedicated significant resources to closing the gap. The company's *Internet Essentials* initiative is the nation's largest and most comprehensive broadband adoption program and is specifically designed to systematically address the primary barriers to broadband adoption noted above. Working in concert with community partners and local elected officials, Comcast developed the *Internet Essentials* program to help low-income Americans begin to overcome these obstacles. The program is in keeping with Comcast's corporate ethos, which emphasizes community service generally – and an achievement record that ranks the company among the nation's best in commitment to community service.[146]

Internet Essentials provides low-income households with low-cost broadband service for $9.95 a month and the option to purchase an Internet-ready computer for under $150. In addition, *Internet Essentials* offers multiple options for accessing free digital literacy training in print, online, and in-person – whether the individual is officially enrolled in the program or not.[147] In the first two and a half years of its existence, *Internet Essentials* has connected more

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[145] Kathryn Zickuhr, Pew Research Center, *Who's Not Online and Why* 2 (Sept. 25, 2013), http://www.pewinternet.org/~/media//Files/Reports/2013/PIP_Offline%20adults_092513_PDF.pdf.

[146] *See* Charisse Lillie, *Comcast Ranks Among Top 50 Companies for Commitment to Community*, Comcast Voices (Dec. 5, 2013), http://corporate.comcast.com/comcast-voices/comcast-ranks-among-top-50-companies-for-commitment-to-community; *see also 2013 Results*, The Civic 50, http://www.civic50.org/2013_results.php (last visited Mar. 30, 2014); *Comcast-NBCUniversal Order*, 25 FCC Rcd. at 4514-15 (Statement of Comm'r Mignon Clyburn) (explaining that "[t]he adoption initiative . . . is well-crafted, ambitious, and has enormous potential. By offering the possibility of affordable, high-speed broadband to families . . . not only will school-age children be able to explore the infinite worlds of the web, but the others in their homes will be able to join them.").

[147] *See Getting Started with the Internet*, Internet Essentials, http://learning.internetessentials.com/tour/getting-started-internet (last visited Apr. 5, 2014).

than 1.2 million low-income Americans, or 300,000 families, to the power of the Internet at home.

Helping people successfully cross the digital divide requires ongoing outreach. To increase awareness of the *Internet Essentials* program, Comcast has made significant and sustained efforts within local communities. To date, those outreach efforts have included:

- Distributing over 33 million brochures to school districts and community partners for free (available in 14 different languages);
- Broadcasting more than 3.6 million public service announcements with a combined value of nearly $48 million;
- Forging more than 8,000 partnerships with community-based organizations, government agencies, and elected officials at all levels of government;

Other significant milestones for Comcast's *Internet Essentials* program include:

- Offering *Internet Essentials* in more than 30,000 schools and 4,000 school districts in 39 states and the District of Columbia to spread the word and help bring more families online;
- Investing more than $165 million in cash and in-kind support to help fund digital literacy initiatives nationally, reaching more than 1.6 million people through Comcast's non-profit partners;
- Fielding 1.9 million phone calls to the *Internet Essentials* call center;
- Welcoming 1.8 million visitors to the *Internet Essentials* websites, which supply information in both English and Spanish, and the Online Learning Center; and
- Providing more than 23,000 subsidized computers at less than $150 each.

Moreover, the program has not remained static. As Comcast has gained insights from hands-on experience, it has consistently implemented significant enhancements to *Internet Essentials* along the way. As a result, the program has grown well beyond the company's original commitment in the NBCUniversal transaction. These enhancements include:

- Eligibility criteria expanded – Comcast has expanded *Internet Essentials*' eligibility criteria twice, first by extending it to families with children eligible to receive reduced-

price school lunches, and then by offering it to parochial, private, cyberschool, and homeschooled students. As a result, nearly 2.6 million families nationwide are now eligible for *Internet Essentials*, an increase of nearly 25 percent.

- Broadband speeds increased – Comcast increased the program's broadband speeds twice in less than two years (from 1.5 to 3 to 5 Mbps downstream), and *Internet Essentials* families now receive downstream speeds of 5 Mbps and upstream speeds of 1 Mbps.

- Instant approval process expanded – Comcast expanded an instant approval process for families whose students attend schools with 70 percent or more National School Lunch Program participation (previously, the threshold was 80 percent), which further increased participation rates.

- Online support enhanced – Comcast created an online application tool on the program's English- and Spanish-language websites to make it easier and faster for a family to apply.

- Partner support facilitated – Comcast's community partners now may help connect low-income families to the Internet by purchasing "Opportunity Cards" that help defray the cost of the service. And Comcast launched a program that gives third parties such as schools and community-based organizations the ability to purchase *Internet Essentials* service and equipment in bulk for families in their community.

- Registration process expanded – Comcast conducts on-site registration during *Internet Essentials* events all over the country.

- Residential moves supported – Comcast updated the "transfer of service" process for *Internet Essentials* customers, which now allows customers to move their accounts to a new home address in a Comcast service area without having to re-apply for the program.

Thanks to all of these efforts, *Internet Essentials* is doing exactly what it was designed to do, as confirmed by two surveys compiled from families who participate in the program.[148] Approximately 98 percent of participants in one survey reported that their school-age children used the *Internet Essentials* service for school assignments.[149] Of that group, 94 percent felt

[148] *See* Letter from Lynn R. Charytan, Senior Vice President, Legal Regulatory Affairs and Senior Deputy General Counsel, Comcast Corp., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 10-56, at 10-11 (July 31, 2013) ("IE Report") (detailing results of survey of *Internet Essentials* customers); *see also* Dr. John B. Horrigan, *The Essentials of Connectivity* (Mar. 2014) ("Horrigan Report"), *available at* http://corporate.comcast.com/news-information/news-feed/internet-essentials-2014.

[149] IE Report at 11; *see also* Horrigan Report at 2.

Internet Essentials had a positive impact on their child's grades.[150] About 85 percent of respondents said they use *Internet Essentials* to go online on a daily basis.[151] Overall, 90 percent of *Internet Essentials* customers in the survey were "highly satisfied" with the service, and 98 percent said that they would recommend *Internet Essentials* to others. A subsequent survey of *Internet Essentials* participants found that 90 percent said access to the Internet helps them with schoolwork; 59 percent said that the Internet helps them get access to government services; and 57 percent indicated that the Internet helped them with job searches.[152]

An Expanded Commitment. The combined company will be well-positioned to work proactively with the Commission and community leaders to address broadband adoption challenges and opportunities. Comcast's voluntary broadband adoption commitment under the *Comcast-NBCUniversal Order* expires this summer, when the program completes three full years. But Comcast's commitment to this cause is stronger than ever. That is why Comcast recently announced that it will *extend the Internet Essentials program indefinitely* and enhance it

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150 IE Report at 11.

151 *Id.*

152 Horrigan Report at 3. TWC also has undertaken broadband adoption efforts in recent years. TWC has offered an entry-level "Everyday Low Price" broadband access service for $14.95 per month, as well as its Starter Internet program targeted to schools in several areas in its footprint, which provided eligible families a basic tier of broadband service for two years for $10/month. *See* Mike Robuck, *Time Warner Boots Up Wi-Fi Hotspots, Starter Internet Tier in K.C.*, CED, Nov. 30, 2012, http://www.cedmagazine.com/news/2012/11/time-warner-boots-up-wi-fi-hotspots-starter-internet-tier-in-kc. Ultimately, 486 schools participated in the pilot program, which ended in January 2013. TWC also has been actively engaged in a variety of other broadband adoption and digital literacy efforts through partnerships with non-profit and community organizations. For example, in partnership with the nation's largest civil rights organizations, TWC carried $1 million worth of PSAs in key markets throughout 2012-2013 to promote the importance of broadband. The PSAs were carried in English, Spanish, and five other languages and were prepared by the Broadband Opportunity Coalition ("BBOC"). BBOC's members include: National Urban League, NAACP, National Council of La Raza, Asian American Justice Center, and League of United Latin American Citizens ("LULAC"). TWC has also partnered with the McCain Internet Empowerment Project, a non-profit initiative that brings broadband service and computer accessibility to senior citizens. TWC has provided computers and broadband connectivity at the Wilson Senior Center and eight other assisted-living facilities to expand digital literacy among senior citizens. And TWC has partnered with LULAC to support technology centers at LULAC locations that provide training, technology, and support services in the Latino communities served by the company.

in various ways, for example, by optimizing the online application tool.[153] Thanks to this upgrade, families will be able to complete the online *Internet Essentials* application form via a mobile device and upload their eligibility documentation through the website.

In addition, Comcast recently made grants totaling more than $1 million to 15 communities to create "*Internet Essentials* Learning Zones."[154] The grants are part of Comcast's multifaceted Gold Medal Recognition Program for communities that have done the most to help close the digital divide. Learning Zones will bring together the non-profit community, schools, and Comcast to create a continuum of connectivity during the day, after school, and at home. As part of these efforts, Comcast offered an opportunity for all eligible families in these communities, as well as five additional "most improved" communities to receive free *Internet Essentials* service for six months if they registered with the program during a three-week period in March.[155] More than 4,300 low-income families registered and are now connected to the Internet at home.

When this transaction is approved, this program will apply to all of the communities in the TWC markets, thereby extending *Internet Essentials*' reach into 19 out of 20 of the nation's largest cities. Thus, a tangible and far-reaching benefit of this transaction, effective upon approval by the Commission, will be to make the power of broadband and the Internet available to many more low-income families and help reduce the unacceptable digital divide in the country.

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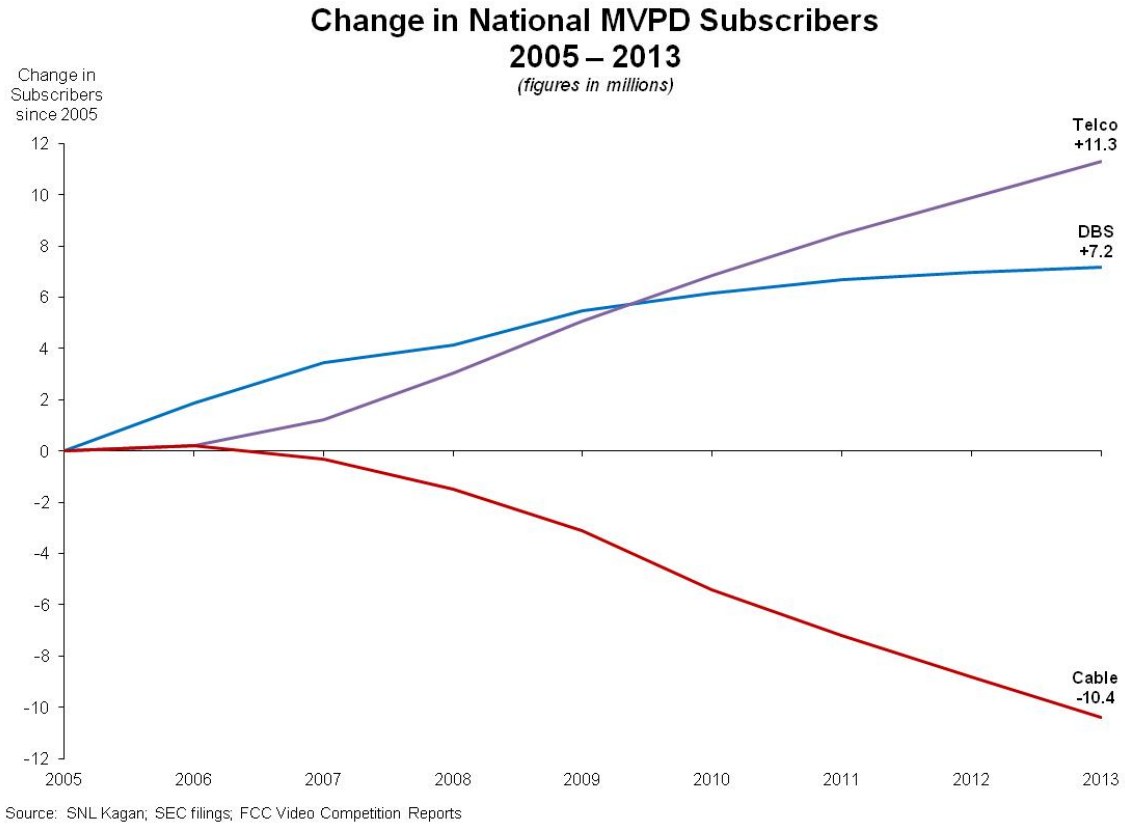
153 Press Release, Comcast Corp., Comcast Extends National Broadband Adoption Program for Low-Income Families (Mar. 4, 2014), http://corporate.comcast.com/news-information/news-feed/internet-essentials-2014.

154 *See id.*

155 Initially, the application and approval deadline for complimentary Internet service was March 15, 2014. Comcast subsequently extended the deadline.

2. The Transaction Will Accelerate Deployment of Advanced Video Technologies and the Development of New and Innovative Video Products and Services.

As video competition from satellite, telcos, overbuilders, and others continues to mount, established cable operators across the nation continue to lose subscribers, even as overall video subscriber figures grow. Since 2009 alone, after the court rejected the Commission's 30 percent cable horizontal ownership rules for the second time, the two DBS providers have added another 1.7 million subscribers, the telco MVPDs have added another 6.2 million subscribers, while cable companies have *lost* 7.3 million subscribers. And if one goes back to 2005, as illustrated in the chart below, the increase in MVPD competition is even more pronounced:



To meet this challenge head-on, Comcast has invested billions to reinvigorate its services

(e.g., by transitioning to all-digital and deploying the X1 platform) and develop new ones.[156] Indeed, Comcast's recent "positive video subscriber result [for the 4th quarter of 2013], coming as it does when their video penetration of homes passed has fallen . . . is testament not to a 'good quarter' but instead to a good half-decade of hard work and heavy lifting."[157] This hard work and commitment is what led to the company's notable improvements, reflected in the Fortune and J.D Power surveys noted above. Adding scale to Comcast's leadership and expertise will produce a significant and galvanizing combination.

A larger video customer base will facilitate accelerated investment by reducing the effective costs of innovation on a per-subscriber basis.[158] According to Dr. Israel, "[b]y 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."[159] As a result, the combined company will be better able to take risks on developing and deploying advanced video products and services to all of its customers, a fact that the FCC has consistently recognized is a public interest benefit in similar transactions.[160]

As in the broadband space, investing in the video platform and video technologies in turn

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156 Angelakis Decl. ¶ 26. Comcast appears to recently have stanched the flow (and even gained customers in the most recent quarter), in large part because of its innovative products. *See* MoffettNathanson Research, Comcast Q4 2013: Boardwalk Empire (Jan. 28, 2014); *see also* Trefis Team, *The Latest Deal with Sony Pictures Highlights Comcast's Efforts to Push Its On-Demand and Streaming Services*, Forbes, Mar. 12, 2014, *available at* http://www.forbes.com/sites/greatspeculations/2014/03/12/the-latest-deal-with-sony-pictures-highlights-comcasts-efforts-to-push-its-on-demand-and-streaming-services/ ("Comcast has been successful in trimming the subscriber losses in the past few quarters and we believe this was partly due to its advanced offerings that include X1/X2 platform and Xfinity Streampix services.").

157 MoffettNathanson Research, *supra* note 156 at 2.

158 *See* Rosston/Topper Decl. ¶¶ 85-94.

159 Israel Decl. ¶ 107.

160 *See, e.g.*, *Adelphia Order* ¶ 256 ("As the Commission has stated many times, the deployment of advanced video services is a recognized public interest benefit. . . . Thus, we find it more likely than not that the proposed transactions will have a positive impact on the deployment of certain advanced services to Adelphia subscribers.").

helps produce new opportunities for content providers – by offering, for example, more VOD capacity, more HD opportunities, and TV Everywhere. Programmers have also acknowledged the benefits that will flow from this transaction:

- Viacom: "[W]e welcome what Comcast had said about investing in its platform, providing more revenue opportunities with its consumers, investing in the capital infrastructure, both in its own systems and the newly acquired systems because . . . what is of highest importance to us is to make sure our content is available ubiquitously on different platforms in a measured way."[161]

- Discovery: "Comcast is a great company. If they're successful in bringing this deal to the finish line, I'm sure that they'll do a great job in offering a lot of different products to consumers to consume content, including TV Everywhere where they're a leader, and that will be advantageous for us."[162]

- Fox: "[T]here may be some positive [consequences from cable consolidation] . . . . [N]ew digital platforms in over-the-top players may grow even more quickly with a consolidated distribution industry."[163]

- CBS: Comcast put together "a pretty terrific deal" and CBS looks forward to working with the Comcast-owned TWC. "[T]he good news about Comcast is they own a network that competes with us and they own a number of cable channels, so they are a company that believes in content and they believe in paying fairly for content."[164]

- Starz: "[W]hatever the final configuration [of the transaction] is, there is a real opportunity for those companies with Starz products."[165]

Comcast is committed to deepening the value proposition for programmers and residential video customers – not only retaining them, but growing their numbers and giving them new and better ways of experiencing video.

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161 Philippe Dauman, CEO, Viacom, Inc., Deutsche Bank Media, Internet & Telecom Conference, Tr. at 10 (Mar. 10, 2014).

162 David Zaslav, President & CEO, Discovery Communications, Inc., Q4 2013 Earnings Call, Tr. at 11 (Feb. 13, 2014).

163 Charles Carey, President, 21st Century Fox, Inc., Q2 2014 Earnings Call, Tr. at 6 (Feb. 6, 2014).

164 Hilary Lewis, *Les Moonves Thinks Comcast-Owned Time Warner Cable Will 'Pay Appropriately' For CBS Content*, Hollywood Reporter, Feb. 13, 2014, *available at* http://www.hollywoodreporter.com/news/les-moonves-thinks-comcast-owned-680139.

165 Christopher P. Albrecht, CEO, Starz, Q4 2013 Earnings Call, Tr. at 10 (Feb. 21, 2014).

a. The Benefits of All-Digital.

Accelerated Transition to All-Digital. Improving cable services for customers – adding channels, improving picture quality (i.e., HD), adding advanced features, offering faster broadband speeds – depends on securing additional bandwidth.[166] To free up the bandwidth needed for more channels and quality, TWC made an early commitment to adopting switched digital video ("SDV") technology to manage content and video quality. But in order to offer super high-speed Internet service going forward, TWC is now focused on migrating to all-digital systems. TWC's all-digital migration currently is complete in about 17 percent of its footprint,[167] and TWC expects to have completed only 75 percent of its footprint by the end of 2016.[168]

Comcast took a different approach to freeing up bandwidth, reclaiming the bandwidth devoted to analog delivery of programming through an arduous, resource-intensive, community-by-community, scheduled five-year effort to convert to all-digital – an effort that the company referred to as "Cavalry" to underscore the intention to charge forward. That approach paid off, and Comcast completed its transition to an all-digital platform in 2012, ahead of schedule. The transaction will allow TWC's transition to all-digital to be accelerated, and Comcast's substantial

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166 *See, e.g., Comcast Finishes Digital Conversion and Launches 139 New TV Networks in Santa Cruz and Surrounding Areas*, PR Newswire, July 9, 2013, *available at* http://www.prnewswire.com/news-releases/comcast-finishes-digital-conversion-and-launches-139-new-tv-networks-in-santa-cruz-and-surrounding-areas-214767921.html (describing Comcast's completion of the digital conversion and launch of 69 new HD networks, 17 SD channels and 53 multicultural networks in Santa Cruz County after Comcast successfully converted to all-digital delivery system). Digital also needs to happen for faster broadband speeds, even with the deployment of DOCSIS 3.0.

167 *See* Ian Olgeirson, *Charter, Time Warner Cable Lag in All-Digital Push To Convert CapEx into Capacity*, SNL Kagan (Jan. 17, 2014) ("Time Warner Cable is estimated to have made the [digital] transition in 17% of its homes passed, including markets in its New York cluster. The MSO has indicated plans to expand in 2014, but it has not laid out a roadmap for the markets and is not expected to complete the effort this year."). TWC has migrated to all-digital only in New York City; Augusta, Maine; parts of Kentucky and Indiana; and portions of Los Angeles.

168 *See* Time Warner Cable, *TWC Operational and Financial Plan*, at 11 (Jan. 30, 2014).

experience with Cavalry, in which it worked through the various complexities of an all-digital transition in a disciplined and sustained effort, will enable the transition in the TWC cable systems to take place more efficiently and with less customer disruption.[169] As a result of these upgrades, customers on TWC systems will enjoy more innovative video products and faster broadband speeds on an accelerated basis.

Enhanced Network Reliability and Customer Service Innovations. The benefits of a more robust and reliable all-digital network also extend to network reliability and performance. Comcast has invested billions of dollars to transform the end-to-end customer experience through an advanced broadband network and state-of-the-art care and tech diagnostic tools for technicians and customer account executives. Comcast uses these tools to detect and remediate quality issues, often before issues arise to a level noticeable by consumers, and also is adapting these in-network tools to give customers more information about system status. One example of this is the recently released "Xfinity My Account" app, which provides systems status updates as well as troubleshooting tips and advice.[170] In addition, Comcast's all-digital network improves overall video quality and consumer satisfaction: Comcast is able to ingest digital signals from programmers and move the signals through the network to set-top boxes without conversion to and from analog and the accompanying loss of fidelity.

Beyond this, an all-digital network facilitates customer service innovations, efficiencies, and lower costs by allowing Comcast to remotely activate and deactivate services.[171] This has

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169 *See* Angelakis Decl. ¶ 27.

170 *See* Roger Yu & Mike Snider, *Comcast Seeks Uber-like Customer Service*, USA Today, Mar. 19, 2014, *available at* http://www.usatoday.com/story/money/business/2014/03/18/comcast-ceo-interview/6577633/.

171 The Commission has acknowledged that all-digital service, along with encryption, benefits customers by enabling cable operators to remotely activate and deactivate service. This not only eliminates the need for customers to rearrange their schedules and wait for a technician, but it reduces the number of truck rolls necessary, leading to cost savings that can translate to increased investment in innovative products and services. *See Basic*

enabled Comcast's development of next-generation customer self-service products, including self-install kits and online self-service, which save both customers and the company significant time and money and improve customer satisfaction. These options are now ubiquitous across Comcast's footprint and are having real-world impacts: Since 2010, inbound customer service and billing-related call volume has decreased by approximately 20 million. In the last two years, Comcast has reduced its truck rolls by eight million. And, building on this positive momentum, Comcast has made improved customer service a key focus over the past several years, offering shorter appointment windows and reducing repeat service visits by about 20 percent since 2010. Those improvements have been recognized by external objective parties: For example, in 2014, Comcast earned a gold Stevie award in innovation in customer service, and, in 2013, Comcast earned a bronze Stevie award in e-Commerce customer service.[172] Since 2010, Comcast has improved its J.D. Power Overall Satisfaction by nearly 100 points as a video provider and close to 80 points in High Speed Data – more than any other provider in the industry during the same period.[173]

While TWC has been able to invest in some self-installation options for existing

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Service Tier Encryption, Report and Order, 27 FCC Rcd. 12786 ¶¶ 8, 12-13 (2012); *see also Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices*, Third Report and Order and Order on Reconsideration, 25 FCC Rcd. 14657 ¶ 45 (2010) (supporting the transition to all-digital cable service and noting that all-digital service allows operators to "make more efficient use of spectrum capacity, allowing the operators to dedicate more of their spectrum to broadband and other services"); *Cable Television Technical and Operational Requirements*, Notice of Proposed Rulemaking, 27 FCC Rcd. 9678 ¶ 2 (2012) (same).

172 2014 Stevie Award Winners, https://www.stevieawards.com/pubs/sales/awards/426_2281_24735.cfm (last visited Apr. 4, 2014); 2013 Stevie Award Winners, https://www.stevieawards.com/pubs/sales/awards/426_2281_22268.cfm (last visited Apr. 4, 2014).

173 *Compare* Press Release, J.D. Power, 2013 U.S. Residential Television Service Provider Satisfaction Survey (Sept. 26, 2013), http://www.jdpower.com/content/press-release/jxh1ZHX/2013-u-s-residential-television-service-provider-satisfaction-study.htm, *and* Press Release, J.D. Power, *2013 U.S. Residential Internet Service Provider Satisfaction Survey* (Sept. 26, 2013), http://www.jdpower.com/press-releases/2013-us-residential-internet-service-provider-satisfaction-study, *with* Press Release, J.D. Power & Assocs., 2010 U.S. Residential Television Service Satisfaction Study (Oct. 6, 2010), http://businesscenter.jdpower.com/news/pressrelease.aspx?ID=2010166; *and* J.D. Power & Assocs., 2010 U.S. Residential Internet Service Provider Satisfaction Survey (Oct. 28, 2010), http://businesscenter.jdpower.com/news/pressrelease.aspx?ID=2010167.

customers, TWC does not yet offer a self-install option for new customers. As Drs. Rosston and Topper observe:

> [C]ustomers in [the] current TWC territory will benefit from getting access to Comcast's innovative self-installation and self-service options. . . . [F]ollowing its conversion to digital, Comcast introduced self-service products, including self-install kits and online self-service. Self-install kits allow customers to hook up video, broadband, or voice service without an on-site cable technician. Self-install kits are cheaper for consumers than a traditional technician installation: $9.95 shipping and handling compared to a $50–60 technician installation fee. By investing millions of dollars in developing and designing the self-install kits, Comcast was able to reduce the marginal cost of adding new customers.[174]

Comcast's recent advances in customer service and satisfaction have served to focus and intensify its desire to be a leader for an industry historically plagued by dissatisfaction. Comcast will apply this mindset to the TWC systems. Nonetheless, Comcast recognizes it must continue to strive to enhance its customer service. Comcast values its customer relationships tremendously and is firmly committed to invest more in this important area to solidify these relationships, especially in the intensely competitive environment in which the company operates. The combined company will be able to invest ever more in centralized service systems and improvements and will bring a dedicated effort to improving performance in the TWC markets.

b. TWC Customers Will Enjoy More Programming Choices.

Comcast has more extensive programming rights and a broader VOD and online catalog than TWC. These rights, along with the upgrades Comcast would bring to TWC's VOD infrastructure and broadband network, will provide customers in the TWC markets with access to more programming choices in time, particularly in terms of VOD and TV Everywhere options.

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[174] Rosston/Topper Decl. ¶ 110.

As a result, the combined company will be better positioned to retain and win back consumers in the face of increasingly widespread and rigorous competition for customers' time and attention.

VOD Leader. As Time Warner, Inc. CEO Jeff Bewkes recently observed, "[t]he world's going to [VOD]."[175] Bewkes praised Comcast's VOD platform and X1 interface while noting that other operators "frankly . . . haven't moved fast enough or effectively enough to deliver," and pointedly observed that, "[i]f we don't fill that need, then it is going to get filled by somebody else and it would be a missed opportunity."[176] Comcast has sought to seize the opportunity. Xfinity On Demand today includes approximately 50,000 programming choices (compared to TWC's 15,000-20,000), with the most current TV shows and movies, and over 80 percent of those choices are free of charge.[177] It offers the most sought-after movies from all the major studios, and one of the broadest selections of independent films.

To deliver all these offerings to its customers, Comcast has built an industry-leading VOD platform that it will bring to TWC systems. This likely will include, among other things, extending its library servers to serve TWC subscribers, building out its robust VOD content delivery network to TWC systems – i.e., by upgrading the IP network that connects the library servers with TWC's systems, adding caching and streaming servers to the TWC infrastructure, etc. – and integrating TWC's VOD back office with Comcast's system. Comcast will extend its broad VOD programming rights to the TWC systems as soon as its contracts permit, and as soon

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[175] Deborah Yao, *Time Warner CEO: Increases in Content Rights Fees Will Not Kill Pay TV Ecosystem*, SNL Kagan, Dec. 10, 2013, http://www.snl.com/InteractiveX/article.aspx?BeginDate=12/10/2013&ID=26223656&KPLT=2.

[176] Joe Flint, *Time Warner CEO Jeff Bewkes Says Distributors Need to Boost VOD*, L.A. Times, Dec. 10, 2013, *available at* http://articles.latimes.com/2013/dec/10/entertainment/la-et-ct-time-warner-bewkes-20131210.

[177] Xfinity On Demand averages 400 million views each month. Since the service launched in 2003, there have been 32 billion views.

as the planned upgrades to the TWC systems permit the delivery of this much larger content library to customers.

To expand customers' options for viewing this extensive library of VOD content, Comcast continues to work with third-party device manufacturers, such as Samsung, TiVo, and Microsoft, to enable access to Xfinity On Demand content on a variety of devices. In fact, Comcast and TiVo plan to complete the integration of Xfinity On Demand service on TiVo DVRs for all Comcast markets by June of this year.[178] In TiVo CEO Tom Rogers' view, this transaction may provide TiVo with the further opportunity to expand its connection to Comcast in more key markets, consistent with the Commission's goals of a retail market for navigation devices.[179]

Comcast also recently launched (in November 2013) the Xfinity TV Store, giving customers the ability to purchase movies and TV shows for downloading and streaming – often weeks before they are available to rent or purchase on Blu-Ray and DVD – and store them in the cloud. Customers can access their purchases anytime, anywhere, and on any device, without the hassle of managing files, switching devices, or remembering passwords. Comcast customers have already been actively using this robust new platform. Over 2 million movies, TV shows, and other content have been purchased since launch, and Comcast has been the leading seller of certain movies in certain time frames – ahead of iTunes.[180] TWC does not currently offer such

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178 Jeff Baumgartner, *TiVo Profits on New MSO Subscriber Record*, Multichannel News, Feb. 26, 2014, *available at* http://www.multichannel.com/distribution/tivo-profits-new-mso-subscriber-record/148553.

179 *Id.*; *see also* 47 U.S.C. § 549.

180 *See* Joe Flint, *Comcast's Digital Movie Sales Off to Solid Start*, L.A. Times, Dec. 5, 2013, *available at* http://www.latimes.com/entertainment/envelope/cotown/la-et-ct-comcast-digital-sell-through-20131205,0,1835629.story#axzz2wSjkjzYS (noting that Comcast had been the number one seller of certain movies like "The Hunger Games" in recent weeks).

an electronic sell-through service, so the transaction will bring this service as a new benefit to all of its customers.[181]

TV Everywhere Leader. Nearly five years ago, Comcast worked with TWC's then-parent, Time Warner Inc., to establish TV Everywhere principles to bring "significantly more television content to customers online in a manner that is consumer-friendly, pro-competitive and non-exclusive."[182] Those principles have been made into reality, in significant part through Comcast's efforts to secure TV Everywhere rights from programmers (and through NBCUniversal's leading the industry in extending such rights to MVPDs).[183] Led by Comcast's initiatives, TV Everywhere is gaining in popularity, doubling its usage in 2013.[184]

The popularity of TV Everywhere during the recent Winter Olympics demonstrates Comcast's deep commitment to this consumer-friendly and convenient platform:[185]

- NBC Sports delivered a massive 10.8 million hours of online video as part of its production of the 2014 Winter Olympic Games in Sochi, Russia.
- More than 8.5 million hours of video was consumed through TV Everywhere authenticated live streams on NBCOlympics.com and the NBC Sports Live Extra app.

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181 As Drs. Rosston and Topper explain, both because of the combined company's expanded geographic scope and its ability to overcome technological differences and other challenges, the transaction will facilitate the rollout of such convenient video programming services to TWC's customers. *See* Rosston-Topper Decl. ¶¶ 102, 115.

182 Press Release, Comcast Corp., Time Warner Inc. Announces Widespread Distribution of Cable TV Content Online (June 24, 2009), http://corporate.comcast.com/news-information/news-feed/time-warner-inc-announces-widespread-distribution-of-cable-tv-content-online.

183 Press Release, HIS Inc., TV Everywhere Spreads Among US Television and Cable Networks; NBCUniversal Leads (Oct. 18, 2013), http://press.ihs.com/press-release/design-supply-chain-media/tv-everywhere-spreads-among-us-television-and-cable-networks.

184 Daisy Whitney, *Study: TV Everywhere Doubles, Tablets Drive Usage*, Online Video Insider (Feb. 6, 2014), http://www.mediapost.com/publications/article/219055/study-tv-everywhere-doubles-tablets-drive-usage.html.

185 Press Release, Comcast Corp., Sochi 2014: A TV Everywhere Success Story (Mar. 7, 2014), http://corporate.comcast.com/news-information/news-feed/sochi-2014-a-tv-everywhere-success-story.

- In an unprecedented effort, 225 multichannel distributors offered verification for their customers, with more than 4.8M devices successfully verified.

- NBCOlympics.com and the NBC Sports Live Extra app saw 24.6 million video viewers (160 percent higher than the 2010 Vancouver Winter Games and 8 percent higher than the 2012 London Summer Games).

- And the February 21, 2014 verified live stream of the Olympic men's ice hockey semifinal between the United States and Canada generated more than 2.1 million unique users – believed to be the largest TV Everywhere verified streaming audience in U.S. history, and ranking No. 1 in unique users for any NBC Sports Digital stream, topping NBC's non-authenticated Super Bowl XLVI in February 2012.

Today, Comcast offers an industry-leading TV Everywhere experience to its customers. Comcast customers have access to 300,000-plus streaming choices, including over 50 live TV channels, on XfinityTV.com. These live channels and over 25,000 on-demand choices are also available on the Xfinity TV Go app, which also allows customers to download certain shows and movies to watch offline later.[186] TWC's TV Everywhere offering is more limited; it provides less content and less flexibility for accessing this content outside the home, with up to just 29 live TV channels and 6,500 hours of video content.

The increased scale from the transaction will allow Comcast to improve the economics of investing in significant fixed-cost programming rights (such as SVOD and other digital rights) to provide greater value to customers. Greater scale and denser geographic coverage will also create marketing efficiencies that are particularly important for the roll-out of services like TV Everywhere that may require aggressive – and expensive – marketing campaigns to educate and attract consumers.[187] For example, Comcast debuted a "Watchathon Week" in April 2013, during which Comcast customers were able to catch up on their favorite shows from more than

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[186] *See* Press Release, Comcast Corp., Xfinity TV Go Network Roster Tops 50 with Latest Update (Mar. 19, 2014), http://corporate.comcast.com/news-information/news-feed/comcast-customers-can-now-stream-more-than-50-live-channels-anytime-anywhere.

[187] Angelakis Decl. ¶ 19.

30 programming networks at no additional charge. The promotion set new viewing records, including via Comcast's TV Everywhere platforms.[188] Another Watchathon Week recently ended (this time with over 5,000 episodes from 48 networks), and early usage data indicate that it remains an immensely popular offering. With added scale, Comcast could make even more effective marketing efforts to inform subscribers across a larger region (or across the nation) about these valuable services. As Drs. Rosston and Topper explain, the combined company's added scale also will accelerate innovation by allowing Comcast to provide fully-featured apps for more third-party devices more quickly by spreading these fixed costs across a greater number of customers.[189]

While the transaction will clearly bring to the TWC systems more content and more convenient ways of accessing such content, it is conversely *not* clear that the transaction will significantly discipline the costs of such content. Programmers as a whole have significant bargaining power, as reflected in the fact that programming costs have far outstripped inflation and retail cable rate increases for many years.[190] While Comcast is far from immune to these rising costs, Comcast's response has been to obtain from programmers added value for its customers in the form of the most robust suite of on-demand, TV Everywhere, and other digital

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188 *See* Maggie McLean Suniewick, *Watchathon Week Breaks Major Xfinity TV Records*, Comcast Voices (Apr. 19, 2013), http://corporate.comcast.com/comcast-voices/watchathon-week-breaks-major-xfinity-tv-viewership-records.

189 *See* Rosston/Topper Decl. ¶ 89.

190 *See, e.g.*, Ali Choukeir & Chris Young, *Virtual Service Provider Space an Unfinished Puzzle*, SNL Kagan, Feb. 6, 2014, http://www.snl.com/interactivex/article.aspx?id=26791052&KPLT=6 (noting that "programming costs continue to outpace the rate of inflation, especially [for] sports and retrans"); Tony Lenoir, *Cost of Programming Jumps 54% in 5 years*, SNL Kagan, Aug. 28, 2013, http://www.snl.com/InteractiveX/article.aspx?BeginDate=08/28/2013&ID=24720103&KPLT=2 (reporting that the top three cable operators (Comcast, TWC, and Charter) have seen programming costs per subscriber increase in the last five years by 54 percent – from $24.50 to $37.72); Robert Gessner, *Programming Costs Drive Cable Bills Higher*, TV NewsCheck (Mar. 14, 2014), http://www.tvnewscheck.com/article/74809/programming-costs-drive-cable-bills-higher.

rights from programmers like Disney, Fox, AMC, and Viacom.[191] These benefits will ultimately redound to the benefit of TWC markets as well. And it is possible that the combined company may be able to realize some programming cost savings by combining contracts in certain cases. These cost savings will allow Comcast to provide even more programming options to meet its customers' demands.

c. The Benefits of the X1 Platform.

Comcast's launch of its X1 platform and successor X2 user interface is a key example of the video technology that Comcast has deployed to its customers and would extend to TWC customers in this transaction. Comcast's scale, as well as its commitment to innovation, research and development, and infrastructure investment led to the development and deployment of the X1 platform throughout Comcast's footprint. Comcast made an upfront investment of {{ }} to develop this platform – and could have done even more, more quickly, with greater scale.[192] The combined company will bring that same commitment to the acquired TWC systems, and with greater scale and investment will be able to do *even more*.[193]

The X1 platform gives customers unmatched interactive TV functionality featuring a state-of-the-art user interface and other product features that revolutionize customers' viewing experiences:

- Integrated search (across TV, Xfinity On Demand, and DVR) with instant play;
- Access to the Internet and apps like Facebook and Pandora, as well as integrated TV apps like weather and traffic;
- Cross-product integration, including access to voicemail from the TV;

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191 *See* MoffettNathanson Research, *Comcast and Time Warner Cable: Of White Knights and Brotherly Love* 5 (Feb. 13, 2014) (noting that Comcast has secured more digital rights than TWC).

192 Angelakis Decl. ¶ 14; *see* Rosston/Topper Decl. ¶¶ 87-89.

193 Angelakis Decl. ¶ 16.

- Enhanced personalization and recommendations;
- A "Last 9" feature that enables customers to easily access the last nine channels, VOD programs, and apps that were viewed or used;
- The X1 remote app, which offers a new remote control experience by letting customers use their smartphones and tablets to control their TVs with a simple gesture, or use voice commands to easily navigate the programming guide; and
- The X1's network-based user interface, which enables Comcast to implement upgrades without swapping out customer equipment, thereby leading to faster innovation cycles.

Comcast also has launched its new X1 DVR with cloud technology, enabling customers in certain markets to watch their DVR recordings on any X1-connected TV and on computers and mobile devices in the home, as well as download recorded content to mobile devices to take on-the-go. At the same time, Comcast has deployed its live in-home IP cable streaming feature, which allows customers on the X1 platform to stream practically their entire cable channel lineup, including must-carry stations and PEG channels, to computers, smartphones, and tablets in the home.

The value and innovation of the X1 platform and X2 user interface have been widely recognized:

- "Today, Comcast's X2 . . . is the video industry's best product."[194]
- "I have been testing this sleek black cable box for the past three weeks, but to call it a cable box really doesn't do it justice. It is a nice blend of Internet content, live television, apps, a multi-tuner DVR and on-demand programming, in one of the cleanest user interfaces that you'll find from a cable company."[195]

[194] MoffettNathanson Research, *Comcast Q4 2013: Boardwalk Empire* 2 (Jan. 28, 2014).

[195] Todd Bishop, *Xfinity X1: How Comcast Roped Me Back in to Cable*, GeekWire, Aug. 22, 2013, http://www.geekwire.com/2013/xfinity-x1/.

- "[X1] feels like a genuinely 21st-century way to use a widescreen television set – like a smart TV inside your cable box."[196]
- Netflix CEO Reed Hastings praised the X1, noting that it's a "great product."[197]

Without this transaction, TWC customers would likely not experience the benefits of this revolutionary video experience at all, or at least not as rapidly or pervasively. TWC by itself has not had the scale to allow it to invest in and deploy this technology.[198] To be sure, Comcast has explored licensing arrangements to enable unaffiliated companies to use X1 technology, but those efforts are time-consuming and face challenges, such as infrastructure limitations of prospective partners, compensation issues, customization, and so on.[199]

In contrast, the combined company may be able to begin deploying Comcast's cutting-edge X1 entertainment operating system within the first year in certain TWC systems.[200] And the transaction presents the opportunity for Comcast to spread the costs of developing and deploying the X1 platform among more Comcast-owned systems, which will in turn help facilitate future innovation.[201] TWC also has developed certain video service technologies that may be deployed throughout the combined company as well. Notably, TWC offers StartOver

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196 Tim Carmody, *Comcast's New X1 UI Integrates Real-time and Streaming TV with News and Social Apps*, The Verge, May 21, 2012, http://www.theverge.com/2012/5/21/3033972/comcast-ui-platforms-video-news-social-apps.

197 John McDuling, *The American Cable Industry's Cunning Plan to Save Itself: Make TV Work Like It Should*, Quartz, Feb. 4, 2014, http://qz.com/172533/the-american-cable-industrys-cunning-plan-to-save-itself-make-tv-work-like-it-should/.

198 Although TWC is now conducting limited employee trials of a new cloud-based user interface, HNav – and plans to conduct a Beta customer trial later this year – it has no firm plans for a commercial launch yet.

199 *See* Rosston/Topper Decl. ¶¶ 112-13. The X1 platform currently comprises over 400 separate but to some extent interdependent subsystems. A licensee of the X1 platform might well need or want to swap in several dozens of its own subsystems to handle certain of the platform's functions, which would require additional design and development work and raise questions as to allocation of responsibility for performance issues that may result.

200 Angelakis Decl. ¶ 28.

201 The transaction also will enable Comcast to lower the per-customer costs of developing and deploying in-depth metadata tagging for its video programming, which allows for more efficient and more customer-friendly searching capabilities, thereby accelerating its deployment. *See* Rosston/Topper Decl. ¶ 93.

and LookBack, two tools that offer customers flexibility in viewing that Comcast does not have. Comcast will explore whether those capabilities can enhance the X1 platform or other technology in the combined company's footprint.

d. The Combined Company Will Continue to Advance the Transition to IP Cable.

Both Comcast and Time Warner Cable have made great strides in the transition to IP cable and have invested significant resources in these efforts. In 2013, Comcast spent approximately {{ }} on IP-delivered cable service and plans to invest another {{ }} this year, and that does not include any expenditures for customer premises equipment like set-top boxes and gateways. Comcast has begun offering streaming IP cable services to universities, has delivered its VOD service in IP to the Xbox and the Samsung SmartTV, and, as noted, has launched a live in-home IP cable streaming feature in two regions. For its part, TWC also has invested in developing IP cable services and has created IP "simulcast" feeds of the company's linear networks, enabling customers to access such programming on a variety of retail devices.[202]

The combined company will continue to invest in and advance the IP cable transition, combining both companies' strengths and experience. Doing so will yield a number of consumer and public interest benefits. IP cable:

- Enables consumers to access their cable and advanced video services in their homes on a wide variety of IP-enabled retail devices – video game consoles, tablets, and other connected devices;[203]

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[202] Glenn Britt, CEO, Time Warner Cable, Inc., Bank of America Merrill Lynch Global Telecom & Media Conference, Tr. at 9 (June 4, 2013).

[203] *See, e.g.*, Yaron Raz, *Migrating to IP in the Cable TV Environment: Benefits, Challenges, and Resolutions*, CED, Oct. 16, 2013, http://www.cedmagazine.com/articles/2013/10/migrating-to-ip-in-the-cable-tv-environment-benefits-challenges-and-resolutions; *Cable Edges to an IP Future*, Digital TV Europe (July 3, 2013),

- Shifts more of the network intelligence to the cloud, thereby allowing the combined company to rapidly roll out new functionalities to consumers;
- Reduces costs by allowing the combined company to simplify its existing distribution networks by relying on IP technology to transport all of its services and relying on innovative off-the-shelf IP-based retail devices and reducing its home equipment and inventory costs; and
- Dramatically reduces energy consumption for consumer set-top boxes.

In short, like the parallel transition that is beginning to occur in the traditional phone system, the transition to IP cable will improve the "lives of millions of Americans . . . by the direct and spillover effects of the technology transitions, including innovations that cannot even be imagined today."[204]

3. The Transaction Will Promote the Deployment of Advanced Voice Services and Enhance Competition in the Voice Marketplace.

By permitting the companies to combine the best aspects of their robust and innovative voice services, approval of this transaction will leave the merged company even better suited to offer an array of advanced voice services in competition with ILECs and other providers. The Commission has long recognized the pro-competitive and pro-consumer impact of cable's offering of voice services.[205] The combined company will build on this strong foundation, facilitating more advanced services and features and a more robust alternative for voice customers.[206]

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http://www.digitaltveurope.net/74622/cable-edges-to-an-ip-future ("IP is seen as a desirable platform for video services as it will enable them to deliver multiroom and multiscreen services much more economically.").

[204] *Technology Transitions*, Order, Report and Order, and Further Notice of Proposed Rulemaking, Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, GN Docket No. 13-5, FCC No. 14-5 ¶ 2 (rel. Jan. 31, 2014).

[205] *See* Press Release, FCC, FCC Approves Merger of AT&T Inc. and BellSouth Corp. (Dec. 29, 2006) (noting that "the rapid growth of intermodal competitors – particularly cable telephony providers . . . – is an increasingly significant competitive force in this market"); *Connect America Fund*, 26 FCC Rcd. 17663, App. I ¶ 5 n.11 (2011).

[206] Angelakis Decl. ¶ 30.

Comcast offers its Xfinity Voice customers several enhanced features, including traditional features such as call waiting, three-way calling, and voicemail, as well as newer offerings such as caller ID provided over a television, laptop, or mobile device, and Readable Voicemail. Comcast also offers customers the ability to send and receive unlimited text messages to and from their Xfinity Voice telephone numbers through an application that can be downloaded on a customer's mobile device or using Xfinity Connect on a customer's computer.

Recent network investments have expanded dramatically the features available to Xfinity Voice customers. Comcast has moved to a new advanced and flexible IP Multimedia Subsystem ("IMS") network architecture, in which a handful of geo-redundant switches serve all Comcast voice customers. This architecture enables customers to access the service from different locations using a variety of methods and networks, including not only the wired connections provided by Comcast, but also Wi-Fi connections and public Internet connections provided by third parties, whether wired or wireless. For example, it enables "Voice 2go," which allows users to place calls over a Wi-Fi or data connection from their Comcast-assigned telephone numbers using an app downloaded to a mobile device, and to receive calls to their home numbers at multiple locations and on multiple devices using the "Advanced Call Forwarding" feature.

The transaction will allow Comcast to integrate the best features of its voice offerings with the TWC's best features, creating best-in-class voice service offerings. For example, TWC's voice offering currently lacks many of Xfinity Voice's nomadic features, such as the ability to place calls over a third-party Wi-Fi network or through a mobile device.

Finally, both companies have increasingly expanded their international reach and calling options. For example, TWC recently launched free Mexico calling, and Comcast has implemented eight different international calling options (as compared to TWC's two), thereby

allowing customers to select from a range of possibilities that best meet their family and/or business circumstances. Together, the combined company's scale and existing relationships will enable it to reach more countries for its customers, and for very reasonable rates.

C. Businesses of All Sizes Will Benefit from a Substantial Increase in Much-Needed Competition and the Accelerated Deployment of Advanced Services.

The transaction will produce significant public interest benefits by combining the two companies into a stronger, more cost-efficient competitor that can offer new options and aggressively priced services to small, medium, and enterprise businesses across most of the country, challenging the incumbents that have dominated this marketplace for decades. The competitive benefits for the medium-sized and enterprise markets will be particularly substantial and far-reaching.

Although definitions are not uniform across the industry, Applicants generally view the business services space in which they operate as comprised loosely of the following four segments:

- Small business – generally fewer than 20 employees;
- Medium-sized business – generally 20-500 employees often across multiple sites in different geographic locations (includes certain regional and super-regional businesses);
- Enterprise/national accounts – generally over 500 employees across many sites; and
- Cell backhaul service to wireless carriers.

All four segments will benefit from this transaction.

1. Comcast's and TWC's Proven Track Records, Though Limited in Scope to Date, Demonstrate the Power of Competition in This Space.

The approximately 23 million small businesses in the United States are the largest source of employment in the country,[207] and many of them, until recently, have been paying too much and receiving too little value from their communications service providers.[208] For many small businesses, until Comcast, TWC, and other cable operators entered the market, the only data transport option available was too often an expensive T1 line (at 1.54 Mbps) from a legacy provider; for too many others, slower services were their only options.[209]

Comcast recognized this opportunity several years ago and, since 2006, has aggressively extended its network to enable it to offer small businesses a competitive alternative for their data, voice, and video needs. Comcast moved swiftly to develop business-class billing, provisioning, and customer interface systems. Comcast has built out its network to {{ }} of the estimated {{ }} premise-based (rather than home-based) small businesses in its footprint and continues to expand this investment. It has recruited an aggressive sales force and built the required service delivery and service assurance expertise and systems. And it has brought to thousands of pharmacies, barber shops, dry cleaners, and restaurants a value proposition that was far better than what was previously available.[210]

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[207] *See Small Business Trends*, U.S. Small Business Administration, http://www.sba.gov/content/small-business-trends (last visited Apr. 5, 2014).

[208] *See* Letter from Jamie Belcore Saloom, Assistant Chief Counsel for Telecommunications, Small Business Administration, Office of Advocacy, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25 (Dec. 5, 2013); Columbia Telecomms. Corp., *The Impact of Broadband Speed and Price on Small Businesses* 1-4 (Nov. 2010), http://www.sba.gov/content/impact-broadband-speed-and-price-small-business-1#.

[209] *See* Charlie Reed, *Comcast-TWC Merger to Create Fourth Largest Business Services Player*, Telecom Reseller, Feb. 13, 2014, *available at* http://www.telecomreseller.com/2014/02/13/comcast-time-warner-cable-merger-to-create-fourth-largest-business-services-player/.

[210] *See* J.T. Ramsey, *Q&A with Bill Stemper, President of Comcast Business Services*, Comcast Voices (Feb. 12, 2013) (describing evolution of Comcast's Business Services).

Comcast's investments and innovations in this area have led to growing marketplace success. And the company has won several awards for its small business services, including the Leading Lights Award last year for Most Innovative SMB Service and the Hosted VoIP leader award in 2012 and 2013. In the last several years, Comcast has also entered the medium-sized market segment and has made some promising gains.

TWC also robustly serves the small business segment in its footprint. As in the case of Comcast, this market segment accounts for the majority of TWC's business services revenue. But TWC also has more experience providing advanced services to medium-sized and enterprise businesses because of its presence in the New York and Los Angeles markets, and had an earlier start. Despite the fact that both companies are gaining momentum in their respective segments, in 2013 Comcast and TWC together had only approximately 10-15 percent market share for small- and medium-sized businesses in their footprints, and a *de minimis* share of enterprise businesses.[211]

Even at these initial levels of service, however, Comcast and TWC have already had a substantial competitive impact in the business services area, driving legacy providers to drop prices and to upgrade their services and add value for customers. Analyst reports have underscored aggressive price competition by Comcast and TWC in the small- and medium-sized

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[211] *See* Angelakis Decl. ¶ 32; Liana B. Baker, *Comcast: Business services is sweet spot in Time Warner Cable deal*, Wall St. J., Apr. 1, 2014, *available at* http://www.reuters.com/article/2014/04/01/us-comcast-twc-business-analysis-idUSBREA3022F20140401 (("'The higher you move upmarket, the tougher it's going to be. The combined company will have a bigger regional footprint than AT&T and Verizon but AT&T and Verizon have developed a national structure that'll be hard to crack . . . .'") (quoting IDC analyst Matt Davis)). In particular, Comcast has achieved penetration in an estimated 20 percent of the small-business segment in its footprint, *see* Doug Mitchelson & Brian Russo, Deutsche Bank, *Pay TV Guide / 4Q13 Wrap* 35 (Mar. 6, 2014), and TWC estimates that it serves 12 percent of small- and medium-sized businesses in its area. According to third party estimates, Comcast and TWC combined reportedly only had a 6.4 percent share of the market for retail business broadband Internet service customers in the United States in 2013. *See* Charlie Reed, *Comcast-TWC Merger to Create Fourth Largest Business Services Player*, Telecom Reseller, Feb. 13, 2014, *available at* http://www.telecomreseller.com/2014/02/13/comcast-time-warner-cable-merger-to-create-fourth-largest-business-services-player/.

business segments,[212] with a 2013 research report noting that new entry was decreasing Ethernet pricing for business by 10 percent or more a year.[213] And cable competition has led incumbent competitors to respond with service enhancements and aggressive new investments as well. For example, AT&T and CenturyLink have intensified efforts to expand fiber to businesses and reduce cable's speed advantage, with AT&T pledging to extend fiber to one million businesses in its footprint and CenturyLink increasing the number of fiber-fed buildings by 17 percent between the third and fourth quarters of 2013.[214] Legacy providers also have responded by improving their offerings to bundle new data and voice features with basic network features.[215]

Comcast and TWC customers have praised price and feature enhancements as compared to their previous options:

- A Chicago school district contracted with Comcast and noted that "the district will save about 42 percent over what we were spending with AT&T."[216]

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212 Rosston/Topper Decl. ¶ 119.

213 Insight Research Corp., *US Carriers and Ethernet Services, 2013-2018*, at 5 (Aug. 2013); *see also* Century Link Petition for Forbearance, WC Dkt. No. 14-9, at 15 n.52 (Dec. 13, 2013) (quoting TeleGeography, *Global Enterprise Networks: Enterprise Service Pricing*, at 16, 20 (Jan. 2013) ("Median Ethernet market prices remain volatile, fluctuating considerably year to year. . . . With this said however, the long-term price trend is clearly down. . . . As a growing number of carriers offer the service, [Virtual Private LAN Service] prices continue to decline."); Craig Galbraith, *CableCos Gain Ground in Ethernet, But AT&T, Verizon Still Lead*, Channel Partners, Feb. 12, 2014, http://www.channelpartnersonline.com/news/2014/02/cablecos-gain-ground-in-ethernet-but-at-t-verizon.aspx ("Cable companies have developed a winning formula for the U.S. business Ethernet market. They are successfully leveraging their on-net fiber footprints to offer aggressive pricing and rapid service provisioning.").

214 *See* Sean Buckley, *AT&T's $14B Project VIP: Breaking Out the Business Service, U-verse Numbers*, FierceTelecom, Sept. 24, 2013, http://www.fiercetelecom.com/special-reports/atts-14b-project-vip-breaking-out-business-service-u-verse-numbers; Glen Post, CEO, CenturyLink, Inc., Q4 2013 Earnings Call, Tr. at 5 (Feb. 12, 2014).

215 *See* Rosston/Topper Decl. ¶ 120; Israel Decl. ¶¶ 159-60. For example, Verizon has added Google Apps for Business for its business customers. Monte Beck, Vice President of Small Business Market, Verizon, *Google Apps for Business Now Available for Verizon Customers*, Google Official Enterprise Blog (Jan. 24, 2011), http://googleenterprise.blogspot.com/2011/01/google-apps-for-business-now-available.htm. Similarly, CenturyLink has enhanced is Core Connect product for business by adding website design and hosting, domain name registration, fax over email, and data backup services. *See* Century Link Business, *Core Connect*, http://www.centurylink.com/smallbusiness/products/bundles/core-connect/ (last visited Mar. 30, 2014).

216 Denys Bucksten, *District 112 Will Have A Tenfold Increase in Bandwidth This Year To Improve Internet Access*, Chi. Trib., Aug. 12, 2013, *available at* http://articles.chicagotribune.com/2013-08-12/news/ct-tl-lk-0815-highland-park-school-technology-20130812_1_north-shore-district-district-112-bandwidth.

- In Pennsylvania, Comcast was able to provide a number of school districts with connectivity to the PA IUnet, an online, statewide, private network that allows teachers and students to communicate, collaborate, and share resources. According to Jared Mader, director of education technology for the Lincoln Intermediate Unit, which helped facilitate the agreement, "Comcast has allowed many of our districts to increase their bandwidth exponentially – and in some cases for half the price – which has given them access to cloud computing, video conferencing, and other online educational tools that had previously been cost-prohibitive for them."[217]

- "Utz Quality Foods, Inc. is using Comcast Business Ethernet and Business Trunks to connect multiple office locations and distribution centers throughout the Eastern United States. . . . With its recent acquisitions of three major regional brands and distribution networks – Zapp's Potato Chips, Wachusett Potato Chip, and The Bachman Co. – within the past 24 months, Utz realized it needed to reassess its existing wide area voice and data networking infrastructure to replace its old T1 lines. . . . 'In aggregate, we realized a significant savings, while enjoying more bandwidth than what our T1 lines had given us,'" (quoting J. Ed Smith, chief information director).[218]

- In Florida, "Comcast has been aggressively pursuing business that traditionally might be handled by legacy phone companies such as AT&T . . . . 'We are saving money over what we were previously paying for our old phone system, and now we have a completely cloud-based solution that gives our team full freedom to work wherever they need to.'"[219]

- Union Bank in Ohio used T-1 broadband lines provided by five separate telecommunications carriers before switching to TWC. Switching to TWC has provided many benefits. For example, according to a TWC case study: "[T]he data transmission speed has doubled, having gone from 1.5 Mbps on the old T-1 lines to a blazing fast 3 Mbps bandwidth on [TWC]'s state of-the-art fiber-optic network. As a result, the bank's data congestion problems are a thing of the past . . . [TWC] was able to fulfill the bank's most stringent network security needs through its managed security program, which includes filtering and around-the clock monitoring that Union Bank is required to maintain . . . the solution has

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[217] School CIO, *Back Office Business: Pennsylvania Districts Get Low-Cost Ethernet Service*, Jan. 31, 2014, http://www.schoolcio.com/cio-feature-articles/0109/back-office-business/54654.

[218] *Utz Upgrades Connectivity for Offices, Distribution Centers*, Evening Sun, Apr. 24, 2013, *available at* http://www.eveningsun.com/news/ci_23096622/utz-upgrades-connectivity-offices-distribution-centers-including-hanover.

[219] Kevin Gale, *Cutting Edge Phone System Helps Small Business Owners, Road Warriors*, S. Fla. Bus. J., Sept. 23, 2013, *available at* http://www.bizjournals.com/southflorida/blog/2013/09/comcast-adds-mobile-feature-to.html (quoting Jordi Tejero, owner of CRS Technology Consultants).

resulted in a tremendous reduction in the monthly cost of Union Bank's broadband service."[220]

- Switching to TWC has provided many benefits to the City of Colleyville, TX. For example, according to a TWC case study: "The [TWC] secure and fiber-rich [Ethernet Virtual Private Line] network, scalable up to 10 Gbps+, helps with routine government tasks . . . . It has also enabled . . . Colleyville to centralize servers, applications and terabytes of data storage from six to two data center facilities. The centralization has brought numerous enhancements to city administration, such as hardware and electricity cost savings, data synchronization across all its facilities, centralized sewage and water monitoring systems, enabling online training for firefighters and police officers and desktop virtualization."[221]

Nevertheless, Comcast and TWC have faced constraints in attempting to replicate their market success on a larger scale. As described below, and as explained by Drs. Rosston and Topper, and Dr. Israel, respectively, the added scale and geographic reach, as well as the complementary strengths afforded by the transaction, will enhance the combined company's ability to be a more significant player in the medium-sized business segment and beyond.[222]

2. The Transaction Will Enhance Competition for Medium-Sized, Regional, Super-Regional, and Enterprise Businesses.

a. The Combined Company's Greater Scale, Scope, and Efficiency Will Overcome Key Constraints.

To date, geographic constraints have hindered Comcast, TWC, and other cable companies from competing effectively against incumbent providers with national scale and scope for larger business customers that have multiple office locations in various states.[223]

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220 Time Warner Cable, *The Union Bank Company Cashes in on Blazing Fast Ethernet and Managed Security Services from Time Warner Business Class*, Case Study, http://www.timewarnercable.com/en/business-home/resource-center/case-studies/union-bank-company.html.

221 Time Warner Cable, *City of Colleyville Modernizes their Network with Time Warner Cable Business Class Fiber-Rich Ethernet Services*, Case Study (Nov. 2013), http://www.timewarnercable.com/en/business-home/resource-center/case-studies/city-of-colleyville.html.

222 *See* Rosston/Topper Decl. ¶¶ 122-138; Israel Decl. ¶¶ 133-57.

223 *See* Rosston/Topper Decl. ¶ 125.

Where a customer's business spans multiple areas, a cable company with a limited footprint is often not an option at all. And while Comcast and TWC could theoretically partner to serve customers that span both companies' footprints – and in fact have ongoing efforts to do so – such offerings are often difficult to arrange and manage for both the customer and for the providers. Although some customers are willing to work with an "aggregator" to cobble together multiple providers' offerings to serve their various sites, many customers refuse to use aggregators or are willing to consider such options only where one provider can serve a majority of the locations using its own network.[224] And customers tend to prefer the higher level of reliability that results when a network is built to a common set of technical standards, is managed by a single network operations center, and offers a single point of contact for technical or other customer-service issues. As Dr. Israel explains, both Comcast and TWC now face significant "coordination problems associated with multiple firms serving a single customer," including differences in business practices between Comcast and TWC themselves. These coordination problems are often impossible to resolve via contracting.[225]

Another constraint currently faced by Comcast and TWC is "double marginalization" under which the price that Comcast provides to its customer reflects two profit margins: the margin that the other supplier (say, TWC or another provider) includes in its wholesale price to Comcast and the margin that Comcast includes in the retail price to the customer. Dr. Israel details how "lower margins make it less profitable for Comcast (or TWC) to bid on a project and increase the likelihood that a project will fail to meet Comcast's (or TWC's) internal hurdle

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224 Angelakis Decl. ¶¶ 35-36.

225 Israel Decl. ¶ 147; *see also id.*¶ 148; Rosston/Topper Decl. ¶ 141.

rates. To the extent that the lower return arising from double marginalization prevents Comcast (or TWC) from bidding on a project, competition in the business services segment is reduced."[226]

As a result of the foregoing constraints, Drs. Rosston and Topper observe, cable companies often are viewed as not being able to make a competitive offering in this market segment.[227] The transaction will help change that by extending Comcast's geographic reach and enhancing the combined company's investment incentives.

Medium-Sized, Regional, and Super-Regional Businesses. Economies of scale will allow the combined company to drive fiber and other high-speed capacity technology deeper into the network, creating the broadband infrastructure that is needed to bring business locations "on-net."[228] TWC already has 58,000 commercial buildings connected with fiber in its footprint, and Comcast has about **[[ ]]** on-net fiber-connected buildings in its footprint. Both Comcast and TWC provide dedicated Internet access to businesses over their fiber networks, offering speeds of up to 10 Gbps. Where fiber is not an option, Comcast has helped pioneer the offering of "Ethernet over HFC" (hybrid fiber/coax) that delivers Metro Ethernet at guaranteed speeds of up to 10 Mbps symmetrical and provides a cost-effective Ethernet option for many customers.[229] The combined company will service a greater total number of on-net fiber and HFC buildings that can serve multi-site customers than either company does alone, and will have greater incentive to build out even more – making it a more viable competitive alternative to legacy providers. Furthermore, increasing the number of "on-net" sites the company serves will further

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226 Israel Decl. ¶ 151; *see also* Rosston/Topper Decl. ¶ 127.

227 *See* Rosston/Topper Decl. ¶ 120.

228 Angelakis Decl. ¶¶ 33-34.

229 With its Ethernet over HFC service, Comcast estimates that it makes Ethernet services available to approximately one million buildings.

reduce the costs and operational barriers for businesses with multiple sites and facilitate the re-investment of operating cash flow in connecting additional sites to its networks.[230]

An expanded footprint will also enable the combined company to provide an attractive unified service to regional businesses and super-regional businesses with offices adjacent to or clustered around areas previously split between the Comcast and TWC markets. These opportunities may be greatest in:

- **Northeast Corridor:** Boston (Comcast) → New York (TWC) → New Jersey (Comcast) → Philadelphia (Comcast) → Baltimore (Comcast) → Washington, DC (Comcast);
- **Midwest:** Pittsburgh (Comcast) → Cleveland (TWC) → Columbus (TWC) → Detroit (Comcast) → Chicago (Comcast);
- **Midwest 2:** Milwaukee (TWC) → Green Bay (TWC) → Chicago (Comcast) → Indianapolis (Comcast) → Kansas City (TWC) → Lexington (TWC) → Louisville (TWC);
- **Texas:** Houston (Comcast) → Dallas/Fort Worth (TWC) → Austin (TWC) → San Antonio (TWC);
- **Southeast:** Greensboro (TWC) → Charlotte (TWC) → Columbia (TWC) → Charleston (Comcast/TWC) → Atlanta (Comcast) → Mobile (Comcast) → Tallahassee (Comcast) → Jacksonville (Comcast) → Miami (Comcast); and
- **Pacific Coast:** San Diego (TWC) → Los Angeles (TWC) → San Francisco (Comcast) → Sacramento (Comcast) → Portland (Comcast) → Seattle (Comcast).

In addition to making it possible to reach and serve larger multi-site customers in a uniform fashion, the combined company's larger scale will enhance competition in other dimensions as well. Notably, it will allow the company to build super-regional Metro Ethernet clusters, thereby further consolidating key parts of the company's network and fostering more efficient delivery of services. Scale also will enable the combined company to spread its

[230] Likewise, a reduction in "off network" sites will allow Comcast to spend fewer dollars on processes devoted to managing interconnection contracting, service delivery, and service assurance efforts.

investments in product procurement and development over a larger potential base of customers, which will facilitate more investment and enhance the combined company's ability to compete with the incumbents (e.g., Comcast's Business Voice Edge Hosted PBX Service, described further below, is currently available to 6 million businesses, and post-transaction the service could be made available to 10 million prospects).

As Drs. Rosston and Topper explain, "the combined entity will be able to offer lower prices and will therefore be a stronger, more aggressive competitor, to the benefit of business customers," because "[t]he transaction will likely reduce prices for businesses whose locations span the Comcast and TWC networks by reducing or eliminating double marginalization and reducing the cost of underlying network services required for an out-of-footprint connection."[231] Dr. Israel similarly concludes that "the transaction alleviates both the coordination issues and the double-marginalization problems and makes it more profitable for the combined firm to bid on (and win) contracts from super-regional businesses."[232]

All of these scale, integration, and operational efficiencies will mean the combined company will be better equipped than either company alone could be to develop, deploy, maintain, and consistently upgrade innovative products and services for larger business customers.

Enterprise Businesses. Delivering services to national enterprise customers requires substantial investment in network infrastructure, data centers, and other facilities.[233] Comcast estimates that the cost of these network investments alone will exceed ${{ }} billion.[234] The

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231 Rosston/Topper Decl. ¶ 129; *see also* Israel Decl. ¶¶ 117-118, 142-144.

232 Israel Decl. ¶ 153.

233 *See* Rosston/Topper Decl. ¶ 136.

234 *See id.* ¶ 137.

increased number of on-net fiber and HFC buildings that can serve multi-site customers, as well as the increased scale, integration, and operational efficiencies described above will also establish the combined company as a meaningful alternative for enterprise companies that have many locations throughout the expanded Comcast-TWC footprint.[235] An enterprise customer may still need to rely on an aggregator for some of its locations to fill in the holes outside the combined company's footprint. However, with its greater footprint post-transaction, the company will be more likely to be a contender for the aggregator role because of its larger number of locations.[236] And as the main provider, the company can play a bigger role in ensuring quality service and reducing cost by avoiding double marginalization.[237]

Even where Comcast and TWC have been able to win some of this enterprise business in the past, they have been able to do so only on a patchwork basis. For example, TWC currently provides business services to the Cleveland Clinic and is partnering with the clinic to provide an in-home health solution to reduce the rate of readmissions. The Cleveland Clinic has two large campuses in Florida in the Comcast footprint, so TWC has not been able to offer those campuses its services or extend the in-home health solution trial to patients of the Cleveland Clinic who live in Florida or are there from Cleveland for part of the year. Approval of the transaction would change that for the first time, allowing the company to offer a unified solution to the Clinic. In short, for that entity, and for many others like it, the transaction offers a new alternative solution for business communications, and the promise of lower prices and more innovation – benefits that will redound to the consumers those businesses serve.

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235 *See* Rosston/Topper Decl. ¶¶ 135-138.

236 Angelakis Decl. ¶ 37.

237 Israel Decl. ¶¶ 153-58.

b. Combining Comcast's and TWC's Complementary Business Innovations Will Further Enhance Competition.

Beyond the significant benefits driven by larger scale, the combined company will be able to compete more effectively for medium-sized and enterprise business customers by combining Comcast's and TWC's respective product offerings into a "best of the best" service portfolio, thereby capitalizing on their complementary strengths and marketing expertise.[238]

For example, Comcast currently offers some services to business customers that TWC does not, including Comcast's Business VoiceEdge ("BVE"), which provides web-based PBX functionality with a host of nomadic features. This includes a "Be Anywhere" feature that allows customers to make and receive calls from any device at any location with one phone number, and to use 4-digit extensions to contact colleagues from their mobile phones. BVE also includes "Teleworker," which enables seamless integration of remote and work-at-home employees into a company's phone infrastructure. In 2013, Comcast was listed as a Leading Hosted VoIP Provider on the Infonetics Research 2013 North America Business VoIP Service Leadership Scorecard.[239]

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[238] Comcast is currently listed as the 8th largest U.S. Metro Ethernet provider. TWC is 5th. *See* Press Release, Vertical Systems Group, 2013 U.S. Carrier Ethernet Leaderboard (Feb. 12, 2014), http://www.verticalsystems.com/vsglb/2013-u-s-carrier-ethernet-leaderboard/. Additionally, although Comcast only launched its efforts in the medium-sized business market segment in 2010, it has already been recognized for its innovative efforts, winning a variety of Carrier Ethernet awards, including 2013 Metro Ethernet Forum awards for Regional Service Provider of the Year, Best Marketing, and Best Carrier Ethernet Business Application, as well as a 2012 Best Practices Award from Frost & Sullivan for North American MSO Ethernet Services Competitive Strategy Leadership. *See* Press Release, Comcast Corp., Comcast Introduces New Metro Ethernet Services for Mid-Sized Businesses (May 16, 2011), http://corporate.comcast.com/news-information/news-feed/comcast-introduces-metro-ethernet-services-to-address-bandwidth-application-and-reliability-requirements-of-mid-sized-businesses; Bill Stemper, *Comcast Wins Metro Ethernet Forum Service Provider of the Year Award*, Comcast Voices (Nov. 22, 2013), http://corporate.comcast.com/comcast-voices/comcast-wins-metro-ethernet-forum-service-provider-of-the-year-award.

[239] Press Release, Infonetics, Infonetics Scoreboard Ranks Comcast, Verizon, 8x8, XO Top N. American Business VoIP Providers, IP Connectivity Becoming Commodity (May 14, 2013), http://www.infonetics.com/pr/2013/North-America-Business-VoIP-Scorecard.asp.

Meanwhile, TWC, through its NaviSite subsidiary, provides a range of cloud-based solutions that appeal to medium-sized and enterprise businesses, including "Infrastructure as a Service" and "Desktop as a Service," and customized managed hosting, managed application, and message solutions, along with other related IT solutions and professional services.[240] TWC also offers Session Initial Protocol ("SIP") trunking, data center services, and other high-end business services products, and has received a "Metro Ethernet Forum" 2.0 Certification in all eight Ethernet product categories.[241] As Drs. Rosston and Topper conclude, "[c]ombining the complementary products and services offered by Comcast and TWC under a single company will enhance competition in business services" in a way neither company can do today.[242]

3. The Transaction Will Enhance Competition for Wireless Backhaul Services.

With mobile data traffic growing incredibly rapidly, wholesale wireless backhaul is also an emerging and significant national service that the combined company will be better positioned to provide in the years ahead.[243] Comcast and TWC have both responded to the growing need for wireless carriers to transport wireless traffic from their cell towers on high-capacity fiber facilities to make the mobile broadband ecosystem work more efficiently and reliably. TWC has grown its business through strategic acquisitions – recently purchasing DukeNet, an 8,700-mile regional fiber-based network that provides wholesale wireless backhaul and other business

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240 *See* Cloud Services, NaviSite, http://www.navisite.com/ (last visited Apr. 5, 2014).

241 *See The MEF Certification Program*, MEF, http://www.metroethernetforum.org/certification/mef-certification-programs (last visited Mar. 30, 2014). Comcast was the first service provider to receive CE2.0 certification. *See Comcast Business Services is World's First CE 2.0 Service Provider*, Telecom Review, http://telecomreviewna.com/index.php?option=com_content&view=article&id=334:comcast-business-services-is-worlds-first-ce-20-service-provider&catid=1:latest-news&Itemid=62 (last visited Apr. 2, 2014). Comcast is certified in six of the eight CE 2.0 categories.

242 Rosston/Topper Decl. ¶ 139.

243 Angelakis Decl. ¶ 38.

services to customers in Alabama, Florida, Georgia, North Carolina, South Carolina, Tennessee, and Virginia. TWC currently provides wireless backhaul to approximately 14,000 cell sites, while Comcast serves approximately 8,500 cell sites. Comcast's and TWC's current shares in this segment are small: the companies together had only an estimated 2.8 percent market share in 2013.[244]

As with the medium-sized and enterprise segments discussed above, the transaction will make the combined company a more effective wireless backhaul competitor to the ILECs due to:

- Improved network reach that will allow the company to serve a much higher proportion of a mobile operator's sites;
- Improved operations resulting from consistency in approach and technology on a larger fraction of a mobile operator's sites;
- Increased ability to build out fiber and invest in wireless backhaul infrastructure because of additional scope and scale; and
- Increased number of on-net locations, which will allow the operating cash flow from those sites to be re-invested in plant expansion to marginal sites.[245]

By utilizing not only TWC's assets, but also its knowledge and expertise of this business, Comcast will be better positioned to offer mobile operators the services they want in more locations.

4. The Transaction Will Inure to the Benefit of Small Businesses.

The combined investments and network upgrades that are necessary to serve medium-sized, enterprise, and wholesale wireless backhaul customers across the combined company

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[244] Charlie Reed, *Comcast-TWC Merger to Create Fourth Largest Business Services Player*, Telecom Reseller, Feb. 13, 2014, *available at* http://www.telecomreseller.com/2014/02/13/comcast-time-warner-cable-merger-to-create-fourth-largest-business-services-player/.

[245] *See* Angelakis Decl. ¶ 39.

footprint will also inure to the benefit of small business (and residential customers as well) in a number of ways.

First, since products developed for the medium-sized or enterprise segments can often be offered to/repackaged for small businesses, new product development driven by greater competition for larger businesses will also benefit small business customers. *Second*, small businesses (and residential customers) will enjoy the "spillover effects" from investments and plant upgrades made to serve larger businesses.[246] For example, consider a strip mall with 10 separate small business stores that previously did not have a competitive alternative to the ILECs for their broadband, voice, or video services, because it was cost-prohibitive for Comcast or TWC to build out its network for so few additional customers. If the combined company extends the last mile of its network to serve a medium-sized or enterprise customer with, say, five different sites, one of which is near the strip mall, those 10 stores may become serviceable from the same network extension. As Dr. Israel observes:

> [T]hrough a forward-looking lens, every build-out Comcast does for a business customer in the future lays down more network infrastructure to serve more businesses and residential customers. Building out the network infrastructure in a way that creates excess capacity effectively reduces the marginal costs of connecting more business and residential customers near the build-out. All expansions of cable plant and investments in core network to serve newly profitable business customer opportunities directly benefit residential customers as well (through a faster core network and more homes passed). In a similar vein, the expansion of broadband to certain businesses within a footprint increases the likelihood of providing access to other business and residential customers in the future.[247]

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[246] Israel Decl. ¶¶ 181-86; Rosston/Topper Decl. ¶ 63.

[247] Israel Decl. ¶ 184.

The FCC has recognized that cable entry "foster[s] facilities-based competition in the enterprise market," and that this promotes "a long-standing goal."[248] As shown above, the transaction will increase competition in all business segments in multiple ways. This is an area of the communications marketplace that is in serious need of increased competition. The Commission can move the needle substantially in this regard by approving this transaction.

D. The Transaction Will Accelerate the Deployment and Adoption of Next-Generation Cable Advertising Technologies that Will Benefit Advertisers and Consumers.

The transaction will accelerate the expanded deployment and adoption of next-generation advertising technologies – notably (1) dynamic ad insertion for VOD and other platforms, and (2) addressable advertising – that will create new benefits for advertisers, content providers, and consumers alike.

***Dynamic Ad Insertion*.** Traditionally, VOD advertising was static and often became stale. The ads were inserted in programming in advance and could not later be modified, regardless of how long the VOD asset was available to consumers. Dynamic ad insertion transforms this platform by separating the ads from the programming stream and dynamically inserting them into VOD segments, and ultimately into other platforms like TV Everywhere (and even cloud DVR).[249] This technology thus allows advertisers to tailor their messages on this platform in a more timely manner, giving them more meaningful access to the increasingly large

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[248] *Applications Filed for the Acquisition of Certain Assets of CIMCO Commc'ns, Inc. by Comcast Phone LLC, Comcast Phone of Mich., LLC and Comcast Business Commc'ns, LLC*, Memorandum Opinion and Order and Order on Reconsideration, 25 FCC Rcd. 3401 ¶ 4 (2010) ("Comcast's acquisition of CIMCO's assets and expertise will result in significant public interest benefits, in part because the transaction will foster facilities-based competition in the enterprise market, a long-standing goal of the Commission."); *Applications Filed for the Transfer of Control of Insight Commc'ns Co. to Time Warner Cable Inc.*, Memorandum Opinion and Order, 27 FCC Rcd. 497 ¶ 23 (WCB 2011) ("[T]he proposed transaction likely will provide benefits to residential and business customers through the combined companies' increased ability to compete with the incumbent LEC in the provision of voice service and service bundles.").

[249] *See* Angelakis Decl. ¶ 41.

segment of consumers who engage in time-shifted viewing or view content using devices other than a traditional television (e.g., a computer, tablet, or smartphone).[250]

Comcast and TWC have both been developing and deploying dynamic ad insertion in VOD, online, and other platforms.[251] However, further investment and work is needed to make this platform more attractive to advertisers, by improving existing dynamic ad insertion technologies and unifying measurement metrics across platforms.[252] The transaction will help address these challenges and unlock the real potential for this new technology for three reasons.[253]

First, being able to spread the costs for this new technology over an expanded customer base will allow for greater investment in enhancing and further deploying this technology across multiple platforms.

Second, the combined company's increased scale will likely spur advertisers and ratings agencies to unite around common audience measurement and effectiveness tools for these new platforms and ad technologies. This, in turn, will create greater momentum for their adoption

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250 *See*, *e.g.*, Comcast Spotlight, Dynamic Ad Insertion: Unlocking the Value of Video on Demand, at 6, 9, http://www.comcastspotlight.com/takefive/assets/Take_Five_10_DAI_Webcast_FINAL.pdf. Nielsen estimates that between 2011 and 2013 the average time spent per adult per day watching time-shifted television has increased from 25 minutes to 32 minutes. Additionally, the time using the Internet, a smartphone, or a multimedia device has increased from 112 minutes to 130. *See* Nielsen Co., An Era of Growth: The Cross-Platform Report, at 9 (Mar. 5, 2014), http://www.nielsen.com/us/en/reports/2014/an-era-of-growth-the-cross-platform-report.html.

251 40 percent of Comcast's VOD viewing is in the C3 window. *See* Jeff Baumgartner, *Advanced Ads: 40% of Comcast VOD Viewing Is in C3 Window*, Multichannel News, Feb. 28, 2014, *available at* http://www.multichannel.com/distribution/advanced-ads-40-comcast-vod-viewing-c3-window/148580. Comcast had about 1 billion dynamic ad insertion impressions last year and expects to double this in 2014. *Id.*

252 *See* Leslie Ellis May, *Dynamic Ad Insertion and the Upfronts*, Multichannel News, May 19, 2013, *available at* http://www.multichannel.com/blogs/translation-please/dynamic-ad-insertion-and-upfronts.

253 *See* Jeff Baumgartner, *Mega-Merger Could Be A Boon for Advanced Ads*, Multichannel News, Feb. 24, 2014, *available at* http://www.multichannel.com/finance/mega-merger-could-be-boon-advanced-ads/148461 ("[T]he proposed Comcast-TWC deal could lead to seismic shifts in how programmers and operators buy and sell ads, and pave the way for a broader use of new technologies.").

and deployment.[254] As Drs. Rosston and Topper point out, despite the technical capabilities, uptake by content providers and advertisers of dynamic ad insertion has been far short of its potential "because viewer measurement tools that include VOD and alternate devices and could accurately value dynamic ad insertion on those platforms are not fully developed."[255] They further explain:

> With Comcast's increased scale and ability to offer more VOD advertising to more customers following the transaction, Comcast may be able to work more closely with ratings firms to accelerate development of measures that include VOD and alternate devices, which in turn would provide incentives for content providers and advertisers to take advantage of dynamic ad insertion in VOD content.[256]

Third, as discussed above, Comcast is a leader in VOD platforms and content. The transaction will extend Comcast's VOD and TV Everywhere platforms and digital rights to TWC's systems, particularly in the important markets of New York[257] and Los Angeles, creating additional cable advertising options in these Direct Marketing Areas ("DMAs").[258]

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254 *See* Rosston/Topper Decl. ¶ 145.

255 *Id.*

256 *Id.*

257 In the New York market in particular, the integration of TWC with Comcast Spotlight may also help the company build on complementary strengths in managing local "interconnect" advertising arrangements. Interconnects allow MVPDs to pool their advertising avails in an area and then offer them to advertisers. For example, using an interconnect, a car dealer, in one transaction, can schedule a commercial to run at the same time on the same channel on all participating MVPDs. The largest television market in the country, New York, has one interconnect managed by Cablevision that includes Cablevision and Comcast, and a quasi-interconnect (a joint sales agreement that does not easily allow for simultaneous insertion) managed by TWC. Following the transaction, Comcast intends to combine the two interconnects to serve advertisers better. In particular, a single interconnect would create efficiencies for local advertisers by allowing them to target virtually all MVPD households in the greater New York market with a single buy. The combined interconnect would also facilitate hyper-local advertising. Manhattan currently contains two local zones. Comcast's philosophy is to create smaller, more discrete zones. This would increase the number of local zones in Manhattan and benefit advertisers who want to reach hyper-local audiences. In addition, consolidation of a large base of the advertising technologies discussed above into one interconnect may help galvanize other interconnect participants to accelerate adoption of these technologies.

258 *See id.* ¶ 152.

While dynamic ad insertion will be of most interest to advertisers themselves, the increased deployment and uptake of this technology made possible by the transaction will yield benefits for content providers by allowing them to better monetize programming on VOD and other cable platforms, providing a new source of revenue to support high-quality programming and possibly even reducing pressure on license fees.[259] This, in turn, should help consumers by making it more likely that programmers can and will make more popular programming available, including "banking" entire past seasons on VOD to allow consumers to catch up, as USA Networks recently did with Suits.[260] As Drs. Rosston and Topper point out, if this proves successful and monetizable, "[a]dvanced advertising at the greater scale afforded by this transaction could result in consumers receiving discounted or free access to some of the same content they are purchasing elsewhere at a monthly out-of-pocket cost of $8-10/month."[261]

Addressable Advertising. Similar benefits may result with respect to addressable advertising technology.[262] Addressable advertising allows marketers purchasing advertising spots on cable network programs to augment geographic zone targeting (i.e., advertising targeted at specific zip codes or neighborhoods) with advertising targeted to individual households based on demographics and other household-specific characteristics.[263] The advertiser identifies the preferred demographics of its target audience, and then the cable operator targets ads to matching neighborhoods or households using various data, in compliance with the Cable Act's stringent

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259 *See id.*¶ 147.

260 *See* Jon Lafayette, *VOD Stunt Has Viewers Trying On USA's 'Suits'*, Broadcasting & Cable, Jan. 14, 2013, *available at* http://www.broadcastingcable.com/news/advertising-and-marketing/vod-stunt-has-viewers-trying-usas-suits/53067?nopaging=1.

261 Rosston/Topper Decl. ¶ 147.

262 *See* Ryan Joe, *CES 2014: Advances in Addressable TV*, Ad Exchanger, Jan. 14, 2014, http://www.adexchanger.com/digital-tv/ces-2014-advancements-in-addressable-tv/.

263 *See* Jeanine Poggi, *The CMO's Guide to Addressable TV Advertising*, Advertising Age, Feb. 19, 2014, *available at* http://adage.com/article/cmo-strategy/cmo-s-guide-addressable-tv-advertising/291728/.

privacy protections.[264] Addressable advertising offers important benefits to existing advertisers who can improve the efficiency and cost-effectiveness of their marketing efforts, and may provide a new option to advertisers that might not previously have considered the cable network ads because their products appeal to narrow, niche markets rather than a mass market.

The transaction will accelerate the deployment of addressable advertising not just due to the greater scale and investment potential discussed above,[265] but also for two additional reasons.

First, while Comcast has addressable ad technology that it is planning to roll out more widely by the end of 2014, TWC has not deployed addressable advertising on its platform. Accordingly, the transaction will extend Comcast's addressable ad technology and plans to the TWC systems.

Second, the expanded geographic reach of the combined entity will create attractive new options for advertisers to reach cable network audiences efficiently. As Drs. Rosston and Topper explain, "[a]dvertisers who seek to advertise to a television audience today generally purchase advertising time from cable and broadcast networks and sometimes supplement those purchases with a handful of spot market advertising purchased from local broadcast stations and aggregator

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264 *See* 47 U.S.C. § 551.

265 The advertising success of other technology-focused companies – with an even more expansive reach (and earlier start) than the combined company would have – underscores the benefits of scale for developing next-generation advertising technologies that enable more precise audience targeting. For example, Google's advantage in targeted advertising technology is well documented; it is recognized as "far and away the biggest player in the ad-tech industry," serving over 300 billion ad impressions per month. *See* Alex Kantrowitz, *Just Look At How Google Dominates Ad Tech: Rate New Data Shows Just How Big Google's Ad-Tech Advantage Is*, Advertising Age, Oct. 18, 2013, *available at* http://adage.com/article/digital/google-dominates-ad-tech/244824/. And the once nascent mobile advertising space has now seen huge growth thanks to efforts by Facebook and Google. *See* Victor Luckerson, *The Mobile Ad Market is Exploding Because of These Two Companies*, Time, Mar. 19, 2014, *available at* http://time.com/#30517/the-mobile-ad-market-is-exploding-because-of-these-two-companies/. Google netted 49 percent of all mobile ad revenue in 2013, and is projected to $14.7 billion in mobile ad revenue this year. *See Driven by Facebook and Google, Mobile Ad Market Soars 105% in 2013*, eMarketer, Mar. 19, 2014, *available at* http://www.emarketer.com/Article/Driven-by-Facebook-Google-Mobile-Ad-Market-Soars-10537-2013/1010690#EhhmEWkZ6Wje3rut.99. Facebook, with 172 million users in the U.S. and Canada alone, earned 53 percent of its ad revenue, or $1.37 billion, from next-generation mobile ads. *See id.*

NCC Media."[266] The "spot" cable advertising[267] available from NCC runs across a variety of MVPDs, many of which do not offer addressable advertising and other advanced capabilities. As such, "Comcast's greater geographic footprint and accelerated rollout of advanced advertising services resulting from this transaction will create an alternative for advertisers that want Comcast's targeted or addressable ad services in its markets and can accept the absence of full national reach."[268] Further, if the addressable advertising technology becomes more standardized, as it may once Comcast has invested in and developed it, and spreads across the industry, it will be increasingly interesting to advertisers, since addressability is more valuable as the target audience grows – i.e., with a bigger starting audience, a larger number of "hits" is likely.[269]

And when addressable technology is combined with the dynamic ad insertion capability described above, the enhanced value and benefits are particularly significant.[270] For the first time, advertisers of all types and sizes, including national advertisers, seeking to target customers with spot cable advertising in certain key markets across the country will be able to look to the

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[266] Rosston/Topper Decl. ¶ 151. NCC Media, a joint venture owned by Comcast, TWC, and Cox Cable, represents national spot ad sales for MVPDs in all 210 U.S. markets and reaches more than 80 million households. *See NCC Media – Local Hits the Spot*, AdWeek, Apr. 22, 2013, *available at* http://www.adweek.com/sa-article/ncc-media-148715.

[267] "Spot advertisers" are advertisers that buy advertising at a local Designated Market Area, zone, or subzone level. *See, e.g.*, *Spot Cable Advertising*, Comcast Spotlight, http://www.comcastspotlight.com/advertising-solutions/on-air/spot-cable (last visited Apr. 3, 2014).

[268] Rosston/Topper Decl. ¶ 152; *see also* Jeanine Poggi, *What Comcast-Time Warner Cable Means for Advertising: A Better Alternative for National Advertisers, More Reach for Addressable Ads*, Advertising Age, Feb. 14, 2014, *available at* http://adage.com/article/media/comcast-time-warner-cable-means-advertising/291713/ ("Acceleration of addressable advertising. One of the biggest obstacles to ad targeting at the household level has been a lack of broad reach, which makes running campaigns across multiple operators a clumsy and inefficient effort. The merger should eventually help expand the addressable universe to the kind of scale that advertisers desire and speed up advances in areas such as dynamic ad insertion.").

[269] *See* Rosston/Topper Decl. ¶ 149.

[270] Jeanine Poggi, *NBC Universal to Start Selling Addressable Ads in Video on Demand: 'NBCU+ Powered By Comcast' Will Expand VOD Addressability*," Advertising Age, Jan. 30, 2014, *available at* http://adage.com/article/media/nbcu-comcast-partner-advanced-advertising-product/291401/.

combined company to insert their timely, dynamic, addressable ads in a VOD asset or other platform.[271]

Finally, consumers not only will be able to enjoy additional highly popular content on this convenient platform as described above, but they will also receive advertisements, promotions, and discounts that are more relevant to them and their families.[272]

E. The Transaction Will Generate Other Significant Public Interest Benefits.

1. Consumers Will Benefit from the Extension to the TWC Systems of Various Commitments and Obligations in the NBCUniversal Order, as Well as Comcast's Best-in-Class Community Investment and Diversity Programs.

Additional benefits and protections will arise from the extension to the acquired systems of (1) various pre-existing obligations and other commitments developed in connection with the NBCUniversal transaction and (2) Comcast's best-in-class diversity and community investment programs.

The NBCUniversal transaction contained more than 150 conditions, including substantive subparts. As demonstrated in the last three annual compliance reports, and as detailed in Exhibit 9, in over three years, Comcast has had only one instance where the FCC took issue with the company's compliance, which was fully addressed by a voluntary consent decree.[273]

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[271] Rosston/Topper Decl. ¶ 145; *see* Jon Lafayette, *What a Comcast-TWC Merger Would Mean for the Rest of the TV Business*, Broadcasting & Cable, Feb. 17, 2014, *available at* http://broadcastingcable.com/sites/default/files/public/CommFeb17.pdf ("[T]he merger hastens tech innovation on the advertising front, as it 'eventually harmonizes 30 million households on a common ad tech platform.' That could enable addressable advertising and dynamic ad insertion in VOD, something that industry consortium Canoe Venture could never do . . . .") (quoting Tim Hanlon, CEO, Vertere Group).

[272] The transaction also will help support the development of interactive advertising, a technology which TWC has not previously prioritized due to the required investment. *See* Rosston/Topper Decl. ¶ 157. Bringing Comcast's efforts to develop interactive advertising technology to TWC systems will benefit both advertisers and consumers. *See id.*

[273] *See Comcast Corp.*, Order, 27 FCC Rcd. 6983 (EB 2012) ("*Comcast EB Consent Decree*"). Comcast promptly resolved the FCC's concern. Comcast had made a good faith effort to comply with the condition, but the FCC questioned the adequacy of the initial implementation of Comcast's standalone broadband obligation. In

Comcast otherwise consistently has met, and often exceeded, all of its commitments and obligations. And no serious objections have been filed – either on these reports or otherwise – regarding Comcast's compliance track record. Comcast intends to build on that record to bring new benefits to customers in TWC markets. Indeed, even when no longer mandated or required, many of these conditions and commitments have become part of Comcast's core business ethics and operations. Key benefits that will be extended to the acquired systems include:

Open Internet Commitment. As noted above, this transaction will extend the protections of the Open Internet rules that were rejected by the D.C. Circuit to millions of TWC customers, providing greater certainty for consumers and edge companies as the FCC considers a new legal framework.[274] Specifically, this Comcast commitment will extend the enforceable protections of the no-blocking and non-discrimination rules to millions of additional broadband customers.[275]

Standalone Broadband Commitment. Comcast is committed to offering consumers the option to procure their broadband service on a standalone basis. Indeed, this condition has become a core feature of Comcast's broadband business, with standalone broadband services vigorously marketed and selling well.[276] Thus, customers will have faster speeds, as well as the

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resolving the issue, Comcast agreed to extend the commitment to offer standalone broadband service at a specific price point for one extra year. Other than this, there were two disputes involving the conditions, both relating to interpretative issues – one with Bloomberg, as to the parties' different views of the neighborhooding condition, and one with Project Concord, as to the terms of its requested deal – neither of which resulted in the Commission finding or even suggesting noncompliance. *See Bloomberg v. Comcast Cable Commc'ns, LLC*, Memorandum Opinion and Order, 28 FCC Rcd. 14346 (2013); *Project Concord, Inc. v. NBCUniversal Media, LLC*, Order on Review, 27 FCC Rcd. 15109 (MB 2012) ("*Project Concord Order on Review*") (Commission review pending). A copy of the Comcast-NBCUniversal conditions is attached as Exhibit 10.

274 *See supra* Sections IV.B.1.b, V.C.1.b.

275 *See, e.g.*, *Comcast-NBCUniversal Order* ¶ 94. Further, this commitment is reinforced by Comcast's additional agreement not to offer "specialized services" for its own or a third party's content in TWC systems. *Id.* App. A § IV.E.

276 As of January 21, 2014, the aggregate number of standalone broadband lines Comcast provisioned was [[ ]] million, more than [[ ]] percent of Comcast's total residential broadband subscribers. Letter from Lynn R. Charytan, Senior Vice President, Legal Regulatory Affairs and Senior Deputy General Counsel, Comcast Corp., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 10-56 (Feb. 21, 2014).

assured flexibility to mix and match *any* speed of broadband with the services of Comcast, another video provider, or no traditional video service at all. Although TWC offers a standalone broadband option today, this commitment ensures that this option will continue to be offered and actively marketed in the TWC acquired systems.[277]

Program Access Commitment. NBCUniversal will continue to make its programming available to MVPDs at fair market value and on non-discriminatory terms. Notably, NBCUniversal has been able to successfully reach commercial agreements with multiple MVPD partners over the past three years; not a single MVPD has submitted a program access dispute to arbitration. As a safeguard, the NBCUniversal Conditions provide MVPDs the right to seek arbitration with respect to NBCUniversal networks in specific circumstances.[278] While not necessitated by this transaction, which involves relatively little new content, this same commitment and approach will be extended to TWC's controlled programming networks as appropriate; for example, TWC's controlled RSNs will be subject to standalone arbitration.[279]

Online Video Commitment. NBCUniversal is committed to working with online video distributors ("OVDs"), and developing mutually advantageous distribution deals.[280] The NBCUniversal Condition allowing OVDs to demand, and, if necessary, arbitrate over access to NBCUniversal programming networks in certain circumstances will apply to TWC's controlled programming assets as appropriate – though, again, nothing in this transaction creates any new issues in this regard. In addition, TWC's carriage agreements, to the extent they remain in place

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277 This commitment has subsequently been reinforced – and, with respect to training, expanded. *See Comcast EB Consent Decree*.

278 *See Comcast-NBCUniversal Order*, App. A § II.

279 *Id.* App. A § VII; *see also* discussion *infra* Section V.C.3.

280 For example, NBCUniversal has entered into or renewed agreements with several OVDs, including, among others, Amazon, Drama Fever, Hoopa, Netflix, and Sensio. *Third Annual Compliance Report*, at 3-4; *see also* discussion *infra* Section V.D.2.

following the transaction, would be subject to prohibitions against practices that unduly influence or unfairly limit the provision of the acquired programming to OVDs.[281]

Broadband Adoption Commitment. This condition will have expired prior to the consummation of this transaction. However, as discussed above, Comcast has already improved and committed to extend its very successful *Internet Essentials* program for broadband adoption, and will expand it to TWC territories, enhancing opportunities for low-income families across the combined company's footprint.[282]

Broadcast Commitment. Comcast is proud of its close relationships with affiliated and unaffiliated local broadcast stations, and the commitments captured by letter agreements with both the NBC Television Affiliates Association and the ABC/CBS/Fox Television Affiliates Associations.[283] The concerns underlying many of those provisions have proved unfounded, as Comcast enjoys positive relationships on all sides in retransmission consent and affiliation agreement negotiations.[284] Nevertheless, these commitments will continue to apply and will extend to the TWC markets. Specifically, Comcast maintains separation between its cable and broadcast businesses with respect to NBCUniversal's negotiation of retransmission consent agreements with MVPDs, NBCUniversal's negotiation of affiliation agreements with local broadcast stations, and Comcast's negotiations of retransmission consent agreements with broadcast stations. Moreover, Comcast Cable has committed not to import distant NBC

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281 *See Comcast-NBCUniversal Order*, App. A § IV.A, G.

282 *See id.* App. A § XVI; *see also supra* Section IV.B.2.d.

283 *See Comcast-NBCUniversal Order*, App. F.

284 Indeed, over the past three years, Comcast has not been party to any retransmission consent disputes resulting in a blackout with respect to its cable or broadcast properties.

broadcast network signals into an affiliate's market where retransmission consent negotiations have failed.

Other Programming Commitments. Comcast has dedicated considerable resources to expanding access to local programming and children's VOD content, and to empowering parents. And Comcast will approach the acquired systems with the same goals, though some of these may require more time and technological development to incorporate fully in TWC systems. These include:

- Making available broadcast content in the acquired TWC systems at no additional charge on Comcast's VOD.
- Expanding VOD programming choices that appeal to children and families.
- Providing improved on-screen program ratings icons.
- Restricting the use of "Interactive Advertising" in programming produced primarily for children.

Non-Commercial Educational ("NCE") Station Carriage Commitment. Comcast is obligated to continue carrying qualified NCE and local NCE stations that had must-carry rights as of December 31, 2010 and relinquish their broadcast spectrum. NCE stations in the acquired systems will enjoy this protection as well,[285] affording such broadcasters the opportunity to both participate in the FCC's upcoming incentive auction and to continue to deliver important local programming to their local communities.

Diversity Commitments. The transaction will promote significant diversity interests in the TWC markets, because Comcast will extend its best-in-class diversity program to the acquired systems and networks and will incorporate and build upon those TWC programs that would enhance Comcast's own diversity practices.

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[285] *See Comcast-NBCUniversal Order*, App. A § XV.

Diversity is part of Comcast's corporate DNA. As detailed in Exhibit 11, Comcast is recognized nationally for its commitment to promoting diversity.[286] For the past several years, its diversity program has been enhanced by a variety of commitments memorialized in three Memoranda of Understanding ("MOUs") with diverse leadership organizations in 2010 in connection with the NBCUniversal transaction.[287] Those voluntary undertakings span five key focus areas across all aspects of the company's business: (1) governance, (2) workforce recruitment and retention, (3) procurement, (4) programming, and (5) philanthropy and community investment. Comcast's progress and accomplishments in its diversity and inclusion programs are detailed in the company's annual Corporate Social Responsibility Report.[288] The first report after consummation of the transaction will include TWC's operations.

Since approval of the NBCUniversal transaction, Comcast has made demonstrable progress toward these goals, in many cases exceeding its commitments and expanding upon them with new or modified initiatives. That focus and progress will continue with respect to the expanded, post-transaction company, bringing concrete benefits to the TWC markets.

a) *Governance*. Comcast's Board of Directors is one-third diverse, including representation of people of color and women. In addition, Comcast and NBCUniversal each have an executive Internal Diversity Council to provide oversight and guidance on development and implementation of diversity and inclusion strategies across the company. These executive councils meet separately and jointly; further, several business units within the company also have diversity councils or committees participating directly in diversity initiatives. In addition, for the past three years, Comcast has received advice and guidance

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[286] *See also* Eric Lipton, *Comcast's Web of Lobbying and Philanthropy*, N.Y. Times, Feb. 20, 2014, *available at* http://www.nytimes.com/2014/02/21/business/media/comcasts-web-of-lobbying-and-philanthropy.html?_r=0; *Awards & Recognitions*, Comcast Corp., http://corporate.comcast.com/news-information/awards-and-recognition (last visited Apr. 3, 2014) (listing awards, recognitions, and honors received by Comcast and its leadership).

[287] *See Comcast-NBCUniversal Order*, App. G.

[288] *2012 Corporate Social Responsibility Report*, Comcast Corp., http://corporate.comcast.com/images/Comcast_NBCUniversal_CSR_2012.pdf ("*2012 Corporate Social Responsibility Report*").

from the Joint Diversity Advisory Council ("Joint Council"), a unique external advisory group consisting of more than 40 nationally recognized advisors on diversity from business, community-based organizations, and the media/entertainment industry, representing a broad spectrum of diverse constituents and perspectives. The company ensures transparency and measurement of progress through rigorous benchmarking and reporting processes, including regular reports to the Board, Internal Diversity Councils, and external Joint Council.

Within 120 days of the close of the transaction, Comcast will develop a new master strategic plan that will set forth the vision and goals for the combined company's (including TWC's) diversity programs, similar to the plan adopted shortly after the NBCUniversal transaction closed. The new plan, like the existing plan, will be formulated with the advice of the Joint Council. This transaction will afford Comcast the opportunity to ensure that the best and most effective approaches to governance for diversity and inclusion are deployed throughout the combined company by extending Board, executive Internal Diversity Council, and Joint Council review to TWC systems.

b) *Workforce Recruitment and Retention.* Comcast approaches workforce diversity issues with a broad range of initiatives designed to increase diversity at all levels of the workforce, with a particular emphasis on hiring, promoting, and retaining diverse leaders. Since the closing of the NBCUniversal transaction, the numbers of people of color and women have increased among the Comcast's executive leadership, vice president and above ("VP+"), and director levels, and in the full-time US workforce overall. Of all the VP+ positions added to the workforce since year-end 2010 and year-end 2013, 40 percent were filled by people of color and 57 percent by women. More specifically, the number of people of color at the VP+ level increased by 111 (or 32 percent), which drove a corresponding increase in their proportional representation to 18 percent of the company's total VP+ population at year-end 2013. During the same time, the number of women at the company's VP+ level increased by 157 (or 21 percent), which also drove an increase in their proportional representation – to 36 percent of the VP+ population.

This has been accomplished through the company's multifaceted approach to recruitment, leadership training programs, and innovative engagement initiatives, all aimed at attracting and developing a diverse talent pipeline. In terms of senior leadership, the company requires at least one candidate of color on all hiring slates for positions at and above VP levels. And, to ensure accountability, progress on diversity initiatives is a component of Comcast's bonus determinations at the executive level.

Comcast is prepared to extend its workforce (and other) diversity commitments to TWC properties. As part of developing the TWC master strategic plan for the company's workforce, noted above, Comcast would, for example:

- Analyze TWC's talent acquisition, development, and promotion, employee engagement practices and programs, and the overall workforce diversity metrics, and identify potential areas for action.

- Develop a plan to build on TWC's positive workforce initiatives and integrate them into Comcast's approach to practices and programs.

- Identify specific initiatives and aspirational goals, with quantifiable steps, to increase diversity in the leadership ranks and overall employee base.

    - These proven methods for creating a culture of inclusion and driving workforce diversity have been recognized time and again. While a complete list of awards is attached as Exhibit 11, it bears noting that Comcast tied for first among Women in Cable Telecommunications' 2013 Best Operators for Women in Cable (NBCUniversal was the top programmer in the same survey); has been named among the "Top 50 Companies for Diversity" by *DiversityInc* magazine; and has received the New York Urban League's 2013 "Champions of Diversity" Award; ranked third in the 2013 LATINA Style 50 Report; and earned a 100% score on the Human Rights Campaign's 2014 Corporate Equality Index.

    - In addition, Comcast is a leader in supporting and honoring the serving military and in hiring the nation's veterans. Over the last 12 months, Comcast has hired over 1,400 veterans company-wide and has supported their career development through our VetNet employee resource group. Comcast has been recognized as a 2012 G.I. Jobs Top 100 Military Friendly Employer and a 2013 *US Veterans Magazine* Top 100 Best of the Best Veteran Friendly company, and is a recipient of the 2012 U.S. Chamber of Commerce Foundation's Lee Anderson Award for its commitment to veteran employment and support as a key partner in their national "Hiring our Heroes" initiative.

The TWC systems, employees, and customers will benefit significantly from the extension of Comcast's comprehensive diversity program.

c) *Procurement*. Comcast's vendors will have more opportunity to do business with the combined company and increase prime vendors (i.e., Tier I) spend. In addition, the combined company will be able to expand opportunity for diverse subcontractors (i.e., Tier II). In the NBCUniversal transaction, Comcast committed to expand its supplier diversity program to increase the amount spent with Tier I and to expand its Tier II program. The company has demonstrated the seriousness of its resolve to create more opportunities for diverse suppliers, increasing its total Tier I spend with diverse suppliers to over $1.3 billion in 2013 alone – a 44 percent increase since the year before the NBCUniversal transaction.

Over the course of three years, Comcast has spent almost $3.2 billion with diverse Tier I vendors. Since Comcast formally launched its Tier II program in 2012 and over the course of the two years ending 2013, prime suppliers have reported over $325 million in diverse Tier II subcontracting, including $186 million in 2013 alone. Comcast's supplier diversity program has been recognized by *Black EOE Journal*; *Hispanic Network Magazine*; *Professional Women's Magazine*; and *U.S. Veterans Magazine*.

TWC has a supplier diversity program as well, and Comcast will combine the best aspects of both companies' programs to drive increased opportunities for diverse vendors.

d) *Programming*. Since the NBCUniversal transaction, Comcast has met its commitment to expand minority-focused programming, increasing the amount, quality, and diversity of national and local programming for its customers across its platforms. For example, in the last three years, Comcast has launched four independent networks with Hispanic American or African American ownership or management. In addition, Comcast has expanded the distribution of diverse African American, Asian American and Hispanic content:

- Comcast expanded distribution of The Africa Channel in the Detroit, Chicago, and Washington, D.C. markets. Comcast also launched The Africa Channel in its Northern Santa Barbara County, Savannah, Charleston, and South Florida markets, growing the network's audience by more than 2 million homes.

- Comcast expanded carriage of TV One on its Xfinity TV lineup, making it available to over 600,000 additional customers in the Chicago and Miami markets.

- Comcast announced a significant new carriage agreement with Mnet, the only 24/7 English-language nationwide television network in the U.S. targeting Asian Americans and fans of Asian pop culture, and subsequently extended carriage of Mnet to millions of additional Comcast subscribers in the San Francisco, Chicago, Sacramento, Boston, Washington, D.C., and Philadelphia DMAs in 2012. Comcast also launched MYX TV, a channel made for and by Asian Americans, in Seattle and western Washington.

- Comcast extended distribution of seven Hispanic programming services (Azteca America, Galavisión, HITN, LATV, nuvoTV (formerly SíTV), Telefutura, and Univision) by more than 14 million subscribers. With this accomplishment, Comcast exceeded by more than 40% its commitment to expand carriage of three Hispanic networks by 10 million subscribers.

- Comcast fulfilled its commitment to launch a package of 40 to 60 Spanish-language channels in all major Hispanic markets, including Northern California, Houston, South Florida, Chicago, Boston, Philadelphia, Washington, D.C., Denver, Salt Lake City, and Atlanta.

Comcast also has expanded the quality and quantity of diverse programming available through its VOD and online platforms – increasing the number of diverse VOD hours by more than 270 percent and the number of diverse online hours by nearly 170 percent over the past three years. These results are driven by the launch of new diverse-oriented VOD services, including Black Cinema On Demand, Hispanic Cinema On Demand, and Cinema Asian America, and the launch of first-of-their-kind, online destinations for entertainment and news for diverse audiences, such as Celebrate Black TV, Xfinity Latino, Xfinity Asia, and Xfinity TV LGBT.

With this transaction, Comcast will commit to use its VOD and Online platforms to feature Telemundo programming and increase the number of Telemundo and mun2 VOD choices, as well as other diverse VOD content, available to customers in the acquired TWC systems, as soon as TWC's VOD content and delivery platforms can be upgraded.

NBCUniversal has also undertaken initiatives intended to increase news, information, and entertainment choices for diverse viewers. The new NBCNews.com features a new microsite focused on original reporting and analysis relevant to the Latino community (www.nbcnews.com/news/latino), and will soon launch an additional microsite dedicated to serving the Asian Pacific Islander community. By integrating these microsites into the main site, that coverage will benefit from greater exposure to the broader NBCNews.com audience and the more significant promotion of the NBCNews.com site.

NBCUniversal has long been a leader in offering diversity development programs to improve the interest and presence of diverse writers, directors, journalists, and on-screen personalities. Under Comcast's leadership, NBCUniversal has added even more signature programs. Highlights include:

- Universal Pictures Emerging Writers Fellowship is designed to identify and cultivate new and unique voices with a passion for storytelling in the context of film. Emerging writers who are chosen to participate in the program will work within the studio to hone their skills and gain access and exposure to Universal executives, producers, and other key industry professionals.

- The Writers on the Verge program focuses on grooming diverse writers not just for NBCUniversal but for the entire television industry. More than 50% of Writers on the Verge alumni are currently staffed on television shows across the industry landscape (alumni write for NBC

shows such as "The Blacklist", "Dracula", "Chicago Fire", and "Chicago P.D." Alumni write for USA Network series "Burn Notice & Suits" and for the Universal Television production "Brooklyn Nine Nine."

- The Diverse Staff Writer Initiative gives writers from diverse backgrounds an entrée into the writers' room. The program encompasses NBC's late-night programs, in addition to prime-time scripted programs from NBC, USA and Syfy. Participants are selected and hired by the showrunners/producers of each show, with the guidance of the network and studios. The program has launched the careers of many talented writers in the past 13 years, including Mindy Kaling ("The Office," "The Mindy Project") and Donald Glover (writer on "30 Rock," and later talent on "Community").

- The Late Night Writers Workshop is designed for up-and-coming sketch and comedy writers to learn about NBCUniversal's late night line-up, gain insight into the dynamics of a late night writers' room, and provide insights on securing a staff writer position.

- The Casting Apprentice Program is a rotational program designed for individuals with diverse backgrounds who aspire to join a casting office.

- The Director Fellowship Program gives well-established directors from the worlds of music video, commercials, and theater and gives them a chance to shadow directors of episodic television, and learn the craft. In the last two years the program has seen three directors had their first episodic directing assignments on "Parenthood," "Grimm," and "Community" through the program.

- The NBC News Associates Program is dedicated to identifying outstanding aspiring journalists. In 2011, this program was extended to the newsrooms of NBC Owned Television Stations and CNBC. In keeping with NBCUniversal's strong commitment to develop a diverse editorial staff across NBC News assets, the News Associates program is designed to attract candidates from diverse racial, ethnic, economic and geographical backgrounds, as well as candidates with disabilities.

- The Reporter Training Program is aimed at developing talented young on-air journalists from diverse backgrounds. Participants, who are selected annually, must hold a bachelor's degree in Journalism, Communications, or a related field and have a minimum of one to two years of experience in the news room or on-air reporting television news.

- The News Summer Fellowship Program gives paid internships for nominees from the National Association of Black Journalists (NABJ), National Association of Hispanic Journalists (NAHJ), and Asian

American Journalists Association (AAJA). Participants are college sophomores or above who are members of NABJ, NAHJ, or AAJA.

NBCUniversal has been recognized for its exemplary commitment to diverse programming. For example, MSNBC received a Diversity and Inclusion Award in the Media category; USA Network was honored with the American Association of People with Disabilities Image Award for its work to promote equal rights and opportunities for people with disabilities; on the National Latino Media Council 2011 Network Diversity Report Card, NBCUniversal earned an A+ for "Actors: On-Air Primetime Reality Shows" and an A in the "Entertainment Creative Executives" category; and the 25th Annual GLADD Media Awards included 16 NBCUniversal nominees.

e) *Philanthropy and Community Investment*. In 2010, Comcast and NBCUniversal committed to increase aggregate cash support to minority-led and minority-serving ("MLMS") organizations by ten percent per year in 2011, 2012, and 2013. The company significantly exceeded this commitment, increasing its cash spending to diverse communities MLMS organizations by more than 100 percent over the three-year period. Comcast achieved this unprecedented level of support for MLMS institutions, in part, through the extensive activities and programs of the Comcast Foundation, led by the corporate team, but extended throughout Comcast's footprint by the cable divisions and NBCUniversal's MLMS giving. This included extensive outreach to and work with the company's community partners, as well as the important work of its signature programs. In addition to *Internet Essentials*, discussed above, some other examples of our deep community roots include: [289]

- Comcast Cares Day: This is the largest single-day corporate volunteer effort in the nation. In 2013, more than 85,000 volunteers participated in over 750 project sites, contributing their time and energy to clean up parks, make over schools, and landscape playgrounds.

- Comcast Leaders and Achievers: Now in its 13th year, the Comcast Leaders and Achievers® Scholarship Program recognizes high school seniors for their community service, academic achievement and leadership skills. Funded through the Comcast Foundation, the program recognizes high school seniors from Comcast communities for their commitment to community service, academics and demonstrated leadership. To acknowledge these accomplishments, Leaders and Achievers are awarded one-time scholarships, with a base award of $1,000. Since 2001, Comcast has awarded close to $20 million in scholarships to nearly 20,000 students. More than 950 scholarships awarded last year benefitted students from diverse backgrounds.

[289] *See 2012 Corporate Social Responsibility Report.*

- Digital Connectors: The Comcast Digital Connectors program trains youth from primarily diverse, low-income backgrounds in Internet and computer skills. Teens meet weekly after school, have the option to earn a Cisco IT Essentials certification of completion, and receive a complimentary laptop upon graduation from the program. Comcast Digital Connectors is also a community service program, as participants volunteer at senior centers, churches, local schools and other community organizations, spreading digital literacy in their communities. Since the program began, more than 2,000 Digital Connectors have participated, volunteering more than 100,000 hours to bridge the digital divide in their communities. Through training and service, Comcast Digital Connectors is preparing today's youth for the jobs of tomorrow.

- United Way: Each year, Comcast and NBCUniversal employees rally around our communities by supporting United Way. Through an annual employee giving campaign, company employees pledged nearly $6.4 million to United Way during the 2013 campaign. Not only did the company employees break the company record for dollars pledged, with year-over-year, double-digit growth, the campaign also had record-breaking employee participation. Combined with matching Comcast Foundation grants, the campaign will provide almost $8 million next year to local United Ways and affiliate organizations across the country – taking us beyond $50 million in total historic support to United Way.

- The company supported more than 50 teams around the country competing in the FIRST Robotics Competition and introduced the Comcast and NBCUniversal Media and Technology Innovation Award.

- The NBCUniversal Foundation partnered with our NBC Owned Television Stations division last year to launch 21st Century Solutions, a competitive grant program that supports innovative, high-impact social entrepreneurship projects. The company awards grants to nonprofit organizations in seven categories: arts and media, civic engagement, community development, education, environment, jobs and economic empowerment, and technology. The competition took place in ten major U.S. cities, with one winning organization and two runners-up in each market, for a total of $1.2 million shared among 30 organizations. Winners included a micro-savings initiative aimed at helping low-income working families develop strong financial habits and an employment program that helps expand work opportunities for disabled youth.

For the first time in 2013, The Civic 50 has recognized Comcast's community investment achievements. In addition, Comcast has received awards from the United States Hispanic Chamber of Commerce, United Way Worldwide, and the Congressional Black Caucus Foundation.

Moreover, in 2011, Comcast Ventures established a $20 million venture capital "Catalyst Fund" for investments in early-stage ventures led by diverse entrepreneurs with innovative technology ideas and solutions that fit within its investment focus. The Fund's goal is to create the most diverse and valuable early stage portfolio in the venture industry.

The Catalyst Fund's first investment was in the startup accelerator DreamIt Ventures, which operates DreamIt Access, a concentrated effort to increase the number of high-value, minority-led tech startups. During this three-month program, participating startup companies receive seed funding and access to DreamIt Ventures' benefits and services, including business talent, legal and accounting services, mentoring, office space, guidance from leading business visionaries, and contacts to reach the next level of development. In addition, DreamIt Access offers mentors, special events, and advisors with a particular interest in increasing the number of successful minority-led startups.

Through its DreamIt Access partnership, the Catalyst Fund has sponsored 20 minority-led startups since 2011, sixteen of which are still operating. The majority of these companies are focused on web and mobile technologies. In January 2014, Comcast Ventures announced its commitment to support the DreamIt Access track for two more years, with the ability to support up to 20 minority-led companies over the course of four cycles.[290]

In addition, the Catalyst Fund has made direct investments in seven minority-led startups:

- ElectNext, a political data analysis firm (Philadelphia Fall 2011 DreamIt participant) (August 2012);
- Quad Learning, an online two-year honors program for community and junior college students to enhance their college transfer options (January 2013);
- Reactor, Inc., a speech enabled news assistant for mobile devices firm (New York Summer 2012 DreamIt participant) (March 2013);
- Loverly, an online wedding discovery and inspiration site (May 2013);
- Viridis Learning, an educational and technology company combining workforce education and human capital solutions for the middle-class workforce (June 2013);

[290] *See* Press Release, DreamIt Ventures, DreamIt Ventures & Comcast Ventures Sign Two-Year Partnership to Support Minority-Led Startups in New York & Philadelphia (Jan. 20, 2014), http://www.dreamitventures.com/nyc2014announcement/.

- Maker's Row, an online marketplace for connecting designers with American-based factories (July 2013); and
- Mercaris, a market data service and online trading platform for organic, non-GMO, and certified agricultural commodities (October 2013).

To ensure that both companies' community partners enjoy the full benefit of the transaction, Comcast's community-focused ethos and programs will extend to the TWC markets and will honor and build upon TWC's existing partnerships and programs.[291]

2. The Transaction Will Generate Significant Public Interest Benefits for People with Disabilities.

Both Comcast and TWC have been deeply committed to providing accessible solutions to customers with disabilities. TWC currently supports many accessibility services, including, among other things, closed captioning on its TWC TV apps on a wide range of device platforms,[292] voice-to-text features for its phone services,[293] and large-button remote controls.[294] And, as discussed below, Comcast has undertaken a host of technology and other initiatives over the past several years that have made it an industry leader in this area. Following the transaction, Comcast will be able to bring its leadership to bear, building upon TWC's strong foundation to deploy new assistive technologies and support to TWC customers. As TWC systems are

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[291] *See, e.g.*, Connect a Million Minds, http://www.connectamillionminds.com/about (last visited Apr. 1, 2014).

[292] *See, e.g.*, *Is Closed Captioning Enabled on the TWC TV for iPad App?*, Time Warner Cable, http://www.timewarnercable.com/en/residential-home/support/faqs/faqs-tv/twctvapp/twctvforip/is-closed-captioning-supported.html (last visited Mar. 30, 2014). The TWC TV apps on the following devices support closed captioning: iPhone, iPad, iPod Touch; Android Smartphones & Tablets; Kindle Fire HD/HDX; Roku Streaming Players (generations 2 & 3); Xbox 360; and Samsung Smart TV (2012 – 2014 models). Captioning also is supported on PCs via TWCTV.com.

[293] *See Voice Zone from TWC*, Time Warner Cable, http://www.timewarnercable.com/content/twc/en/residential-home/phone/features/voicezone.html (last visited Mar. 30, 2014).

[294] *See Solutions for Everyone*, Time Warner Cable, http://www.timewarnercable.com/en/residential-home/support/accessibility.html (last visited Mar. 30, 2014) (detailing accessibility solutions on TWC systems). TWC also has been a strong advocate for expanding broadband access for persons with disabilities. *See, e.g.*, Krishna Jayakar, *Between Markets and Mandates: Approaches to Promoting Broadband Access for Persons with Disabilities* (Fall 2012), *available at* http://www.twcresearchprogram.com/pdf/TWC_Jayakar.pdf.

integrated, technically and operationally, into Comcast's network, customers across the newly expanded footprint will be able to enjoy the benefits of Comcast's accessibility innovations.

Comcast has made accessibility an integral part of its businesses. The company's goal is a "Smart Home for Everyone," where accessibility is enabled across products and services, regardless of platform. To that end, Comcast has established an office dedicated full-time to accessibility that is responsible for coordinating accessibility efforts throughout the company and with the disability community.[295]

A key tool of this dedicated office and team is the Comcast Accessibility Lab. The Lab is used by Comcast's product development teams to incorporate assistive technologies into new products and services. It also is utilized for focus groups and usability testing with consumers and to help educate Comcast's employees about accessibility. Comcast supplements these product development activities with regular outreach to the disability community. These activities are producing a wide range of innovative accessibility solutions. For example, in the cable space, Comcast is leveraging the X1 cloud-based platform to deliver the first "talking guide" in the MVPD industry. Comcast demonstrated this voice-guided navigation feature at the 2013 Cable Show, and the feature will be trialed in several markets later this spring with the goal of broader deployment later in 2014. The talking guide feature assists a blind or visually-impaired customer in navigating around the X1 TV user interface and selecting particular services for use. If the customer navigates to the program guide, she will be provided with an aural version of the guide information for a particular program that is included on the display,

[295] These activities cover all phases of product development, deployment, and consumer interaction, from engaging people with disabilities to drive a customer-informed accessibility strategy; to working with Comcast's design and development teams to integrate accessibility into Comcast's products and services; to helping Comcast's business units deliver feature-rich, accessible services into the marketplace; to maximizing customer care services aimed at ensuring that customer questions and concerns related to Comcast's accessibility features are promptly resolved.

such as the network name, the channel number, the title of the program, and any rating information.[296]

The X1 platform will also simplify the process for activating accessibility features. For example, the remote control for the X1 platform – known as the XR2 – includes "soft keys" that a customer with a disability will be able to configure to enable quick access to the talking guide and other accessibility features, such as closed captioning and video description.[297] The X1 user interface also provides for simple navigation to accessibility features, including allowing the customer to activate closed captioning and video description services via the main Settings menu on the user interface and configure enhanced caption features, such as font and color, via the Closed Captioning Settings menu.[298] Comcast also is enabling a similar user experience on Xfinity applications used to access Comcast's IP cable and TV Everywhere services on third-party consumer electronic devices, including tablets, smartphones, and desktops. Comcast will be able to extend the benefits of these accessibility features to customers in the TWC systems as those systems are upgraded to support the X1 platform.

Comcast is providing innovative accessible solutions across other service areas as well. For example, as noted above, Comcast has deployed a Readable Voicemail service that converts voicemail audio into text and aids deaf and hard-of-hearing customers in accessing their voicemail. And, with respect to online services, the Xfinity Connect Mobile App, which enables

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[296] Comments of Comcast Corp., MB Docket No. 12-108, at 4 (July 15, 2013); Letter from James R. Coltharp, Comcast Corp., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 12-108, at 1 (Aug. 1, 2013) ("*Talking Guide Letter*").

[297] *See Talking Guide Letter*, at 1.

[298] *See Setting up Closed Captioning with the XFINITY TV on the X1 Platform Guide*, Comcast Corp., http://customer.comcast.com/help-and-support/cable-tv/turning-closed-captioning-on-or-off/#Sett (last visited Mar. 30, 2014).

access to email, text, and other online services on tablets and smartphones, is screen reader-enabled for blind and low-vision users.[299]

Comcast also is focused on ensuring a high-quality experience for its interactions with customers with disabilities. The company has established a dedicated customer support team of 22 agents in the new Comcast Accessibility Center of Excellence.[300]

In addition, Comcast is deploying a number of innovative solutions to ensure that its accessibility features work properly. For example, the caption compliance testing program that Comcast adopted for its set-top boxes has shortened quality control testing cycles for new box models from several weeks to a matter of days. Comcast also has started deploying a first-of-its-kind network monitoring tool that enables it to detect remotely when cable program streams are non-compliant with industry standards for closed captioning and video description. Comcast engineers are alerted when these monitoring "probes" detect a problem, thereby giving the company the ability to proactively troubleshoot these issues and quickly mitigate customer-impacting closed captioning and video description impairments and service interruptions. These equipment testing and monitoring activities can be expanded to TWC systems as those systems are integrated into Comcast's network.

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[299] It also bears noting that NBCUniversal is an industry leader in providing closed captioning for online content. NBCUniversal captioned online video well before the Commission required such captioning, and also voluntarily captions an unprecedented amount of online content not subject to the Commission's rules, such as news clips on the NBC News and Today Show websites and Internet-only video feeds for the 2014 Sochi Olympics. *See* Tom Wlodkowski, *Bringing the Olympic Experience to More People in More Ways Than Ever Before*, Comcast Voices (Feb. 10, 2014), http://corporate.comcast.com/comcast-voices/bringing-the-olympic-experience-to-more-people-in-more-ways-than-ever-before (also noting that NBCUniversal will broadcast over 50 hours of the Sochi Paralympics and that the full NBC Sports Network Paralympics primetime show will be available on Xfinity On Demand, Xfinity.com/TV, and the Xfinity TV Go app the next day).

[300] *Accessibility Services for Customers with Disabilities*, Comcast Corp., http://customer.comcast.com/help-and-support/account/accessibility-services (last visited Mar. 30, 2014).

As the foregoing demonstrates, Comcast is strongly committed to providing accessible services and products to its customers. The transaction thus presents a singular – and unparalleled – opportunity to accelerate the deployment of accessible technology, customer care, and disability inclusion to tens of millions of consumers in the TWC footprint.

3. The Transaction Will Enhance Cybersecurity for the Combined Entity's Network and Customers, as Well as the Overall Broadband Ecosystem.

The transaction will enable the combined company to invest additional resources in cybersecurity efforts and extend the reach of Comcast's industry-leading approach to cybersecurity and its use of advanced cybersecurity technologies. Comcast has increased its investment in security assets and resources by over 300 percent in the last four years. Comcast was the first large ISP in North America to fully implement Domain Name System Security Extensions ("DNSSEC"), which provides an enhanced level of Internet security.[301] Comcast also is the largest ISP to deploy native IPv6 support, the next generation of IP addressing with improved security elements, to 100 percent of its network.[302] This transaction will extend the reach of DNSSEC and IPv6 to all the TWC systems, thereby enhancing cybersecurity protections to more networks and to many more American consumers and businesses.

Comcast operates a centralized security organization that oversees the full array of the company's cybersecurity resources and policies, including risk management, security architecture and engineering, security operations and tools, vulnerability assessment and penetration testing, forensics and intelligence gathering, and identity management and access

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301 *See* Jason Livingood, *Comcast Completes DNSSEC Deployment*, Comcast Voices (Jan. 10, 2012), http://corporate.comcast.com/comcast-voices/comcast-completes-dnssec-deployment.

302 *See* John Brzozowski, *Comcast Launches IPv6 for Business Customers*, Comcast Voices (Apr. 29, 2013) http://corporate.comcast.com/comcast-voices/comcast-launches-ipv6-for-business-customers.

controls. An internal 24x7 security response and operations center enforces the company's policies governing the use of network infrastructure, employing a defense-in-depth strategy that provides layered redundancies that operate as security fail-safes. Comcast also has invested heavily in network sensors, threat intelligence-gathering capabilities, and internal cybersecurity forensics, enabling the company to engage in pattern-based detection and other threat-monitoring measures that strengthen its defenses in the constantly changing cyber threat landscape. These capabilities help repel sophisticated cyber incursions. This proven security organization would be expanded and extended across the combined company's footprint.[303]

In addition to providing advanced security for the protection of broadband network assets, the transaction will benefit TWC's broadband consumers by providing them with new, more robust tools and capabilities to protect against cyber threats. Offered free to all customers, Comcast's Constant Guard security suite is the nation's most advanced and comprehensive consumer-facing cybersecurity product. Constant Guard offers a multi-layered, holistic approach to Internet security that combines extensive technological resources, including anti-phishing and anti-spyware technology, secure data backup, identity protection, anti-botnet tools, DNS security, and privacy protection tools, with an extensive educational program, and strategic partnerships with industry experts.[304] In addition, Comcast's Customer Security Assurance

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303 Customers of the merged entity will benefit from Comcast's commitment to utilize the Cybersecurity Framework, which was recently published by the National Institute of Standards and Technology ("NIST"). *See* Press Release, Nat'l Inst. of Standards & Tech., NIST Releases Cybersecurity Framework Version 1.0 (Feb. 12, 2014), http://www.nist.gov/itl/csd/launch-cybersecurity-framework-021214.cfm. The NIST Framework is an excellent resource and a comprehensive compendium of sound and effective cyber defense processes, practices, and protocols available today. In conjunction with developing the appropriate cyber defense components of the integration plan for the Comcast and TWC networks, Comcast anticipates using the Framework Core as one of the reference tools to help manage the cybersecurity risks and threats it faces going forward.

304 *About Constant Guard*, Comcast Corp., http://customer.comcast.com/help-and-support/internet/constant-guard/ (last updated Jan. 28, 2014, 9:17 PM).

organization assists customers with potential cybersecurity issues to ensure a safe and secure online experience.

Comcast also provides separate botnet notifications to potentially infected customers, irrespective of whether they obtain Constant Guard.[305] Further, Comcast has made additional investments in network technologies that protect consumers, deploying advanced inline malware detection that protects the network from infection by detecting and containing malicious network traffic before it traverses network components or reaches end user devices. Making these services and capabilities available to TWC's customers and networks will strengthen their protection against cyber threats and malicious activity, thereby boosting the overall security of the broadband ecosystem.

Even setting aside the specific cybersecurity practices that will be extended by this transaction, customers will benefit from the economies of scale and combined expertise associated with harmonizing the approaches and personnel of Comcast and TWC. By fostering stronger threat intelligence and deeper analytical resources, faster dissemination of threat information and remediation strategies, and common metrics across a broader scale of potentially affected networks and users, the integration and scaling of Comcast and TWC's existing cybersecurity resources will improve the overall cyber defense posture of the combined entity.

V. THE TRANSACTION WILL RESULT IN NO PUBLIC INTEREST HARMS.

As shown below, concerns about potential harms arising from the transaction are not credible in light of the robust state of competition in which the combined company will operate.

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[305] *Constant Guard – Our Safe Network*, Comcast Corp., http://constantguard.comcast.net/our-safe-network (last visited Mar. 30, 2014).

A. Overview of Competitive Analysis

The Commission has previously observed that transactions in which one firm acquires an interest in another may potentially "give rise to concerns regarding increases in vertical integration and/or horizontal concentration, depending on the lines of business in which the firms are engaged."[306]

As discussed below, the transaction presents no "horizontal" competitive concerns because, as illustrated in the following map, Comcast's and TWC's service areas are distinct and the companies do not compete in any relevant market.[307]

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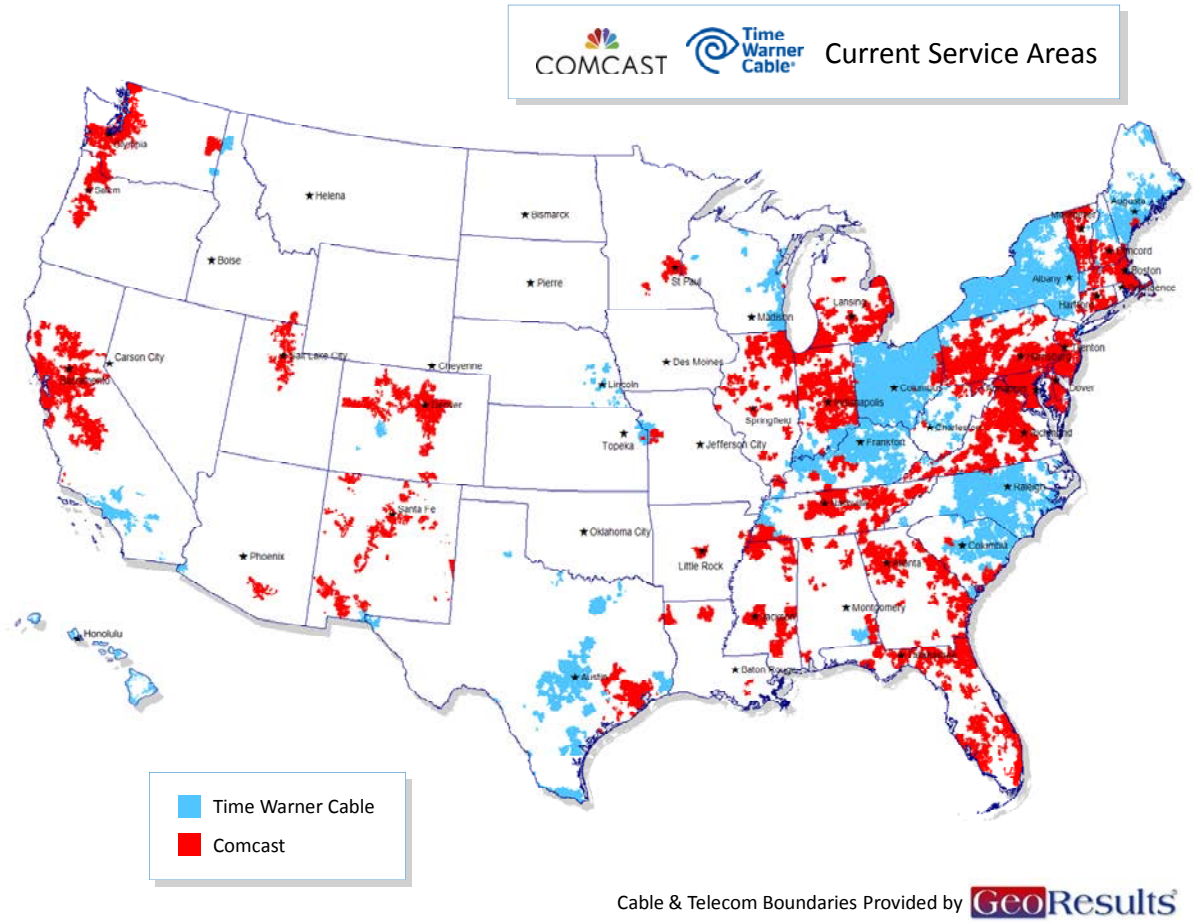
306 *Comcast-NBCUniversal Order* ¶ 27; *see also News Corp.-Hughes Order* ¶ 69. In this analysis, Applicants apply the framework developed by the Commission in prior merger transactions.

307 *News Corp.-Hughes Order* ¶ 69 (explaining that transactions may present "horizontal" concerns where "they eliminate competition between . . . firms and increase concentration in the relevant markets"); *see also AT&T-Centennial Order* ¶ 34 ("We next determine whether there is a significant increase in horizontal market concentration as a result of the proposed transaction. Transactions that do not significantly increase concentration or do not result in a concentrated market ordinarily require no further analysis of their horizontal impact."); *AT&T-BellSouth Order* ¶ 113 ("Specifically, we conclude that the merger is not likely to cause horizontal anticompetitive effects [in the markets for mass market high-speed Internet access services] because neither AT&T nor BellSouth provides any significant level of mass market Internet access service outside of its respective region."); *Sprint-Nextel Order* ¶ 31 ("A horizontal transaction is unlikely to create or enhance market power or facilitate its exercise unless it significantly increases concentration and results in a concentrated market, properly defined and measured. Transactions that do not significantly increase concentration or result in a concentrated market ordinarily require no further competitive analysis.").

Among the two companies' more than 33 million subscribers, approximately 2,800 Comcast residential or small- or medium-business customers are located in zip+4 areas where TWC services residential or small-business customers (and the number of TWC customers is similar). These customers are sprinkled across various zip+4 areas, none of which has more than 500 Comcast customers, and it is quite possible that Comcast and TWC are not even providing overlapping services in some of these fringe areas but rather just have facilities that fall within the same zip +4 area. Applicants also analyzed all business services as well (Ethernet, backhaul, wholesale, voice, etc.), and found either no overlap or only a small number (approximately 215 of Comcast and TWC customers in common zip codes). As the Commission has previously recognized, such *de minimis* overlaps are no cause for competitive concern. *See Insight-TWC Order* ¶ 20 ("[W]e find here that the 2,600 Insight customers (out of approximately 643,000 customers system-wide) in the overbuild area represent a *de minimis* reduction in competition that is unlikely to have an adverse effect warranting divestiture or other conditions."); *AT&T Broadband-Comcast Order* ¶ 153 ("Comcast and AT&T Broadband largely compete in separate geographic markets, and, to the extent their service areas overlap, we find no material increase in concentration that would raise the potential of competitive harm."); *Adelphia Order* ¶¶ 81, 82 n.287 ("Since the Applicants generally operate in non-overlapping territories and do not compete with each other in the distribution markets they serve, the proposed transactions would not reduce the number of competitive alternatives available to the vast majority of households. . . . In the few areas where Time Warner and Comcast have overlapping service areas, the number of affected subscribers is very low.").



Nor does the transaction present any plausible threat of "vertical" anticompetitive effects. Such effects may arise when a transaction increases a vertically integrated firm's incentive or ability to raise its rivals' costs, for example, by withholding distribution from rivals in an upstream content market or by withholding content from rivals in a downstream distribution market.[308] As the Commission has recognized, both theories of vertical foreclosure require (1) that the combined company "possess market power," and (2) that the proposed "transaction increases the [parties'] incentive and ability to gain from withholding a given input."[309]

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308 *News Corp.-Hughes Order* ¶ 78; *see also Adelphia Order* ¶ 115; *AT&T-BellSouth Order* ¶ 39; *SBC-AT&T Order* ¶ 35; *Verizon-MCI Order* ¶ 35.

309 *News Corp.-Hughes Order* ¶ 85; *see also Comcast-NBCUniversal Order* ¶ 28.

Neither prerequisite is met here. Comcast and others have documented at length elsewhere that the broadband, video content and distribution, voice, business services, interconnection, and other relevant markets implicated by this transaction are highly competitive and dynamic.[310] These markets will remain so following the transaction. "The combined company will face the same vigorous competition across its lines of business that Comcast and TWC do as stand-alone companies."[311] Accordingly, the transaction will not harm the public interest by diminishing competition. Rather, the transaction will lead to substantial benefits for consumers and competition, as explained in Section IV above. As Dr. Israel concludes, "[g]iven (i) the lack of any valid competitive concerns and (ii) the substantial consumer benefits, the proposed transaction—as it relates to the provision of broadband services in particular—is pro-consumer, pro-competitive, and in the public interest."[312]

B. Relevant Markets

The Commission typically has commenced its analysis of the potential adverse competitive effects of prior transactions by defining the relevant market(s) in which the applicants operate.[313] Relevant markets are typically defined along two dimensions: the product market and the geographic market.[314] Assessing whether two goods or services should be

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310 *See* discussion *supra* Sections IV.A-C; *see also* Comments of Comcast Corp., MB Docket No. 12-203, at 32-33 (Sept. 10, 2012); Comments of Comcast Corp., MB Docket No. 12-68, at 4-13 (June 22, 2012); Comments of Comcast Corp., MB Docket No. 11-131, at 7-17 (Nov. 28, 2011); *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Fifteenth Report, 28 FCC Rcd. 10496 (2013) ("*Fifteenth Annual Video Competition Report"*); Comments of NCTA, MB Docket No. 14-16, at 4-8 (Mar. 21, 2014).

311 Rosston/Topper Decl. ¶ 18.

312 Israel Decl. ¶ 12.

313 *News Corp.-Hughes Order* ¶ 50; *AT&T Broadband-Comcast Order* ¶ 42; *Adelphia Order* ¶¶ 59-60; *see also Application of EchoStar Commc'ns Corp., General Motors Corp., Hughes Elec. Corp.& EchoStar Commc'ns Corp.*, Hearing Designation Order, 17 FCC Rcd. 20559 ¶ 106 (2002) ("*EchoStar-DirecTV HDO*"). It is important to recognize that market definition is only a means to an end, not an end in itself. This is important because difficulties in market definition can sometimes be an obstacle to sound analysis.

314 *See News Corp.-Hughes Order* ¶ 50; *Adelphia Order* ¶ 59; *EchoStar-DirecTV HDO* ¶ 106.

included within the same relevant product or geographic market requires an appraisal of the extent to which consumers regard them as substitutes.[315]

In evaluating prior transactions, the Commission has relied on antitrust precedent and has defined a relevant market "as a product or group of products and a geographic area in which the product or products are produced or sold such that a hypothetical profit-maximizing monopolist would impose at least a 'small but significant and nontransitory' increase in price, assuming the terms of sale of all other products are held constant."[316] Under this approach, which is generally consistent with the approach that the federal antitrust agencies apply in evaluating mergers,[317] transactions may raise concerns "when they reduce the availability of substitute choices (i.e., increase market concentration) to the point that the acquiring firm has a significant incentive and ability to engage in anticompetitive actions such as raising prices or reducing output."[318]

In analyzing transactions involving MVPDs, the Commission has examined two separate video product markets: (1) the distribution of programming to consumers ("the distribution market"); and (2) the acquisition of network programming ("the programming market").[319] The Commission also has analyzed the markets for (3) Internet access services, (4) Internet interconnection (in less detail), (5) telephony services,[320] and (6) advertising.[321]

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315 *See News Corp.-Hughes Order* ¶ 50; *Adelphia Order* ¶ 59; *EchoStar-DirecTV HDO* ¶ 106.

316 *News Corp.-Hughes Order* ¶ 50 (citing U.S. Dep't of Justice & FTC, *Horizontal Merger Guidelines* § 1.0 (2010)) ("*Horizontal Merger Guidelines*"); *AT&T-BellSouth Order* ¶ 24 nn.85-86; *SBC-AT&T Order* ¶ 21 nn.83-84; *Verizon-MCI Order* nn.82-83; *Sprint-Nextel Order* ¶ 39.

317 *See generally Horizontal Merger Guidelines* § 1.0.

318 *Adelphia Order* ¶ 59; *EchoStar-DirecTV HDO* ¶ 97.

319 *See, e.g.*, *News Corp.-Hughes Order* ¶ 51; *Adelphia Order* ¶ 60; *Applications of Western Wireless Corp. & ALLTEL Corp.*, Memorandum Opinion & Order, 20 FCC Rcd. 13053 ¶ 22 (2005) ("*Western Wireless-ALLTEL Order*"); *AT&T-Cingular Order* ¶ 57.

320 *See, e.g.*, *Comcast-NBCUniversal Order* ¶¶ 60-109, 144-154; *AT&T Broadband-Comcast Order* ¶¶ 127-153; *SBC-AT&T Order* ¶¶ 108-115; *Verizon-MCI Order* ¶¶ 109-116.

1. MVPD Services

a. Product Market

MVPDs include cable operators, DBS providers, telephone companies (e.g., Verizon and AT&T), and "overbuilders" (e.g., Google Fiber, RCN, and WOW!). MVPDs acquire programming and offer it to consumers, deriving revenue principally from subscription fees. MVPDs also can obtain revenue from the sale of advertising time (to the extent they obtain the right to sell advertising time through carriage agreements).

The Commission repeatedly has found that the relevant product market in which to analyze competition faced by cable operators includes services offered by all MVPDs,[322] expressly rejecting arguments that DBS and cable are not part of the same product market.[323] And, as the *Comcast-NBCUniversal Order* anticipated, this market is beginning to expand as OVDs increasingly look to offer multiple channels of live, linear programming, in addition to competing with cable VOD offerings.

b. Geographic Market

In prior transactions, the Commission has concluded that the relevant geographic market for MVPD services is local (typically the franchise area of the local cable operator). The Commission has reasoned that consumers select an MVPD provider based on the MVPD choices available at their residences; consumers "are unlikely to change residences to avoid a small but

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321 *See, e.g.*, *Comcast-NBCUniversal Order* ¶¶ 60-109, 144-154; *AT&T Broadband-Comcast Order* ¶¶ 127-153; *SBC-AT&T Order* ¶¶ 108-115; *Verizon-MCI Order* ¶¶ 109-116.

322 *See, e.g.*, *Adelphia Order* ¶ 63; *AT&T Broadband-Comcast Order* ¶ 89; *AOL-Time Warner Order* ¶¶ 244-245; *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Tele-Communications, Inc., Transferor to AT&T Corp., Transferee*, Memorandum Opinion and Order, 14 FCC Rcd. 3160 ¶ 21 (1999) ("*AT&T-TCI Order*"). This approach is consistent with the approach to product market definition adopted by the federal antitrust agencies. *See, e.g.*, Compl. ¶¶ 24-27, *United States v. EchoStar Commc'ns Corp.*, No. 1:02CV02138 (D.D.C. filed Oct. 31, 2002) ("*DBS Complaint*").

323 *Adelphia Order* ¶¶ 62-63; *News Corp.-Hughes Order* ¶¶ 52-53; *AT&T Broadband-Comcast Order* ¶ 33; *AOL-Time Warner Order* ¶ 244.

significant increase in the price of MVPD service."[324] Moreover, to simplify the analysis, the Commission has aggregated consumers that face the same choice in MVPDs into larger relevant geographic markets.[325] There is no reason for the Commission to deviate from its prior approach in this case.

2. Video Programming

Cable programming network rights and broadcast television retransmission rights are licensed to MVPDs by content owners. Companies that own cable or broadcast programming networks produce their own programming and acquire programming produced by others. These companies "package and sell this programming as a network or networks to MVPDs for distribution to consumers."[326] Companies that own broadcast networks distribute programming through both owned-and-operated ("O&O") and affiliated television broadcast stations.[327] Television broadcast stations redistribute their programming via MVPDs pursuant to an election that each station makes either to engage in commercial negotiations ("retransmission consent") or enjoy mandatory (but uncompensated) carriage ("must-carry").[328] Both cable programmers and broadcast networks also widely license content in different windows to OVDs, which increasingly offer content on an exclusive basis, including original content.

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[324] *Adelphia Order* ¶ 64; *see also Comcast-NBCUniversal Order* ¶ 42; *News Corp.-Hughes Order* ¶ 62; *AT&T Broadband-Comcast Order* ¶ 90; *EchoStar-DirecTV HDO* ¶ 119.

[325] *Comcast-NBCUniversal Order* ¶ 42; *Adelphia Order* ¶ 64; *News Corp.-Hughes Order* ¶ 62.

[326] *News Corp.-Hughes Order* ¶ 54; *see Adelphia Order* ¶ 61; *EchoStar-DirecTV HDO* ¶ 248; *AT&T Broadband-Comcast Order* ¶ 34; *see also The Commission's Cable Horizontal & Vertical Ownership Limits*, Second Further Notice of Proposed Rulemaking, 20 FCC Rcd. 9374 ¶¶ 65-66 (2005).

[327] *News Corp.-Hughes Order* ¶ 54 ("Television broadcast stations affiliated with broadcast networks combine network programming with their own locally originated programming and/or programming secured from other sources to provide over-the-air service.").

[328] *See, e.g., id.*

a. Product Market

The video programming marketplace is highly dynamic and diverse and includes a wide array of national, regional, and local content. As a result of dramatic growth, MVPDs and other distributors today carry hundreds of networks that did not exist a decade ago.[329]

In prior transactions, the Commission has found that markets that include video programming are "differentiated product markets."[330] According to the Commission, the programming of different networks "differs significantly in terms of characteristics, focus, and subject matter."[331]

The Commission has employed a flexible approach with respect to programming in prior transactions. In the *News Corp.-Hughes Order*, for example, the Commission addressed the three categories of programming offered by News Corp.: "(1) national and non-sports regional cable programming networks; (2) regional sports cable networks; and (3) local broadcast television programming."[332] In the Adelphia transaction, the Commission evaluated two categories of programming: "(1) national cable programming networks and (2) regional cable networks, particularly regional sports networks."[333] Most recently, in the NBCUniversal transaction, the Commission considered regional sports networks, NBC broadcast networks, and national cable networks as part of overall programming.[334]

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329 *See Fifteenth Annual Video Competition Report* ¶ 22.

330 *News Corp.-Hughes Order* ¶ 59; *Adelphia Order* ¶ 66. According to the Commission, "[d]ifferentiated products are products whose characteristics differ and which are viewed as imperfect substitutes by consumers." *News Corp.-Hughes Order* ¶ 59 n.206 (citing Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization* 281 (2d ed. 1991)).

331 *Adelphia Order* ¶ 66; *News Corp.-Hughes Order* ¶ 59; *EchoStar-DirecTV HDO* ¶ 250.

332 *News Corp.-Hughes Order* ¶ 60 (internal citations omitted).

333 *Adelphia Order* ¶ 67.

334 *See Comcast-NBCUniversal Order* ¶¶ 136, 140.

b. Geographic Market

In prior transactions, the Commission has concluded that it was "reasonable to approximate the relevant geographic market for video programming by looking to the area in which the program owner is licensing the programming."[335] Under this approach, the relevant geographic market for national programming networks is national in scope, as these networks are generally licensed to MVPDs and now other distributors nationwide.

Under the Commission's approach, the relevant geographic market for RSNs and other regional networks is regional.[336] Similarly, in the case of retransmission consent rights for local broadcast television programming, the Commission concluded that it is reasonable to use DMAs to approximate the relevant geographic market for each individual broadcast station.[337] According to the Commission, contracts between broadcast stations and the distributors of programming, as well as FCC regulations and broadcasting technology, typically limit the extent to which broadcast station signals can be distributed outside of their assigned DMA.[338] There is no reason for the Commission to adopt narrower geographic market definitions in this matter.

3. Internet Access Services

In prior transactions, the Commission has concluded that residential "high-speed Internet access services" constitute a relevant product market.[339] The Commission determined that the

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335 *Adelphia Order* ¶ 68; *see also News Corp.-Hughes Order* ¶ 64.

336 *See Adelphia Order* ¶ 68; *AT&T Broadband-Comcast Order* ¶¶ 59-60; *News Corp.-Hughes Order* ¶ 66.

337 *News Corp.-Hughes Order* ¶ 65.

338 Broadcasters have the right to prevent cable operators from carrying certain programming from the signals of broadcast stations from other markets. *See* 47 C.F.R. §§ 76.92-76.95 (network non-duplication rule); *id.* §§ 76.101-76.110 (syndicated exclusivity rule).

339 *AOL-Time Warner Order* ¶ 56; *AT&T Broadband-Comcast Order* ¶ 128. The Commission has found that the market for high-speed Internet services includes, among other things, Internet access services provided "over coaxial cable in the form of cable modem service offered by cable operators, and over copper wires in the form of digital subscriber line ('DSL') services by local exchange carriers," *AT&T Broadband-Comcast Order* ¶ 128

relevant geographic market for high-speed Internet services is local – just as with MVPD services. The Commission reasoned that a "consumer's choice of broadband Internet access provider is limited to those companies that offer high-speed Internet access services in his or her area."[340] There is no reason for the Commission to define a different product or geographic market in this transaction.[341]

4. Internet Interconnection

The Commission has not previously defined the precise contours of "the market for exchanging and carrying [Internet] traffic."[342] As the Commission has recognized, any "market for exchange of Internet traffic," or Internet interconnection, contains numerous service providers and is at least national in geographic scope.[343]

Should the Commission attempt to define the market for interconnection, it would be sensible to consider two related services together: (1) "peering" services, which facilitate the "exchange of traffic destined for addresses on the peering entities' own networks or the networks of their customers";[344] and (2) "transit" services, which provide access to "at a minimum, an

(internal citations omitted), as well as fixed wireless, satellite broadband, fiber, and increasingly, mobile wireless. *see infra* Section IV.

340 *AT&T Broadband-Comcast Order* ¶ 128; *see also AOL-Time Warner Order* ¶ 74.

341 *See* Israel Decl. ¶ 21 ("Defining a national geographic market would suggest that Comcast and TWC are direct competitors despite the fact that they do not compete, but instead serve different, geographically distinct footprints, and thus are not an option for one another's customers. Put simply, the transaction will not change the number of broadband choices available to consumers.").

342 *Applications Filed by Global Crossing Ltd. and Level 3 Commc'ns, Inc. for Consent to Transfer Control*, Memorandum Opinion and Order, 26 FCC Rcd. 14056 ¶ 19 n.64 (WCB & IB 2011) ("*Level 3-Global Crossing Order*"). The Commission has found that there is a distinct product market for Tier 1 Internet backbone services. *Id.* ¶ 21; *see also SBC-AT&T Order* ¶¶ 112-113; *Verizon-MCI Order* ¶¶ 110-113. Neither Comcast nor TWC is a Tier 1 ISP, which is an ISP able to carry traffic to the entire Internet without having to buy transit services from other ISPs.

343 *Level 3-Global Crossing Order* ¶¶ 20-21 (citing *SBC-AT&T Order* ¶¶ 112-114; *Verizon-MCI Order* ¶ 115).

344 *Level 3-Global Crossing Order* ¶ 19. Peering may be settlement-free (exchange of traffic without exchange of money) or paid (one network compensates the other for the exchange of traffic). *Id.*

Internet region."[345] The Commission previously has observed that peering services may be "settlement-free," which means that traffic is exchanged without payment, or paid.[346] Settlement-free peering is more common when the traffic in each direction is roughly commensurate, or the exchange of network facilities and services each network performs for the other is roughly equal, and paid peering is more common when there is a significant traffic or network imbalance. Similarly, "transit agreements are diversifying into more complex pricing arrangements based on metrics attempting to approximate the cost of carrying traffic."[347] The networks that provide peering and transit vary in type and include Tier 1 Internet backbone providers,[348] ISPs, and content delivery networks (CDNs).[349] These peering and transit services are often substitutable for one another, and providers compete to offer peering and transit services to one another and to Internet content providers (or "edge providers").

As explained below, there is no plausible basis to conclude that the combination of Comcast and TWC will harm competition in any market for peering and transit services.

5. Telephony

In prior transactions, the Commission has identified residential telephone services as a relevant product market and determined that cable-based providers compete in that market with

345 *Id.*

346 *Id.*

347 *Id.*

348 The Internet "backbone" refers to high-capacity long-haul transmission facilities, which are interconnected with each other. *SBC-AT&T Order* ¶ 109; *Verizon-MCI Order* ¶ 110; *AT&T-BellSouth Order* ¶ 122.

349 CDNs are "overlay networks that cache content closer to users and compete with transit providers for certain classes of customers." *Level 3-Global Crossing Order* ¶ 19 n.60.

LECs.[350] The Commission also has indicated that, as with MVPD and Internet access services offered by cable companies, the relevant geographic market for telephony services is local.[351]

6. Advertising

The Commission has not attempted to define formally a market or markets for advertising, but it has analyzed competition in advertising in prior transactions. In the *Comcast-NBCUniversal Order*, the Commission expressly rejected a product market definition that would include both broadcast advertising and cable advertising.[352] The Commission concluded that "[b]roadcast and cable programming advertising are not sufficiently close substitutes to advertisers to warrant defining a product market that would include both," and observed that its "view is consistent with the DOJ's conclusion that cable and broadcast advertising are in separate product markets."[353] There is no reason for the Commission to adopt a different analysis for this transaction. Nevertheless, should the Commission do so, it should recognize that the advertising marketplace is much broader than just cable and broadcast, encompassing numerous competitors, such as radio, online, and others, as Drs. Rosston and Topper note.[354]

As explained below, there is no plausible basis to conclude that the combination of Comcast and TWC would harm competition in any advertising market(s).

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350 *Insight-TWC Order* ¶ 17; *AT&T Broadband-Comcast Order* ¶¶ 152-53.

351 *See TWC-Insight Order* ¶ 16 ("Overall, we conclude that any potential competitive harms are limited because [TWC and Insight] primarily serve separate geographic areas."); *see also AT&T Broadband-Comcast Order* ¶ 153 ("Comcast and AT&T Broadband largely compete [for telecommunications customers] in separate geographic markets, and, to the extent their service areas overlap, we find no material increase in concentration that would raise the potential of competitive harm").

352 *Comcast-NBCUniversal Order* ¶ 152.

353 *Id.* DOJ has recently affirmed this position. *See* Compl. ¶¶ 14-16, *United States v. Gannett Co.*, No. 1:13-cv-01984 (D.D.C. filed Dec. 16, 2013).

354 *See* Rosston/Topper Decl. ¶ 237 n.266.

C. Because the Parties Do Not Compete for Consumers, There Is No Plausible Theory of Competitive Harm Arising from the Horizontal Elements of the Transaction.

1. The Transaction Will Not Reduce Competition in Any Relevant Market for MVPD, Broadband, or Voice Services.

a. Comcast and TWC Do Not Compete in Any Relevant Market.

The FCC's standard for whether two providers of broadband, video, or voice compete is whether they offer service to the same customers – the same standard reflected in the DOJ's and FTC's Horizontal Merger Guidelines.[355] Consistent with this standard, as noted above, the Commission has concluded that the relevant market for each of these services is local.[356] Because Comcast and TWC serve almost entirely distinct geographic areas, they do not compete for any of these services and the transaction will not result in any reduction in competition or consumer choice for broadband, video, or voice providers – nor will it increase Comcast's market share in any geographic product market.[357]

The lack of competition between Comcast and TWC fundamentally distinguishes this transaction from proposed mergers recently challenged by antitrust regulators, such as the AT&T/T-Mobile transaction. Indeed, the absence of any reduction in competition should end the inquiry into any potentially anticompetitive effects in these consumer markets resulting from the horizontal aspects of the transaction. Some have protested that cable – or Comcast or TWC's – local market share is "too high" in one or more services. Not only does this assertion ignore

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355 *See Horizontal Merger Guidelines* § 4.2.2 ("[T]he Agencies may define geographic markets based on the locations of targeted customers. Geographic markets of this type often apply when suppliers deliver their products or services to customers' locations. Geographic markets of this type encompass the region into which sales are made. Competitors in the market are firms that sell to customers in the specified region.").

356 *See, e.g.*, *Adelphia Order* ¶ 81 ("Consistent with our precedent, we find that the relevant geographic unit for the analysis of competition in the retail [video] distribution market is the household."); *SBC-AT&T Order* ¶ 97 ("As with special access and enterprise services, we conclude that the relevant geographic market for mass market local, long distance, and bundled local and long distance services is the customer's location.").

357 *See supra* note 307.

the intense competition the companies face for *each* of their services, but it also has no relevance to this transaction. No relevant local market share *changes* as a result of this deal, and the transaction should not be used as an opportunity to air generalized concerns or views of what a different hypothetical market might look like.[358]

Equally irrelevant to a competitive analysis is the extent of the combined company's presence in particular regional or metropolitan areas, such as DMAs and/or Metropolitan Service Areas ("MSAs"). Consumers do not buy video, broadband, or voice service based on which provider is in their DMA or MSA, but rather based on which provider services their local neighborhood.[359] And, the only relevant question is the effects of the transaction on individual consumers. Again, because TWC and Comcast do not compete with each other there will be no reduction in competitive choices in any relevant market. As Drs. Rosston and Topper explain:

> Some public commentary on the proposed transaction has focused on Comcast's increased customer share in top DMAs and raised concerns that Comcast's increased presence in these top DMAs will give it increased market power in programming acquisition. Those concerns are without economic basis.
>
> DMAs are Nielsen constructs for rating measurement purposes and do not constitute relevant antitrust markets. Comcast does not compete with TWC for customers or for programming even when both firms operate cable systems in the same DMA. Thus, Comcast and TWC do not compete with each other in purchasing programming, which means content providers currently do not realize any benefits from playing TWC and Comcast off against each other in carriage negotiations that involve a single or multiple DMAs. After the transaction, the combined firm's demand for a content provider's programming in top DMAs (or any DMAs) will not change.[360]

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358 *See* Section III (discussing precedent on transaction-specific standard of review).

359 Specifically, DMAs are relevant measures for advertisers buying *broadcast* advertising, which is not at issue in the transaction. And as shown below, the company faces competition in its DMAs, which protects programmers and advertisers.

360 Rosston/Topper Decl. ¶¶ 180-81.

Other critics have alleged that an increase in Comcast's putative national "market" shares generally will reduce competition in consumer markets. Because the relevant markets are local, however, that argument is baseless. In fact, the increase in Comcast's share of video, broadband, and voice consumers nationwide will not change the Herfindahl-Herschman Index ("HHI")[361] in any relevant market.[362] Critics have failed to provide any antitrust or economic analysis to warrant a departure from this consistent approach.[363]

b. The Consumer Markets That Comcast and TWC Serve Are Competitive and Dynamic.

The transaction will not reduce consumer choices, and that alone precludes a finding of horizontal harm. Nonetheless, it bears emphasis that Comcast and TWC also face robust competition in the local markets for video, Internet, and voice that they respectively serve.

Video. In 2011, 98.6% of homes had access to at least three MVPDs, and 35.3% had access to at least four.[364] And as shown above, the video marketplace continues to become ever more competitive, with cable losing market share both to well-established and new competitors.[365] These competitive conditions will not change as a result of the proposed transaction. Moreover, the traditional metrics of competition do not account for additional competition from established OVDs or emerging over-the-top multichannel linear service providers like Sony.

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361 HHI is a measure used by the *Horizontal Merger Guidelines* to assess concentration levels. *Horizontal Merger Guidelines* § 5.3.

362 *See* Rosston/Topper Decl. ¶ 163.

363 *See* Israel Decl. ¶¶ 18-21. As Dr. Israel explains, "[i]n an attempt to find harms to residential broadband customers, commenters may attempt to define a 'national market' for residential broadband services and claim that the transaction increases concentration in such a 'market,' including claims that the combined firm will have a large share in this alleged national market. Such claims are not grounded in any sound economic theory and provide no valid support for horizontal harms from the proposed transaction." *Id.* ¶ 20.

364 *Fifteenth Annual Video Competition Report* ¶ 36.

365 *See supra* Section IV.B.2.

Broadband. As discussed in Section IV, the broadband marketplace is especially dynamic, as reflected by the more recent emergence or recent expansion of providers like AT&T, CenturyLink, Verizon, and Google Fiber; continued robust competition from other wireline providers; and the ever-improving broadband speeds offered by the four national wireless carriers – Verizon Wireless, AT&T Wireless, Sprint, and T-Mobile. As wireless data speeds continue to increase substantially with the deployment of advanced technology – including 4G LTE, LTE-Advanced, and beyond – mobile broadband service is increasingly competing with wireline broadband, as the Commission and DOJ have recognized.[366] As SoftBank's Son argued, "[i]n the past, only fixed line broadband could provide high-speed Internet for [tablets and smartphones], but now wireless is becoming very powerful that it would be an alternative."[367] In many ways, wireless broadband is an even more formidable competitor because it offers consumers mobility and national reach.

Again, the relevant market for broadband is local, but it bears noting that Comcast does and the combined company will face competition nearly everywhere it does business from other robust broadband providers, before and after the deal. Although as noted above MSAs are not

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366 *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Servs.*, Sixteenth Report, 28 FCC Rcd. 3700 ¶ 2 (2013) ("Mobile wireless Internet access service could provide an alternative to wireline service for consumers who are willing to trade speed for mobility, as well as consumers who are relatively indifferent with regard to the attributes, performance, and pricing of mobile and fixed platforms."); *id.* ¶ 371 ("[M]obile wireless providers have made substantial progress in upgrading their networks with higher-speed technologies and expanding coverage with these technologies. In some cases mobile broadband networks are being used as a replacement for wireline last-mile solutions, where location makes deployment of wireline facilities inefficient."); *Ex Parte* Submission of the U.S. Dep't of Justice, GN Docket No. 09-51, at 8 (Jan. 4. 2010) ("Wireless may be a very attractive alternative for consumers who greatly value mobility and for consumers who do not place much value on the highest speeds (*e.g.*, consumers who do not want advanced services, such as HD video streaming). It appears to offer the most promising prospect for additional competition in areas where user density or other factors are likely to limit the construction of additional broadband wireline infrastructure.").

367 Masayoshi Son, CEO, SoftBank Corp., Presentation: The Promise of Mobile Internet in Driving American Innovation, the Economy and Education, Tr. at 12 (Mar. 11, 2014), http://cdn.softbank.jp/en/corp/set/data/irinfo/presentations/vod/2013/pdf/press_20140311_02.pdf.

appropriate markets for assessing potential competitive harms in this transaction, even if one were to consider broadband availability at the MSA level, as the chart below illustrates, there are numerous other broadband providers in all of the top 20 MSAs:[368]

Broadband Providers in the Top 20 Metropolitan Statistical Areas (MSAs)

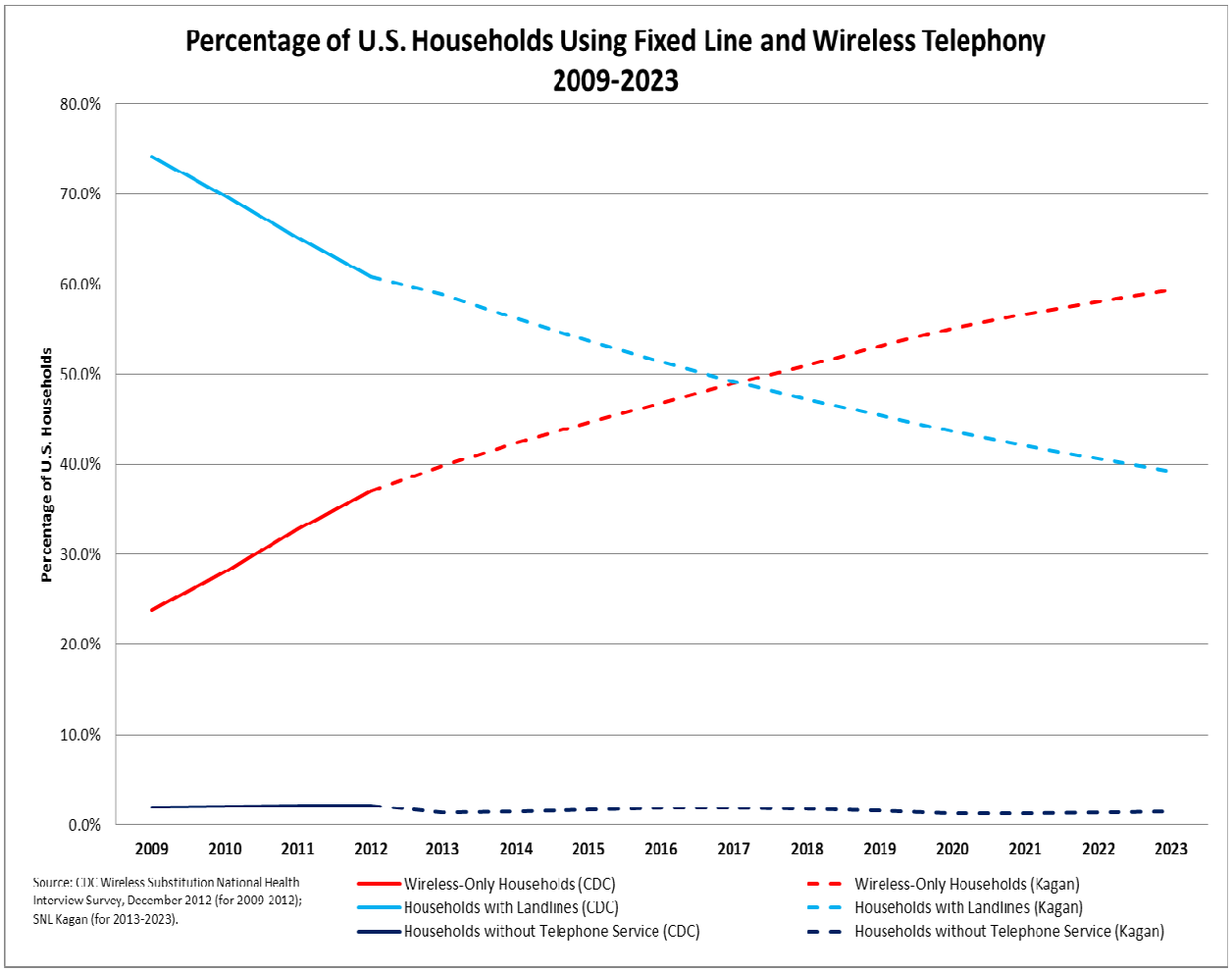
Rank	MSA	Providers (excluding Comcast and TWC)	Total	Post-Transaction
1	New York-Newark-Jersey City, NY-NJ-PA	AT&T, Cablevision, CenturyLink, RCN, Verizon, and 24 others	29	No Change
2	Los Angeles-Long Beach-Santa Ana, CA	AT&T, Cablevision, Charter, Cox, Verizon, and 12 others	17	No Change
3	Chicago-Joliet-Naperville, IL-IN-WI	AT&T, RCN, T-Mobile, Sprint, Verizon, WOW!, and 16 others	22	No Change
4	Dallas-Fort Worth-Arlington, TX	AT&T, CenturyLink, Charter, Suddenlink, Verizon, and 28 others	33	No Change
5	Houston-Sugar Land-Baytown, TX	AT&T, CenturyLink, Charter, Suddenlink, Verizon, and 27 others	32	No Change
6	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	AT&T, Cavalier, Frontier, RCN, Verizon, and 27 others	32	No Change
7	DC-Arlington-Alexandria, DC-VA-MD-WV	AT&T, Cavalier, CenturyLink, Cox, Frontier, RCN, and 31 others	37	No Change
8	Miami-Fort Lauderdale-Pompano Beach, FL	AT&T, CenturyLink, T-Mobile, Sprint, Verizon, and 10 others	15	No Change
9	Atlanta-Sandy Springs-Marietta, GA	AT&T, Charter, Frontier, Mediacom, Sprint, Verizon, and 19 others	25	No Change
10	Boston-Cambridge-Quincy, MA-NH	AT&T, Charter, RCN, Sprint, T-Mobile, Verizon, and 14 others	20	No Change
11	San Francisco-Oakland-Fremont, CA	AT&T, Sprint, T-Mobile, Verizon, Windstream and 9 others	14	No Change
12	Phoenix-Mesa-Glendale, AZ	AT&T, CenturyLink, Cox, Mediacom, Verizon, and 25 others	30	No Change
13	Riverside-San Bernardino-Ontario, CA	AT&T, Charter, Frontier, Mediacom, Sprint, Verizon, and 10 others	16	No Change
14	Detroit-Warren-Livonia, MI	AT&T, CenturyLink, Charter, WOW! and 21 others	25	No Change
15	Seattle-Tacoma-Bellevue, WA	AT&T, CenturyLink, Sprint, T-Mobile, Verizon, and 20 others	25	No Change
16	Minneapolis-St. Paul-Bloomington, MN-WI	AT&T, CenturyLink, Charter, Mediacom, Verizon, and 35 others	40	No Change
17	San Diego-Carlsbad-San Marcos, CA	AT&T, Cox, Mediacom, T-Mobile, Verizon, and 7 others	12	No Change
18	Tampa-St. Petersburg-Clearwater, FL	AT&T, CenturyLink, Verizon, WOW!, and 8 others	12	No Change
19	St. Louis, MO-IL *(no Comcast or TWC presence)*	--	--	--
20	Baltimore-Towson, MD	AT&T, Cavalier, RCN, Verizon, and 22 others	26	No Change

Source: National Broadband Map (www.broadbandmap.gov). Includes wireline, terrestrial fixed wireless, terrestrial mobile wireless, and satellite providers in the Top 20 MSAs with a reported "highest advertised download speed" of 3Mbps or more. Chicago-Joliet-Naperville, IL-IN-WI MSA information obtained from Broadband Illinois.

Voice. Residential and business customers have numerous competitive alternatives for telephone service, including other traditional providers of phone service, wireless providers, and

368 Information on broadband providers on the National Broadband Map is organized by state, county, state legislative district, MSA, Universal Service Fund (USF) study area, or Native Nations. Each MSA consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core. Collecting broadband data at the MSA level is a requirement of the National Broadband Plan. FCC, Connection America: The National Broadband Plan at 44 (2010), *available at* http://www.broadband.gov/download-plan/ ("The data collection should be done in a way that makes possible statistically significant, detailed analyses of at least metropolitan service area (MSA) or rural service area (RSA) levels, thus allowing the FCC to understand the effect of bundles and isolate the evolution of effective pricing and terms for broadband services.").

providers of nomadic VoIP services. The unmistakable trend in telephony continues to be toward wireless substitution of fixed telephone lines. As the figure below demonstrates, wireless has been eroding fixed line's share of U.S. households and that trend is projected to continue over the next decade, exerting significant competitive pressure on fixed telephone services.



Moreover, millions of customers now use Vonage, Skype, and other over-the-top options.

2. Comcast's Increased Scale as a Buyer of Programming Will Not Cause Any Competitive Harm.

As noted above, after the transaction and expected divestiture of systems, Comcast will manage systems serving fewer than 30 percent of total MVPD subscribers in the United States.

This share is plainly insufficient to give Comcast anticompetitive "monopsony" or "buyer power" vis-á-vis sellers of video programming.

Whether the level of concentration in the MVPD industry creates competitive concerns vis-á-vis programmers has been extensively litigated, resulting in clear judicial guidance on this issue. Specifically, the D.C. Circuit concluded more than a decade ago that the evidence before the FCC and the court could not have justified a horizontal ownership limit "lower than 60%" on the basis of buyer power concerns.[369] And in 2009, the same court concluded that "[i]n light of the changed marketplace, *the Government's justification for the 30% cap is even weaker now than in 2001. . . .*"[370] As the court explained:

> [T]he record is replete with evidence of ever increasing competition among video providers: Satellite and fiber optic video providers have entered the market and grown in market share since the Congress passed the 1992 Act, and particularly in recent years. Cable operators, therefore, no longer have the bottleneck power over programming that concerned the Congress in 1992.[371]

As explained above, today's MVPD marketplace is even more competitive than it was in 2009 – let alone in 2001 – with cable providers' share of U.S. MVPD subscribers having declined significantly in recent years in light of robust competition from DBS and telco providers.[372] Along with new wireline MVPD entrants, like Google Fiber, a number of online businesses like Netflix, Apple, Google, Amazon, Hulu, Sony, and a host of smaller companies, are entering the online video space and positioning themselves as full or partial competitors to MVPDs.[373] At the same time, MVPDs like Dish,[374] DirecTV,[375] and Verizon FiOS[376] are

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369 *See Time Warner Entm't Co. v. FCC*, 240 F.3d 1126, 1136 (D.C. Cir. 2001) ("*Time Warner II*").

370 *Comcast Corp. v. FCC*, 579 F.3d 1, 9 (D.C. Cir. 2009) (emphasis added).

371 *Id.* at 8.

372 *See* discussion and graph *supra* Section IV.B.2.

373 *See* Rosston/Topper Decl. ¶ 171.

reportedly exploring online video offerings. Growth in online video services has been impressive. By SNL Kagan's estimate, 45.2 million U.S. households subscribe to online video services in 2013, more than double the 19.8 million that did so in 2010.[377] The number of hours Americans spend watching video over the Internet has grown 70 percent since June 2010.[378] Surveys of TV households show that the percentage of TV watching time that is spent on viewing of Internet streaming to computers, TV sets, and handheld devices grew from 3 percent in 2011 to 13 percent in 2013.[379] Approximately 53 million households used online video in 2013.[380] As OVD providers continue to grow, they will give content providers even more ways to distribute their programming and limit Comcast's bargaining leverage in acquiring

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374 *See* Ryan Nakashima, *Dish, Disney deal envisions Internet-delivered TV*, Associated Press, Mar. 4, 2014, *available at* http://entertainment.verizon.com/news/read/category/Top%20News/article/ap-dish_disney_deal_envisions_internetdeliv-ap-2 (describing deal between Dish Network and Disney that paves the way for Dish to offer live local broadcasts from ABC TV stations and programming from ABC Family, Disney Channel, ESPN and ESPN2 over mobile devices, set-top boxes and other means, similar to how Netflix's video streams are delivered today).

375 *See* Shalini Ramachandran, *DirecTV Explores Online Video Service*, Wall St. J., Dec. 12, 2013, *available at* http://online.wsj.com/news/articles/SB10001424052702304202204579254524162627610 (describing DirecTV's interest in creating a "'niche' online video service" targeting certain groups of consumers who have dropped traditional pay-TV service).

376 *See* Brian X. Chen & Quentin Hardy, *Verizon Plans to Buy Intel Media Division to Expand Its Television Services*, N.Y. Times, Jan. 21, 2014, *available at* http://www.nytimes.com/2014/01/22/technology/verizon-to-expand-tv-services-with-intel-media-purchase.html?_r=0 (describing Verizon's plan to buy the intellectual property and assets of Intel Media, the digital TV division of Intel, which developed a solution to offer channels over the Internet to screens of different sizes, from smartphones to big-screen TVs).

377 *See* SNL Kagan, *Internet Video-On-Demand Revenue Projection*s, 2009-2022 (Nov. 2012).

378 *See* FCC, Fact Sheet: Internet Growth and Investment (Feb. 19, 2014), http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0219/DOC-325653A1.pdf. *Compare* Nielsen Co., *An Era of Growth: The Cross-Platform Report*, at 11 (Mar. 5, 2014), http://www.nielsen.com/us/en/reports/2014/an-era-of-growth-the-cross-platform-report.html (average of seven hours, 34 minutes per month spent watching video over the Internet in Q4 2013) *and* Nielsen Co., *State of the Media: The Cross-Platform Report*, at 5 (June 14, 2011), *available at* http://www.nielsen.com/us/en/reports/2011/cross-platform-report-q1-2011.html (four hours, 24 minutes in Q4 2010).

379 *See* Horowitz Associates, Inc., *An In-Depth Look at Alternative Platform Capability and Usage* (Nov. 2013).

380 *See* SNL Kagan, *Online Video Buffets, But Does Not Break Multichannel Model* (Oct. 1, 2013).

programming.[381] Indeed, OVDs are increasingly an outlet for original programming that is succeeding with millions of viewers on online platforms with no MVPD carriage at all.[382]

In other words, previous concerns about further cable consolidation and "monopsony" power are truly antiquated in light of today's marketplace realities. In order to compete effectively, Comcast will need to offer its customers the best programming available.[383] Electing not to carry compelling programming would put Comcast at a competitive disadvantage.[384] In fact, when addressing the topic of MVPD consolidation earlier this year, Charles G. Carey, President of 21st Century Fox, stated:

> We honestly don't see any material consequences to our business. In fact, there may be some positive ones. First, unique content at scale in an expanding digital world has never held a stronger hand. . . . Furthermore, the real issue is how many choices an individual home has, not how big is the distributor. We already deal successfully with large distributors. Cable consolidation will not change the number of choices. Consumer choice is actually likely to increase, not decrease, as over-the-top digital platforms emerge. Finally, consolidation may spur innovation and improve customer experience, and new technologies like targeted ads as well as other enhancements that enlarge the pie for everyone.[385]

In any event, there is no economic basis for applying monopsony theory to this transaction.[386] In the context of sales to MVPDs (which, unlike programming networks, do not

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381 *See* Rosston/Topper Decl. ¶ 188.

382 *See* Parks Associates, *OTT in a Pay-TV World* (Dec. 2013). OVDs have even begun to offer original and exclusive award-winning programming, such as Netflix's "House of Cards" series, or purchase exclusive windows of content from other traditional programming suppliers, such as Amazon Prime's exclusive SVOD rights to FX's "Justified." *See* Greg Satell, *What Netflix's 'House of Cards' Means For The Future Of TV*, Forbes, Mar. 4, 2013, http://www.forbes.com/sites/gregsatell/2013/03/04/what-netflixs-house-of-cards-means-for-the-future-of-tv/; Carl Franzen, *Amazon Prime Instant Video gets exclusive rights to 'Justified'*, The Verge, Feb. 26, 2013, http://www.theverge.com/2013/2/26/4031472/amazon-prime-video-justified-exclusive-and-the-shield.

383 *See* Rosston/Topper Decl. ¶¶ 176-178 (explaining that the transaction will not give Comcast market power to change the demand for or supply of programming).

384 *See Time Warner II*, 240 F.3d at 1134 ("If an MVPD refuses to offer new programming, customers with access to an alternative MVPD may switch.").

385 21st Century Fox, Inc., Q2 2014 Earnings Call, Tr. at 6 (Feb. 6, 2014).

386 Rosston/Topper Decl. ¶ 179.

generally license content exclusively), programming is what is called a "non-rivalrous" good, meaning that one firm's purchase of it has no effect on the amount of programming available for sale to other firms.[387] Indeed, both the opportunity cost and the marginal cost of licensing the same programming to a distributor is essentially zero.[388] Further, because Comcast and TWC do not compete for the same video customers, one firm's purchase of programming does not reduce the other firm's potential demand for programming. Under these circumstances, Comcast and TWC do not "compete" today to purchase video programming.[389] And, in fact, greater concentration among cable operators has coincided with an enormous increase in the number of video programming channels – exactly the *opposite* of what a monopsony theory would predict. Between 1993 and 2013, the number of national programming networks *increased* more than fourfold.[390] Drs. Rosston and Topper make clear that there are no monopsony video programming concerns in this transaction:

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387 *See id.* ¶ 178. *See generally Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992*, Further Notice of Proposed Rulemaking, 16 FCC Rcd. 17312 ¶ 15 (2002) ("Consumption of the programming of a video programming network . . . by one viewer does not reduce the amount of the good available for another viewer.").

388 *See* David Waterman, *Local Monopsony and Free Rider*s, 8 Info. Econ. & Pol'y 337, 339 (Dec. 1996) (video programming is a non-rivalrous good in that the costs of production are incurred up-front; subsequent sales are essentially costless).

389 *See generally* Reply to Comments & Petitions to Deny Applications for Consent to Transfer of Control, MB Docket No. 02-70, App. 5 (Declaration of Prof. Janusz Ordover), ¶¶ 25-30 (May 21, 2002). In contrast, many of the classic monopsony cases involve agricultural commodities, like grain or rice, which are plainly "rivalrous" goods—*i.e.*, the purchase of one unit reduces the supply available to other purchasers. *See, e.g.*, *United States v. Cargill, Inc.*, 2000-2 Trade Cas. (CCH) ¶ 72, at 967 (D.D.C. June 30, 2000) (grain); *Beef Indus. Antitrust Litig.*, 907 F.2d 510 (5th Cir. 1990) (fed-cattle); *United States v. Rice Growers Ass'n of Cal.*, 1986-2 Trade Cas. (CCH) ¶ 67, at 288 (E.D. Cal. Jan. 31, 1986) (rice).

390 *Compare Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, First Report, 9 FCC Rcd. 7442 ¶ 21 & App. C, tbl. 4 (1994) *and* Rosston/Topper Decl. ¶ 35 n.12. As Commissioner Pai stated in connection with the latest FCC Video Competition Report, "Today, more Americans have more choices when it comes to video programming than ever before. They can watch a greater variety of programming than ever before. They can view that programming on a wider array of devices than ever before. And they have a greater ability than ever before to watch that programming when they want to watch it." *Fifteenth Annual Video Competition Report* (Statement of Comm'r Ajit Pai).

> Because the transaction will not change the demand and supply conditions underlying program buying, it would not be profitable for Comcast to limit its output (i.e., the number of customers to whom it distributes certain programming) to depress what it pays a content provider – doing so would cost Comcast valuable programming and ultimately profits. In other words, the transaction will not give Comcast the incentive or ability to exercise market power (or "monopsony power") in purchasing video programming. The same economic factors also imply that the transaction will not reduce content providers' incentives to produce high-quality programming.[391]

Nor will the combined entity gain market power from the perspective of bargaining theory. Concerns about a merger leading to an increase in bargaining power usually arise when the merging parties compete with each other for customers because the combined company would face less competitive pressure post-transaction. In the current transaction, this concern does not arise, because Comcast and TWC do not compete for customers. So the transaction does not change Comcast's incentives or next best alternatives to carrying a content provider's programming – Comcast will face the same risk post-transaction of losing subscribers to competitors if it does not carry the programming as it does today.[392]

Further, because programming providers will have the same distribution options in any given area post-transaction that they have today, the increase in Comcast's subscriber base is unlikely to have a meaningful impact on its bargaining power. With 22 million customers, Comcast is a significant MVPD in programming negotiations, and it seems unlikely – as a real-world matter – that the addition of 8 million (or even 11 million) more customers creates any truly new bargaining power that will somehow tip the scales in a dramatic fashion against either large or small programmers. To the contrary, programmers with valuable content have significant bargaining power of their own, as reflected in the fact that programming costs have

391 Rosston/Topper Decl. ¶ 179.

392 *See id.* ¶¶ 190-92.

outstripped inflation.[393] Programming costs of Comcast, TWC, and Charter have increased, on average, by 54 percent in the last five years.[394] Indeed, over the period from 2004 to 2012, Comcast and TWC's programming costs have also significantly outpaced increases in average cable retail prices, further underscoring programmers' bargaining power.[395]

As for smaller independent programmers,[396] Comcast is a recognized supporter of such voices, some of which have already spoken in support of this transaction based on Comcast's consistent support for independent programming voices.[397] The company carries over 160 independent networks, including many small, diverse, and international networks. And it is well into the process of fulfilling the commitment it made in connection with the NBCUniversal transaction to launch 10 new independent networks, including at least eight owned or managed by minority groups.[398]

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393 *See id.* ¶¶ 193-94.

394 Tony Lenoir, *Cost of Programming Jumps 54% in 5 years*, SNL Kagan, Aug. 28, 2013, http://www.snl.com/InteractiveX/article.aspx?BeginDate=08/28/2013&ID=24720103&KPLT=2; *see also* Rosston/Topper Decl. ¶ 194.

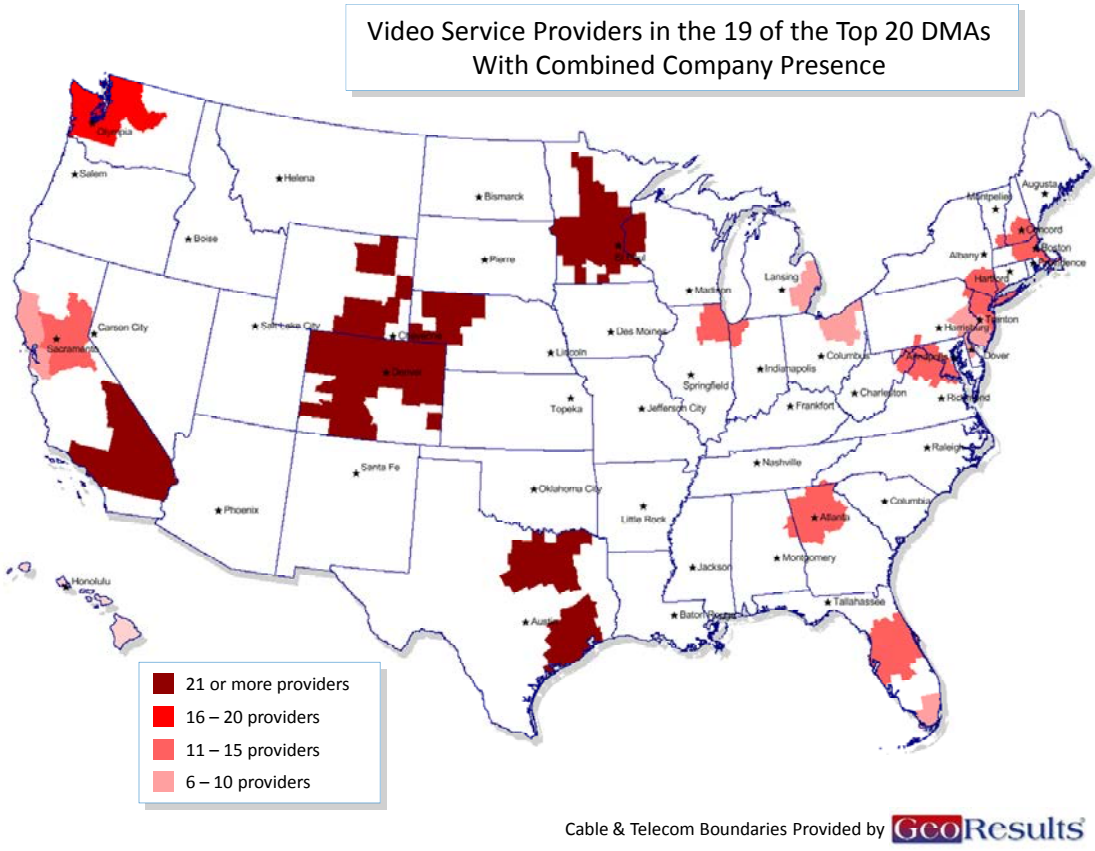
395 Based on the cumulative changes in programming costs reported in Comcast's and TWC's annual public filings and the average expanded basic cable price in the FCC's *Report on Cable Industry Prices* from 2004 to 2012. *See Statistical Report on Average Rates for Basic Service, Cable Programming Service, and Equipment*, Report on Cable Industry Prices, 28 FCC Rcd. 9857 (2013).

396 Independent programmer as used here means a programmer that is not an affiliate of Comcast or of a top 15 programming network, as measured by annual revenues. This is the definition used in the Comcast-NBCUniversal transaction. *Comcast-NBCUniversal Order*, App. A § III(3).

397 *See, e.g.*, Charles Segars, CEO, Ovation, Letter to the Editor, L.A. Times, Feb. 16, 2014, *available at* http://www.latimes.com/opinion/la-le-0216-sunday-comcast-time-warner-20140216,0,6966395.story#axzz2vDweABRP ("Comcast has been a good friend and ally to the independent programming community, bringing unique content to an underserved audience. . . . This merger will be a boon for unique, independent programmers."); Carl Guardino, Op-Ed., *The Benefits of Comcast's TWC Deal*, Fin. Times, Mar. 28, 2014 ("Mark Cuban, who owns AXS TV and the Dallas Mavericks basketball team, argues that a more national Comcast would enhance competition – overall he calls it a 'huge positive.'"). Sean Combs, an owner of Revolt TV, tweeted: "Congrats to @Comcast on their merger with @TWC! I commend Comcast on their diversity program! Happy to be w/both!" Sean Combs, Twitter (Feb. 13, 2014, 8:08 AM), https://twitter.com/iamdiddy/status/433996221876015104.

398 *Comcast-NBCUniversal Order*, App. A § III(3); *see also Third Annual Compliance Report*, at 3.

Nor is there merit to the claim that the combined company's presence in 19 of the top 20 DMAs creates a bottleneck for programmers. As noted above, DMAs are not relevant competitive markets for MVPD services; they are just Nielsen constructs for rating measurement purposes.[399] Nevertheless, it bears noting that programmers have access in all DMAs to two nationwide DBS distributors, and, increasingly, online video distributors. And, as noted above, Comcast will face significant competition in *all* these DMAs. Indeed, as shown in the map below, there will be 11 or more MVPDs in most of these 19 DMAs where the combined company will have a presence and at least six MVPDs in all of them.[400]



399 *See* Rosston/Topper Decl. ¶ 181.

400 In all events, the transaction only *adds* a presence that Comcast did not previously have in three DMAs (Los Angeles, Dallas/Fort Worth, and Cleveland), since Comcast already *had* a presence in 16 of the top 20 DMAs at issue.

A specific listing of the number of video providers by DMA is set out below:

Video Providers in the Top 20 Designated Market Areas (DMAs)

Rank	DMA	Providers (excluding Comcast and TWC)	Total	Post-Transaction
1	New York, NY	Dish, DirecTV, Verizon, RCN, Cablevision, and 6 others	11	No Change
2	Los Angeles, CA	Dish, DirecTV, Verizon, AT&T, Charter, and 16 others	21	No Change
3	Chicago, IL	Dish, DirecTV, AT&T, RCN, WOW!, and 7 others	12	No Change
4	Philadelphia, PA	Dish, DirecTV, Verizon, RCN, Atlantic Broadband, and 4 others	9	No Change
5	San Francisco-Oakland-San Jose, CA	Dish, DirecTV, AT&T, Charter, WARPSPEED, and 4 others	9	No Change
6	Dallas-Ft. Worth, TX	Dish, DirecTV, Verizon, AT&T, Cable One, and 28 others	33	No Change
7	Washington, DC (Hagerstown, MD)	Dish, DirecTV, Verizon, RCN, Atlantic Broadband, and 8 others	13	No Change
8	Atlanta, GA	Dish, DirecTV, AT&T, Windstream, WOW!, and 9 others	14	No Change
9	Boston, MA (Manchester, NH)	Dish, DirecTV, Verizon, RCN, MetroCast, and 7 others	12	No Change
10	Houston, TX	Dish, DirecTV, AT&T, CenturyLink, Consolidated Communications, and 24 others	29	No Change
11	Phoenix, AZ *(Comcast and TWC have no presence)*	---	13	No Change
12	Detroit, MI	Dish, DirecTV, AT&T, WOW!, Charter, and 5 others	10	No Change
13	Seattle-Tacoma, WA	Dish, DirecTV, Frontier, Coast Communications, Wave, and 11 others	16	No Change
14	Minneapolis-St. Paul, MN	Dish, DirecTV, WOW!, CenturyLink, Consolidated Communications, and 36 others	41	No Change
15	Tampa-St. Petersburg, FL	Dish, DirecTV, Verizon, WOW!, CenturyLink, and 6 others	11	No Change
16	Miami-Ft. Lauderdale, FL	Dish, DirecTV, AT&T, Advanced Cable Communications, Atlantic Broadband, and 2 others	7	No Change
17	Sacramento-Stockton-Modesto, CA	Dish, DirecTV, Sierra Nevada Communications, WARPSPEED, Wave, and 9 others	14	No Change
18	Denver, CO	Dish, DirecTV, Consolidated Communications, Suddenlink, Midcontinent, and 16 others	21	No Change
19	Cleveland, OH	Dish, DirecTV, AT&T, WOW!, Fairpoint, and 4 others	9	No Change
20	Orlando-Daytona Beach-Melbourne, FL	Dish, DirecTV, AT&T, Grande Communications, CenturyLink, and 7 others	12	No Change

Source: GeoResults

Finally, as Drs. Rosston and Topper explain, the transaction does not give Comcast any incremental ability or incentive to discriminate on the basis of affiliation in the carriage of RSN programming. Comcast would lose subscribers to other MVPDs if were to fail to carry RSNs its customers want to watch, and any existing or newly affiliated networks would gain little or no benefit from that strategy given the wide variety of unaffiliated viewing options.[401]

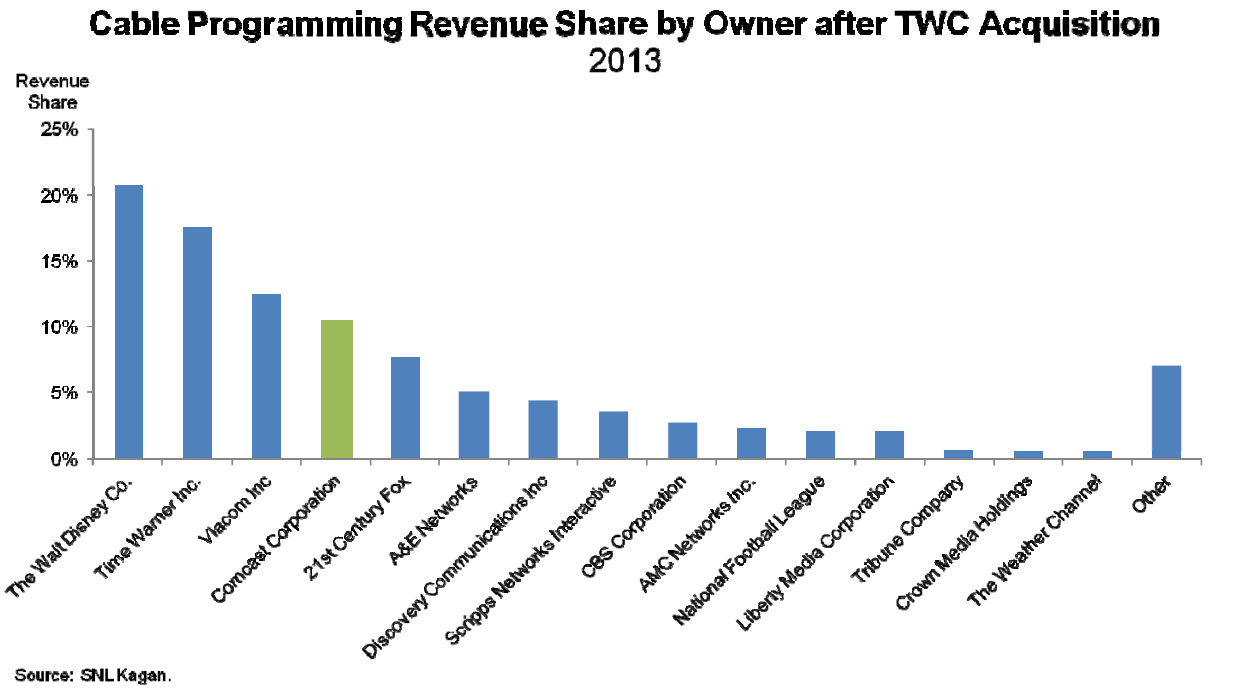
401 *See id.* ¶¶ 202-05.

3. Combining Comcast's and TWC's Programming Assets Will Not Give Rise to Any Competitive Harm.

The programming marketplace is highly dynamic and competitive, with hundreds of national programming networks and dozens of regional programming networks competing for consumers' attention. Because TWC accounts for only a tiny percentage of the programming industry, the combination of Comcast and TWC will not materially change competition among programmers. Indeed, after the completion of the transaction, the combined company will rank as the fourth-largest owner of national programming networks (by revenue), after Disney/ABC, Time Warner, and Viacom – the same rank that Comcast has today.

There will be no change in the concentration of ownership of national networks as a result of this transaction. TWC does not have an ownership interest in any national broadcast network, and TWC does not have majority ownership of any national cable programming network. Instead, TWC has only small, non-controlling ownership interests in two national cable programming services (iN Demand and MLB Network) – services in which Comcast already has attributable interests. As shown in the chart below, by revenue, the combined entity's share of national cable programming networks will be less than 11 percent.[402]

[402] *See* Rosston/Topper. Decl. ¶ 212.



Source: SNL Kagan.

Notes: Revenue is defined as net advertising revenue plus affiliate fee revenue. Information based on SNL Kagan estimates of cable network revenues and ownership, except for the cases described below. Revenue data are estimated as of 2/5/14 and ownership is estimated as of January 2014. Regional Sports Networks are not included.

Revenues for one network are not split between owners; they are attributed to the majority owner if there is one (greater than 50% ownership stake); if there is no majority owner, revenues are assigned to a hypothetical entity with the same name as the network. If the ownership shares are not provided by SNL Kagan, or are only provided for some shareholders such that a majority owner is not discernible, or the majority owner is listed as "Other", the network is considered to have no majority owner. All networks that are co-owned by Hearst and Walt Disney are attributed to the ownership entity "A&E Networks." Premium networks are included. SNL Kagan's Economics of Basic Cable Networks does not include ownership information on these networks, so the ownership is determined by annual reports or 10-Ks of their owners. Ownership of EPIX is attributed to Viacom Inc.

In fact, Comcast's share of national cable programming will be lower than immediately after the Comcast/NBCUniversal transaction. That is because, in 2012, Comcast sold its interest in 17 A&E television networks (counting six HD feeds as separate networks) to Disney and Hearst, a sale that the Commission called "the most significant change in the number of cable MVPD-affiliated national networks" since the last Video Competition Report.[403]

As to regional and local cable programming, Comcast and TWC do not own any regional or local cable networks that compete with each other. This is not surprising given the different

403 *Fifteenth Annual Video Competition Report* ¶ 39.

geographies served by Comcast's and TWC's cable systems.[404] Therefore, the transaction will not reduce competition among cable networks in any regional or local market.[405]

There is equally no merit to the claim that, as a result of this transaction, the combined company will "control" any relevant market for sports programming.[406] There are dozens of national sports networks or networks that show major league professional and other sports programming (including ESPN, Fox, CBS, and the Turner families of networks), and Comcast owns controlling interests in only two national sports networks (NBCSN and Golf Channel). By virtue of this transaction, Comcast will be gaining ownership of only one major additional English-language RSN that features major professional league sports.[407] Fox will continue to control many more such RSNs across the country than does Comcast.[408]

In all events, this putative concern, not seriously raised by this transaction, is redressed by the NBCUniversal Conditions, which grant MVPD and OVD purchasers of programming defined rights to arbitrate for Comcast-controlled programming under specified circumstances,

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404 Comcast and TWC each have a minority ownership interest in SportsNet New York, an RSN controlled by the New York Mets.

405 In any event, Comcast's increased scale from the transaction does not increase Comcast's incentive or ability to engage in a profitable strategy of withholding content from competing MVPDs. *See* Rosston/Topper Decl. ¶¶ 211-31 (explaining why the transaction does not give Comcast an increased incentive or ability to permanently or temporarily foreclose the combined company's programming – NBC O&Os, Telemundo O&Os, NBCUniversal national cable networks, and Comcast and TWC RSNs – from MVPD rivals).

406 Brooks Boliek, *Big Score in Comcast Deal: Sports Programming*, Politico Pro (Mar. 14, 2014).

407 Comcast, through the acquisition, will own Time Warner Cable SportsNet, which features the games of the Los Angeles Lakers. Comcast will assume TWC's rights and obligations as to Time Warner Cable SportsNet LA, which features the games of the Los Angeles Dodgers, and for which TWC provides affiliate sales, ad sales, and certain other production and technical services. The three other RSNs that carry major league sports are Spanish-language channels – Time Warner Cable Deportes (featuring the Lakers), Time Warner Cable Channel 858 (a local channel which shows a simulcast of certain Angels and Clippers games from the Fox feed), and Canal de Tejas (a local channel which shows a simulcast of certain Rangers, Mavericks, and Spurs games from the Fox feeds). TWC's other networks that qualify as "RSNs" are local-focused channels that show college and high-school sports programming.

408 Fox has controlling interests in 18 such RSNs. SNL Kagan (last visited Apr. 5, 2014).

and provide MVPDs with standalone arbitration rights for RSNs.[409] Notably, these arbitration rights have never been invoked by an MVPD in more than three years.

4. The Transaction Will Not Result in Any Competitive Harm to Advertising Markets.

Post-transaction, Comcast will not have the ability to act anticompetitively in the advertising market. Rather, this market is robustly competitive, and the transaction will help Comcast become a stronger competitor.

As to local advertising, New York is the only DMA where Comcast and TWC both sell cable spot advertising. But advertising on a Comcast system is not a substitute for advertising on a TWC system, since the systems serve different customers. Similarly, there are few DMAs – New York, Los Angeles, and Dallas/Fort Worth – where Comcast currently owns an NBC broadcast station and TWC owns a cable system. The Commission and DOJ have found that local spot advertising on a cable system is not a close substitute for advertising on a local broadcast station. Comcast's experience in advertising sales is consistent with this finding – the degree of substitutability is constrained by the limited supply of cable spot advertising space in comparison to local broadcast advertising space. In addition, an advertiser is able to target portions of a DMA through cable spot advertising, but must purchase local broadcast advertising on a DMA-wide basis. For those reasons, neither the Commission nor the DOJ considers cable advertising and broadcast advertising to be in the same product market.[410]

Regardless, in each DMA, advertisers will continue to enjoy a number of alternative outlets that compete vigorously for local advertising dollars, with varying degrees of

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[409] TWC licenses NY1 to Cablevision and Bright House Networks, but does not license any other local news channels to other MVPDs today. Thus, the only competitive effect of this transaction with respect to that programming is that it will be subject to arbitration remedies.

[410] *See infra* Section V.B.6.

substitutability. As Drs. Rosston and Topper explain, "[b]ecause [Comcast and TWC] do not represent competing choices for an advertiser seeking to reach a given cable household, combining their complementary systems will not reduce the array of choices by which an advertiser can reach a given household today."[411] This includes other MVPDs, as well. In addition, the alternatives include radio, newspapers, outdoor display advertising, and the Internet. Thus, Drs. Rosston and Topper conclude:

> Competition in the advertising industry is robust, and the current advertising services offered by Comcast and TWC compete with many other media. Moreover, the lack of overlap between Comcast and TWC systems and the limited programming assets owned by TWC mean that the transaction will not reduce the advertising options available to national, regional, or local advertisers.[412]

D. There Is No Plausible Theory That the Transaction Will Facilitate "Foreclosure" or Other Exclusionary Conduct.

A transaction involving vertically integrated cable distributors may give rise to competitive concerns only if it results in the combined company having substantial market power in either upstream (programming) or downstream (distribution) markets. The Internet, video programming, and video distribution businesses are all highly competitive, and the proposed combination of Comcast and TWC will not have substantial market power in any of these markets.

1. No Threat of Competitive Harm from Potential Foreclosure of Last-Mile Internet Access.

The combined company will not have the incentive or ability to degrade or otherwise be a "bottleneck" for access to its broadband customers, for at least five reasons.

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411 Rosston/Topper Decl. ¶ 240; *see also id.* ¶¶ 241-46 (explaining why the combination of local cable, broadcast, and regional programming assets do not reduce competition in the sale of local or regional video advertising).

412 *Id.* ¶ 237.

First, the services that edge providers offer are complementary to Comcast's broadband business, whose value is enhanced by edge providers' offerings. Comcast needs edge providers to offer attractive content, applications, and services so that existing Internet customers continue to demand Comcast's broadband service and new Internet consumers choose Comcast.[413] Indeed, as Dr. Israel explains:

> The value of an ISP's broadband service is largely defined by the quality of the edge services that are available when using the service and whether the speed and reliability of the broadband service permits full utilization of those services. Hence, attractive products from edge providers increase demand for broadband service.[414]

Therefore, any action that the combined firm might undertake to harm edge providers would degrade its broadband service and reduce the profits it could earn.[415] For example, if Comcast were to impair its customers' access to popular content such as online video, it would quickly pay a steep price – both economically in terms of lost subscribers or reduced demand for broadband services, and in the court of public opinion.[416] Providing high-quality broadband service provides Comcast with the significant percentage of its revenue and an even higher percentage of Comcast's and TWC's operating cash flow,[417] which is why Comcast has invested substantially in upgrading its networks to deploy faster speeds and more reliable performance.[418]

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413 *See* Israel Decl. ¶ 36.

414 *See. id.*

415 *Id.* ¶ 37.

416 *See AT&T-BellSouth Order* ¶ 117 ("[T]here is substantial competition in the provision of Internet access services. Broadband penetration has increased rapidly over the last year . . . . Increased penetration has been accompanied by more vigorous competition. Greater competition limits the ability of providers to engage in anticompetitive conduct since subscribers would have the option of switching to alternative providers if their access to content were blocked or degraded.") (internal citations omitted).

417 Israel Decl. ¶ 38.

418 *See supra* Section IV.A.

Thus, any strategy that reduces demand for broadband services would be costly to the combined firm's profits.[419] As Dr. Israel describes it:

> [G]iven the importance of broadband to the combined firm's bottom line, . . . a strategy of harming broadband to help video is likely less attractive than a pro-competitive alternative, in which Comcast invests to offer high quality video services (including online video services). Such efforts are pro-competitive, as they are likely to induce competitive responses from edge providers, which will have an incentive to improve their own online offerings. And because they stimulate demand for Comcast's broadband product, such improvements by other edge providers further benefit Comcast's broadband business. In contrast, the anti-competitive alternative of attempting to harm OTT edge providers by erecting "tollbooths" or otherwise foreclosing access to Comcast's broadband subscribers—were it even feasible (which it is not . . .)—would harm Comcast's broadband business. Thus, such an approach is likely less economically attractive than the pro-competitive strategy [through] which Comcast both expands its video business *and* benefits its broadband business.[420]

Second, as detailed earlier, the combined company will face substantial competition in the provision of broadband services from a variety of sources – from providers of DSL (including FTTN), FTTP, wireless, and other types of broadband service (including cable overbuilders, satellite, and fixed wireless).[421] Broadband service is sold on a local basis, and individual customers have ample and increasing choice. For this reason, as Dr. Israel explains, the combined company's static share of the national universe of broadband subscribers (from 20 to less than 40 percent, depending on the calculation) is irrelevant to whether the combined company could act as a bottleneck or harm edge providers:

> These competitive alternatives provide consumers with other ways to receive an edge provider's content or service should Comcast limit its customers' access to that edge provider. Edge providers (or their agents) can negotiate advantageous deals with those alternative providers (or at least threaten to do so when negotiating with the combined firm) if useful. Hence, any attempt by the

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419 *See SBC-AT&T Order* ¶ 142 (noting the merged entity's strong incentives to provide competing VoIP services to retain customers because of their demand for such services).

420 Israel Decl. ¶ 39.

421 *Id.* ¶¶ 43-47; *see also supra* Section IV.B.1.

> combined firm to impede or condition edge providers' access to its customers would risk loss of those customers to other broadband providers.[422]

Third, it is a misconception that Comcast or TWC serves as a "gatekeeper" controlling access to its own last mile and to end users. Rather, edge providers have multiple avenues for reaching Comcast's broadband subscribers, undermining Comcast's ability to deny access or degrade service to such providers (even if it wished to, which it does not, and even if Comcast's customers had no other options, which they do).

The hyper-interconnectedness of the Internet backbone means that any major player, such as Comcast or TWC, has dozens of paths into its network on which huge volumes of undifferentiated traffic from millions of sources travels at any given moment. Comcast and TWC have each worked cooperatively together and with other companies to interconnect their networks in mutually beneficial ways through peering and transit arrangements. Comcast itself has over 40 settlement-free routes into its network and TWC has approximately **[[ ]],** and both have many other substantial commercial peering and transit connections with CDNs, ISPs, and larger edge providers, among others. Any edge provider therefore can reach either company's last mile-network through a third party *without having any "permission" or direct relationship (paid or otherwise) with Comcast or TWC*. And, Dr. Israel explains, no peer or transit provider or CDN allows Comcast or TWC to decide which edge provider's traffic it will accept from among the millions of bits being transmitted on any individual route:

> [I]f 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

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422 *Id.* ¶ 40.

> or even several links does not prevent the edge provider from accessing the Comcast network. 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 by inducing consumers to downgrade their broadband service or switch to other broadband options due to the loss of valuable content.[423]

Maintaining a wide variety of open routes into its networks is critical to Comcast's business: Comcast needs to maintain connectivity to many Internet end points that it does not serve directly, both to deliver its customers' traffic to *others* (since Comcast not only serves residential "eyeball" customers, but also serves businesses, content providers, CDNs, and others as a transit provider, and sends such traffic off-net to other providers)[424] and to receive traffic from other Internet end points destined for its customers.[425] Its business is offering this ubiquitous Internet connectivity to its customers; otherwise it will lose customers.[426] Thus, there will always, necessarily, be many "open" routes into Comcast's network provided by third parties – which ensures that the overwhelming majority of edge providers' traffic flows into Comcast's last-mile network without the edge provider having to interact with Comcast directly.

This is not unique to Comcast: It is how the Internet works. The Internet is a network of networks that depends on a web of transit providers and directly connected peers and others, all maintaining diverse flows of traffic. As the Commission concluded in approving Level 3's acquisition of Global Crossing, transit and peering can readily be obtained from any of dozens of

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423 *Id.* ¶¶ 82-83.

424 *Id.* ¶ 83.

425 Contrary to what many believe, Comcast has a rough balance of traffic into and out of its network.

426 *See id.* ¶¶ 81-88; *see also Level 3-Global Crossing Order* ¶ 27 (noting that merged entity would "lack incentives to selectively de-peer or degrade its connections for anticompetitive reasons" because if it did so, it "would lose customers to its remaining peers, because those entities would still enjoy ubiquitous Internet connectivity and, hence, would be more attractive to customers").

providers on a nationwide basis: "[W]e note that the number of Tier 1 ISPs appears to have grown since 2005. . . . [I]f we were to consider the role of non-Tier ISPs in the marketplace, there may be as many as 38 providers that sell transit or offer peering on a nationwide basis."[427] At the same time, the Commission acknowledged, that "there have been changes in how Internet traffic is transported," with specific reference to the growing role of CDNs in the marketplace.[428] And given the proliferation of transit, prices for that service have dropped precipitously over the past decade – which in turn has forced down the prices for direct peering as well.[429]

Thus, for low, competitive prices, edge providers can purchase transit from any of these companies that peer with Comcast or they can use a CDN service from a multitude of providers (e.g., Akamai, Limelight, Level 3, and many others), all of which have interconnection agreements with Comcast.[430] Or a provider can opt to interconnect directly with Comcast under a market-based economic arrangement that offers an economically attractive alternative to indirect transit – as the recent and much discussed Netflix-Comcast agreement illustrates.[431] In fact, Comcast has thousands of business transit connections to its network, including dozens of substantial commercial peering and transit arrangements, for large entities that do not meet its

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427 *See Level 3-Global Crossing Order* ¶¶ 28-29 (concluding that the merger of two "Tier 1" ISPs would not result in public interest harm and that the Tier 1 ISP market was competitive); *see also SBC-AT&T Order* ¶¶ 108-39.

428 *Level 3-Global Crossing Order* ¶¶ 16 n.58, 20 n.69 ("CDNs have taken advantage of the rise of bandwidth-intensive content and have been able to provide service to content providers that historically would have purchased transit.") (internal citations omitted)).

429 *See* William B. Norton, *The Internet Peering Playbook* 33 (2013) (estimating that transit prices have fallen from $1200/Mbps in 1998 to $0.94 Mbps in 2014).

430 Israel Decl. ¶¶ 77, 79.

431 Dan Rayburn, *Here's How the Comcast & Netflix Deal is Structured, With Data & Numbers*, StreamingMedia.com (Feb. 27, 2013), http://blog.streamingmedia.com/2014/02/heres-comcast-netflix-deal-structured-numbers.html; *see also* Richard Bennett, *Paid Peering and the Internet of Video Things*, High Tech Forum (Mar. 28, 2014), http://www.hightechforum.org/paid-peering-the-internet-of-video-things/.

settlement-free peering terms.[432] As Dr. Israel explains: "[T]he 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."[433] Thus, Dr. Israel concludes that "the combined firm will lack the incentive and ability to close off or substantially limit these access points into its network."[434]

Fourth, the transaction will not shift bargaining power in a way that would prevent edge providers from competing effectively, harm consumers, or reduce welfare. Concerns about increased bargaining power typically arise in the context of transactions in which the merging parties are horizontal substitutes for each other, but Comcast and TWC do not compete with one another and are therefore not substitutes.[435] Indeed, the transaction may actually *reduce* the combined entity's bargaining power because, among other reasons, counterparties will have an increased incentive to resist concessions that would apply over a greater number of consumers.[436] As Dr. Israel explains:

> *There is no economic basis to conclude that the transaction will shift bargaining power in a way that will prevent edge providers from competing effectively or harm consumers or reduce welfare*. . . . [T]he established literature shows that if a buyer becomes "pivotal" for a supplier's survival, that buyer may end up with *less* incentive and ability to negotiate aggressively against that supplier. For example, a rational buyer will recognize that, given its pivotal role, aggressive

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432 Israel Decl. ¶ 78.

433 *Id.* ¶ 81.

434 *Id.*

435 *Id.* ¶¶ 90-97.

436 *Id.* ¶¶ 101-02.

> negotiation may harm the supplier and thus lessen its ability to produce high-quality inputs to the buyer's own product.[437]

Fifth, the only "last-mile" control Comcast or TWC has is when traffic is, finally, delivered to its network, and it is at this point – on the last-mile network – that the Open Internet prohibitions apply.[438] Those rules were adopted to address broadband providers' incentives to: (1) "block or otherwise disadvantage specific edge providers or classes of edge providers"; (2) "increase revenues by charging edge providers, who already pay for their own connections to the Internet, for access or prioritized access to end users"; and (3) "degrade or decline to increase the quality of the service they provide to non-prioritized traffic," if they were permitted to charge edge providers for prioritization.[439] In particular, the rules prohibit blocking and unreasonable discrimination of lawful network traffic and require that Comcast disclose certain information about its broadband Internet service, including network management practices, service characteristics, and commercial terms.[440]

Comcast's obligation to abide by all of the Open Internet rules, therefore, protects against any anticompetitive concerns arising from the transaction regarding the provision of high-speed Internet access services. Comcast is currently the only broadband provider legally bound by the now-vacated prohibitions on blocking and unreasonable discrimination, and the transaction will extend those protections to TWC's broadband customers. Thus, a significant number of

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437 *Id.* ¶ 14.

438 *See generally Open Internet Order*; *see also Comcast-NBCUniversal Order* ¶¶ 94, 285 n.732 ("Comcast and Comcast-NBCU shall also comply with all relevant FCC rules, including the rules adopted by the Commission in GN Docket No. 09-191, and, in the event of any judicial challenge affecting the latter, Comcast-NBCU's voluntary commitments concerning adherence to those rules will be in effect."); Modified Final Judgment § V.G, *United States v. Comcast Corp.*, No. 11-cv-00106 (D.D.C. Aug. 21, 2013), *available at* http://www.justice.gov/atr/cases/f300100/300146.pdf ("*Comcast-NBCU Modified Consent Decree*").

439 *Open Internet Order* ¶¶ 21, 24, 29.

440 *Id.* ¶ 54.

additional broadband customers will benefit from the Open Internet rules as a result of this transaction. Comcast's original commitment, made in the NBCUniversal transaction, was intended to provide the Commission a fail-safe – assuring that Comcast would abide by the Open Internet rules even if they were overturned by a court. The obligation that Comcast undertook in 2011 will thus serve as a bridge to the day new Open Internet rules that apply to all ISPs are in place, and this transaction makes that bridge much wider.[441]

2. No Increased Incentive or Ability to Pursue Anticompetitive Foreclosure Strategies Against Rival MVPDs or Unaffiliated OVDs.

Another theory of raising rivals' costs that the Commission has considered in prior transactions is that a vertically integrated MVPD that owns key "must-have" programming might refuse to sell/license that programming to competing MVPDs or OVDs. By denying competitors or potential competitors access to popular programming, the argument goes, a vertically integrated MVPD might gain a competitive advantage over its rivals. The Commission has considered both whether an MVPD might permanently foreclose access to programming or whether it might engage in temporary foreclosure (or a threat of foreclosure) either to induce customers to switch video providers or as a negotiating tactic to obtain higher license fees.[442] In addition, the Commission has assessed whether a vertically integrated MVPD might restrict an OVD's access to affiliated content to forestall potential online competition.[443] In prior

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441 There have been many who have tried already, in the press, to use this transaction as an opportunity to pursue their views of the "right" economic framework for peering and transit arrangements. But, as shown above, this transaction raises no unique issues in that regard and thus is not the appropriate context for that debate. Thus, the peering-related concerns that have been suggested are not only factually inaccurate, but are not transaction-specific and are applicable to the marketplace generally. If there is a need to address these issues at all, it should be done in an industry-wide context.

442 *Comcast-NBCUniversal Order* ¶ 34; *News Corp.-Hughes Order* ¶ 79; *Adelphia Order* ¶ 121.

443 *Comcast-NBCUniversal Order* ¶ 86.

transactions, the Commission has evaluated potential foreclosure strategies with respect to national cable networks, local broadcast programming, and regional sports networks.[444]

As a preliminary matter, this issue is not transaction specific, because the bulk of Comcast's valuable content was acquired in the NBCUniversal transaction, and those concerns were addressed by conditions adopted in that proceeding. The acquisition of TWC's small amount of programming and the acquisition of approximately eight million more subscribers is simply not sufficient to require reopening of that analysis, or to garner renewed or greater concern, especially in the absence of any issues under the existing conditions (as noted above, no MVPD has ever employed these conditions). That said, as shown here and by Drs. Rosston and Topper, post-transaction, Comcast will have neither the incentive nor the ability to engage in such a withholding strategy with respect to any category of programming following this transaction for several independent reasons.

First, Comcast lacks market power as a seller of national programming content, and this transaction will have no effect on either Comcast's share of national programming networks or local broadcast stations. Comcast already has an attributable interest in the only two national programming networks (MLB Network and iN Demand) in which TWC also has an ownership interest. Comcast's current share of national cable programming networks is less than 11 percent by revenue and will not increase as a result of this transaction.[445]

Similarly, if RSNs are added to the national programming network mix, Comcast has a share of 11.61 percent by revenue and TWC has a share of 0.25 percent by revenue.[446] Adding

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444 *News Corp.-Hughes Order* ¶ 60.

445 *See* Rosston/Topper Decl. ¶¶ 212-13.

446 *Id.* ¶ 212. This figure does not include SportsNet LA because that network just launched on February 25, 2014 and has yet to generate any appreciable revenue.

TWC's programming interests to Comcast's interests results in a *de minimis* increase in share to 11.86 percent by revenue. And because TWC has no ownership interest in any local broadcast stations, Comcast's share of that programming segment will remain unchanged, and there is no basis to conclude that this transaction will in any way change Comcast's incentives or ability to foreclose broadcast programming.[447]

Following the transaction, networks affiliated with Comcast will represent only a small portion of the total market for cable programming. In fact, Comcast's share of national programming networks has *declined* since the NBCUniversal transaction. Moreover, the programming market is highly dynamic and competitive, and Comcast's affiliated programming networks face significant competition.[448] Indeed, if consumers are denied access to NBCUniversal content through their MVPD, many customers might instead watch substitute programming networks (e.g., TNT instead of USA Network) rather than switch video providers – or obtain NBCUniversal content through alternative non-subscription outlets – thus frustrating the foreclosure strategy. As Drs. Rosston and Topper explain, "foreclosing other MVPDs' access to Comcast's national cable networks would not benefit Comcast's MVPD service as it would not only cause the networks to lose revenues but also would likely not lead to many subscribers of other MVPDs switching to Comcast."[449] As a result, Comcast lacks the necessary market power to implement a successful temporary or permanent foreclosure strategy.

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447 *See id.*. ¶¶ 219-22.

448 *See id.* ¶ 223. *See News Corp.-Hughes Order* ¶ 129 ("general entertainment and news cable programming networks," like much of Comcast's affiliate programming networks, "participate in a highly competitive segment of [the] programming market with available reasonably close programming substitutes"). As noted above, in each relevant area in which the combined entity's cable systems and affiliated O&Os "overlap," consumers would enjoy many alternatives, including at least [seven] non-NBCUniversal broadcast stations as well as other media.

449 Rosston/Topper Decl. ¶ 223.

Second, Comcast lacks the incentive to pursue any temporary or permanent foreclosure strategy because its costs would outweigh any potential benefits. To begin with, refusing to license content to other MVPDs would undermine the business model of Comcast's affiliated programming networks, resulting in substantial lost licensing fees and advertising revenues to the combined company. That is especially true now that NBCUniversal has begun to collect retransmission consent fees.[450] In addition, Comcast would stand to capture only a portion of any diverted MVPD subscribers, as diverted customers may choose to subscribe to another competing MVPD rather than Comcast. If Comcast were to attempt to foreclose national or regional programming from all competing MVPDs, that would have an extremely destructive effect on the business of the affiliated cable networks. In sum, any effort to withhold affiliated programming from competing MVPDs would not be in the combined company's overall economic interest.

Third, even if there were any concern here, the Commission's existing program access regulations[451] and the NBCUniversal Conditions would fully mitigate it. In particular, the *Comcast-NBCUniversal Order* provides that MVPDs "may choose to submit a dispute with Comcast-NBCU over the terms and conditions of carriage of Comcast-NBCU affiliated programming to commercial arbitration"[452] Notably, this protection has never been invoked.

The *Comcast-NBCUniversal Order* also provides that OVDs must receive "non-discriminatory access to Comcast-NBCU video programming," either on the same terms and conditions that are made available to MVPDs or on terms comparable to those offered to OVDs

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450 *Id.* ¶ 219.

451 *See generally* 47 C.F.R. §§ 76.1000-1004.

452 *Comcast-NBCUniversal Order* ¶ 50.

by Comcast's non-vertically integrated peers (as defined by the Order).[453] Like MVPDs, OVDs also have the ability to arbitrate disputes in defined circumstances.[454] In addition, the conditions also provide for arbitration regarding retransmission consent disputes regarding O&Os.[455]

It is important to highlight that, to date, the NBCUniversal Conditions have almost never been invoked precisely because Comcast and NBCUniversal are licensing programming to willing buyers through marketplace negotiations. Indeed, since the NBCUniversal transaction closed, there have been no major disputes with any MVPDs regarding access to affiliated NBCUniversal programming on fair and reasonable terms. Since 2011, NBCUniversal has successfully reached comprehensive renewal agreements with, among others, Verizon, Cablevision, Charter, Dish Network, Suddenlink, Mediacom, and NCTC without resort to arbitration.[456]

Likewise, NBCUniversal has successfully licensed or renewed programming content to numerous OVDs, including Amazon, Netflix, and YouTube. Only one OVD has elected to proceed to arbitration, and those proceedings have unfolded as intended by the *Comcast-*

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453 *Id.* ¶¶ 87-88.

454 *Id.* ¶ 89.

455 *Id.* ¶ 52.

456 *See, e.g.*, Press Release, NBCUniversal, NBCUniversal and Cablevision Sign Comprehensive Content Affiliation Agreement (Nov. 5, 2012), http://stage.nbcuni.com/corporate/newsroom/nbcuniversal-and-cablevision-sign-comprehensive-content-affiliation-agreement/; Mike Farrell, NBCUniversal, Suddenlink Reach Carriage Agreement, Multichannel News (Nov. 20, 2012), *available at* http://www.multichannel.com/cable-operators/nbc-universal-suddenlink-reach-carriage-agreement/140373; Press Release, NBCUniversal, NBCUniversal and Verizon Offer TV Everywhere Rights for Top Sports, News and Entertainment Programming to Verizon FiOS TV Customers Beginning Early Next Year (Nov. 26, 2012), http://stage.nbcuni.com/corporate/newsroom/nbcuniversal-and-verizon-offer-tv-everywhere-rights-for-top-sports-news-and-entertainment-programming-to-verizon-fios-tv-customers-beginning-early-next-year/; Press Release, NBCUniversal, NBCUniversal and Mediacom Communications Announce Wide-Ranging, Multi-Year TV Everywhere Distribution Agreement (Dec. 19, 2012), http://stage.nbcuni.com/corporate/newsroom/nbcuniversal-and-mediacom-communications-announce-wide-ranging-multi-year-tv-everywhere-distribution-agreement/; Press Release, NBCUniversal, NBCUniversal Signs Multi-Year Carriage Deal With NCTC (Dec. 31, 2012), http://stage.nbcuni.com/corporate/newsroom/nbcuniversal-signs-multi-year-carriage-deal-with-nctc/.

NBCUniversal Order.[457] Real-world evidence, therefore, powerfully refutes the suggestion that Comcast has, or will have, the incentive or ability to discriminate against MVPDs or OVDs.

3. No Increased Incentive or Ability to Pursue Anticompetitive Foreclosure Strategies Against Unaffiliated Programmers.

The combined company would have no enhanced ability or incentive to pursue anticompetitive foreclosure strategies as a "buyer" of programming by withholding distribution from competing "unaffiliated" content providers (e.g., "independent" cable networks or unaffiliated providers of online video content).[458] The anticompetitive theory of harm is that an MVPD that owns cable networks may refuse to carry at least some unaffiliated cable networks in order to reduce the ability of the latter to compete for viewers, advertising, and programming. According to this theory, unaffiliated networks would be weaker competitors if a denial of carriage by a large MVPD prevented them from achieving substantial economies of scale.[459] Again, this concern is not related to the present transaction, but instead was already raised and addressed in the Comcast-NBCUniversal proceeding, and is simply not presented anew here.

First, as shown above, and as the courts have repeatedly found, a 30 percent market share does not give rise to buyer power concerns in today's highly competitive MVPD market.

Second, the additional TWC programming at issue here will not create incentive for Comcast to pursue a programming foreclosure strategy. Comcast has no ownership interest in the overwhelming majority of content that it distributes, and this will not change post-

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[457] That arbitration involved fundamental issues concerning obligations to other licensees – issues on which the Media Bureau fully agreed with NBCUniversal (the Commission's review of two applications for review is still pending). Both the arbitrator and the Media Bureau rejected claims that NBCUniversal acted unreasonably in the arbitration. *See Project Concord Order on Review* ¶¶ 63, 65 (Commission review pending).

[458] *See* Rosston/Topper Decl. ¶¶ 199-208 (explaining that the combined company will have no incremental incentive or ability to discriminate on the basis of affiliation against unaffiliated programmers).

[459] Steven C. Salop & David T. Scheffman, *Raising Rivals' Costs*, 73 Am. Econ. Rev. 267, 267-68 (1983).

transaction. Since the NBCUniversal transaction closed, the percentage of affiliated content carried by Comcast has declined. Meanwhile, Comcast has launched several new independent networks, including BBC World News, ASPiRE, Baby First Americas, Revolt, and El Rey – and as noted above, it carries over 160 fully independent networks including many that are small, diverse, and international.[460] The MVPD market is more competitive than ever, and refusing to carry unaffiliated programming content that customers demand would critically damage Comcast's core subscription business and drive customers to competing MVPDs.

Third, the Commission's existing comprehensive regulatory scheme already addresses anticompetitive denial of program carriage. In particular, the program carriage regulations prohibit MVPDs from "engag[ing] in conduct the effect of which is to unreasonably restrain the ability of an unaffiliated video programming vendor to compete fairly by discriminating . . . on the basis of affiliation or non-affiliation of vendors in the selection, terms or conditions for carriage of video programming provided by such vendors."[461] Notably, recent program carriage rulings make clear that Applicants do not and have not discriminated against independent programmers on the basis of affiliation.[462]

Fourth, real-world experience demonstrates that Comcast has no interest in refusing to carry unaffiliated content. Since the NBCUniversal transaction closed, Comcast (unlike some MVPDs) has not dropped any major cable programming network over an inability to reach a

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460 *See Third Annual Compliance Report*, at 3.

461 47 C.F.R. § 76.1301(c).

462 *See Comcast Cable Commc'ns, LLC v. FCC*, 717 F.3d 982 (D.C. Cir. 2013), *cert. denied sub nom. Tennis Channel, Inc. v. Comcast Cable Commc'ns, LLC*, 134 S. Ct. 1287 (2014) (determining that Comcast did not discriminate against Tennis Channel) (petition for further proceedings pending); *Herring Broad., Inc. v. FCC*, 515 F. App'x 655 (9th Cir. 2013) (affirming FCC determination that Comcast and TWC, *inter alia*, did not discriminate against WealthTV); *TCR Sports Broad. Holding, L.L.P. v. FCC*, 679 F.3d 269 (4th Cir. 2012) (affirming FCC determination that TWC did not discriminate against MASN).

carriage agreement. Likewise, Comcast has not lost the signal of any major broadcaster in connection with a retransmission consent dispute. There is no evidence that Comcast has sought to engage in programming foreclosure.

VI. THE TRANSACTION WILL NOT RESULT IN ANY VIOLATION OF THE COMMUNICATIONS ACT OR THE COMMISSION'S RULES.

The transaction will not result in the violation of any provisions of the Communications Act or the Commission's rules.

A. Cross-Ownership and Other Ownership Limits

Comcast's acquisition of TWC will be in full compliance with the Commission's various cross-ownership and multiple ownership rules. TWC owns no TV or radio broadcast stations, or newspaper interests, so the transaction creates no new combination that implicates the radio/television cross-ownership rule, the local TV duopoly rule, the national TV broadcast audience cap, or the newspaper/broadcast cross-ownership prohibition.

Moreover, neither Comcast nor TWC owns any attributable interest in a broadband radio service ("BRS") system or satellite master antenna television ("SMATV") system that would implicate the Commission's cable/BRS or cable/SMATV cross-ownership restrictions.[463]

The Commission has forborne from applying the LEC buyout restriction[464] to acquisitions of CLECs by cable operators, and the TWC subsidiaries that provide telecommunications services are all CLECs.[465] Therefore, the LEC buyout restriction does not apply to this transaction.

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[463] *See generally* 47 C.F.R. § 73.3555 (broadcast multiple ownership limits); *id.* § 27.1202 (cable/BRS cross-ownership limit); *id.* § 76.501(d) (cable/SMATV cross-ownership limit).

[464] *See id.* § 76.505(b) (LEC-cable buyout prohibition); *see also* 47 U.S.C. § 572(b) (statutory prohibition).

[465] *See Conditional Petition for Forbearance from Section 652 of the Communications Act for Transactions Between Competitive Local Exchange Carriers and Cable Operators*, Order, 27 FCC Rcd. 11532 ¶ 2 (2012) ("[W]e forbear from applying section 652(b) to acquisitions of competitive LECs. By granting limited forbearance from

B. Channel Occupancy Limit

The Commission's "channel occupancy" rule requires that no more than 40 percent of the first 75 channels of a cable system be used to carry affiliated national programming services. The Commission has clarified that this means that, for cable systems with 75 or more channels, at least 45 channels of that system must be unaffiliated with the system owner.[466]

To verify compliance with this rule, Comcast and TWC surveyed each of their respective cable systems and individual channel line-ups within systems that have multiple channel line-ups. For each channel line-up that included more than 45 unaffiliated channels,[467] compliance with the rule was assured and no further analysis was required. For systems with fewer than 45 unaffiliated channels, individual channel line-ups were examined and the percentage of unaffiliated channels was determined. In every case, the percentage of unaffiliated channels exceeded the requisite 60 percent. In short, Comcast and TWC confirmed that all of Comcast's cable systems and all of TWC's cable systems are and will be in compliance with the 40 percent channel occupancy limit post-closing of the transaction. Indeed, Comcast verified in the

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section 652(b), we harmonize the rules that apply to transactions between competitive LECs and cable operators regardless of which entity acquires the other.").

[466] *See Implementation of Sections 11 and 13 of the Cable Television Consumer Protection and Competition Act of 1992*, Second Report and Order, 8 FCC Rcd. 8565 ¶ 84 n.107 (1993) ("The channel occupancy limits need not necessarily apply to the first 75 channels. . . . On a system with 100 channels at least 45 channels would still be required to be devoted to the carriage of unaffiliated programming services, however, these 45 channels could be any of the system's 100 channels."); *see also Adelphia Order* ¶ 36 & n.134. Although the D.C. Circuit reversed and remanded the Commission's channel occupancy rule twelve years ago, and a decision about what to do on remand remains pending, the Commission continues to enforce the rule. *See Time Warner II*, 240 F.3d at 1139 (reversing and remanding the rule); *Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992*, Further Notice of Proposed Rulemaking, 16 FCC Rcd. 17312 ¶ 83 (2001) (inviting comment on whether "the Commission may relax, exempt specific cable operators from, or even forego imposing, vertical limits if the Commission determines that such a course of action would be justified given the prevailing market conditions"); *Adelphia Order* ¶ 38 (noting that "Comcast will be expected to comply with any revised limits that the Commission may adopt in the pending rulemaking proceeding."); *Comcast-NBCUniversal Order* ¶ 259 ("Comcast-NBCU will be expected to comply with any revised limits that the Commission adopts in these proceedings.").

[467] For purposes of this analysis, "unaffiliated" channels are those in which none of Comcast, NBCUniversal, or TWC holds an attributable interest.

NBCUniversal transaction that, after that transaction, six out of seven channels that Comcast carries would be unaffiliated. And, since then, Comcast divested its interest in the family of A&E networks, thereby increasing the percentage of carried channels that are unaffiliated.

VII. PROCEDURAL MATTERS

The subsidiaries and affiliates of TWC hold a number of licenses and authorizations issued by the FCC, including domestic and international Section 214 authorizations, transmit/receive satellite earth station licenses, receive-only satellite earth station registrations, private wireless licenses, and cable television relay service licenses. The transaction will result in the transfer of control of all of these licenses and authorizations.[468]

Given the ongoing regulatory activity of TWC and its subsidiaries, including the need for those entities to file applications with the Commission during the period in which the instant

[468] In addition to the Applications seeking consent to transfer control of TWC's licenses and authorizations to Comcast, Time Warner Entertainment–Advance/Newhouse Partnership ("TWE-A/N") and Comcast have submitted applications for the *pro forma* transfer of TWE-A/N's interest in the licenses and authorizations held by Bright House Networks, LLC ("Bright House"). TWC holds 66.67 percent of TWE-A/N, which in turn is the sole member of Bright House. TWC also provides certain services to Bright House for an annual fee, including programming and technology support; however, TWC does not share in any of the profits and losses from the operation of the Bright House systems. Advance-Newhouse Partnership (an entity in which TWC holds no legal or economic interest) holds the remaining 33.33 percent of TWE-A/N, but has exclusive day-to-day management responsibility for and *de facto* control over the operation of the Bright House systems. Advance/Newhouse Partnership's interest in TWE-A/N tracks exclusively the economic performance of the Bright House systems and, as a result, TWC's financial statements do not include the results of the Bright House systems. While the Comcast-TWC transaction therefore will technically effect a transfer of TWC's indirect legal interest in Bright House to Comcast, the transaction will not result in any actual change of control over the Bright House licenses and authorizations, because Advance/Newhouse Partnership (not TWC) currently has and will post-transaction retain all day-to-day managerial control over, and all economic interest in, all of the licenses and authorizations held by Bright House. *See, e.g.*, *2000 Biennial Regulatory Review, Amendment of Parts 43 and 63 of the Commission's Rules*, Notice of Proposed Rulemaking, 15 FCC Rcd. 24264 ¶ 15 n.33 (2000) (citing *Teléfonos de México, S.A. de C.V.*, Public Notice, 15 FCC Rcd. 1227 (WTB & IB 1999)) (stating that the acquisition by Telmex of a 50 percent *de jure* controlling interest in a CMRS subsidiary of SBC was *pro forma* because specific facts showed there was no change in *de facto* control); *Applications of Softbank Corp, Starburst II, Inc., Sprint Nextel Corp., & Clearwire Corp. for Consent to Transfer Control of Licenses & Authorizations*, Memorandum Opinion and Order, 28 FCC Rcd. 9642 ¶ 144 (2013) (rejecting two petitions for reconsideration of the *pro forma* processing of a transaction in which Sprint acquired a small additional equity interest in Clearwire, thereby effecting a transfer of *de jure* control, and finding that Sprint's acquisition of the additional interest was a *pro forma* transfer of control because it did not give Sprint *de facto* control over Clearwire). This *pro forma* transfer of TWC's indirect interest in Bright House will thus have no competitive significance.

transfer of control will remain pending at the Commission, the Applicants request that the Commission's grant of its consent to the transfer of control of these licenses and authorizations include the authority for Comcast to acquire control of: (1) any licenses and authorizations issued to TWC or to its subsidiaries or affiliates during the Commission's consideration of the transfer of control applications and the period required for the consummation of the proposed transaction following approval; and (2) applications that will have been filed by TWC or its subsidiaries or affiliates and that are pending at the time of the consummation of the proposed transaction. Such action would be consistent with prior decisions of the Commission.[469]

VIII. CONCLUSION

For the foregoing reasons, the proposed transaction between Comcast Corporation and Time Warner Cable Inc. serves the public interest, convenience, and necessity. Applicants, therefore, respectfully request that the Commission grant these applications promptly and provide for any other authority that the Commission deems necessary or appropriate to enable the Applicants to consummate the proposed transaction.

[469] *See, e.g.*, *AT&T-MediaOne Order* ¶ 185;*AT&T-TCI Order* ¶ 156; *Adelphia Order* ¶ 312; *AT&T Broadband-Comcast Order* ¶ 224; *Comcast-NBCUniversal Order* ¶ 291.

Respectfully submitted,

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April 8, 2014

EXHIBIT 1

Time Warner Cable Licenses and Authorizations

MEDIA BUREAU

CARS LICENSES	
LICENSEE	**CALL SIGN**
Oceanic Time Warner Cable LLC, FRN 0021520101	WAE-470
Oceanic Time Warner Cable LLC, FRN 0021520101	WAE-478
Oceanic Time Warner Cable LLC, FRN 0021520101	WAX-743
Oceanic Time Warner Cable LLC, FRN 0021520101	WBM-742
Oceanic Time Warner Cable LLC, FRN 0021520101	WBM-744
Oceanic Time Warner Cable LLC, FRN 0021520101	WLY-376
Oceanic Time Warner Cable LLC, FRN 0021520101	WLY-402
Oceanic Time Warner Cable LLC, FRN 0021520101	WLY-415
Oceanic Time Warner Cable LLC, FRN 0021520101	WLY-713
Time Warner Cable Pacific West LLC, FRN 0021520077	KB-60101
Time Warner Cable Pacific West LLC, FRN 0021520077	KD-55007
Time Warner Cable Pacific West LLC, FRN 0021520077	WAE-606
Time Warner Cable Pacific West LLC, FRN 0021520077	WHZ-293
Time Warner Cable Pacific West LLC, FRN 0021520077	WHZ-301
Time Warner Cable Pacific West LLC, FRN 0021520077	WLY-269
Time Warner Cable Pacific West LLC, FRN 0021520077	WLY-662
Time Warner Cable Pacific West LLC, FRN 0021520077	WLY-893
Time Warner Cable Pacific West LLC, FRN 0021520077	WSJ-903

CARS LICENSES	
LICENSEE	**CALL SIGN**
Time Warner Cable Midwest LLC, FRN 0021519962	KD-55034
Time Warner Cable Texas LLC, FRN 0021552963	KD-55017
Time Warner Cable Texas LLC, FRN 0021552963	KA-80623
Time Warner Cable Northeast LLC, FRN 0021520002	KB-60127
Time Warner Cable Northeast LLC, FRN 0021520002	KD-55003
Time Warner Cable Northeast LLC, FRN 0021520002	KD-55027
Time Warner Cable Northeast LLC, FRN 0021520002	KD-55031
Time Warner Cable Northeast LLC, FRN 0021520002	WLY-609
Time Warner Cable Northeast LLC, FRN 0021520002	WLY-852
Time Warner Cable New York City LLC, FRN 0021520085	KD-55028
Time Warner Cable Southeast LLC, FRN 0021552922	KD-55024
Time Warner Cable Southeast LLC, FRN 0021552922	KD-55026
Time Warner Cable Southeast LLC, FRN 0021552922	WLY-235

WIRELESS TELECOMMUNICATIONS BUREAU

PRIVATE WIRELESS LICENSES		
LICENSEE	**CALL SIGN**	**RADIO SERVICE**
Time Warner Cable Enterprises LLC, FRN 0021624192	WQJU341	AIRCRAFT
Time Warner Cable Enterprises LLC, FRN 0021624192	WQPT943	AIRCRAFT
Time Warner Cable Enterprises LLC, FRN 0021624192	WQQZ908	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Enterprises LLC, FRN 0021624192	WQRT266	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Oceanic Time Warner Cable LLC, FRN 0021520101	WQQS791	MICROWAVE INDUSTRIAL/BUSINESS POOL
Oceanic Time Warner Cable LLC, FRN 0021520101	WQQW415	MICROWAVE INDUSTRIAL/BUSINESS POOL
Oceanic Time Warner Cable LLC, FRN 0021520101	WQRD688	MICROWAVE INDUSTRIAL/BUSINESS POOL
Oceanic Time Warner Cable LLC, FRN 0021520101	WQRD689	MICROWAVE INDUSTRIAL/BUSINESS POOL
Oceanic Time Warner Cable LLC, FRN 0021520101	WQRD690	MICROWAVE INDUSTRIAL/BUSINESS POOL
Oceanic Time Warner Cable LLC, FRN 0021520101	WQRD691	MICROWAVE INDUSTRIAL/BUSINESS POOL
Time Warner Cable Pacific West LLC, FRN 0021520077	KBL655	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL

PRIVATE WIRELESS LICENSES		
LICENSEE	**CALL SIGN**	**RADIO SERVICE**
Time Warner Cable Midwest LLC, FRN 0021519962	KSP492	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	KXU777	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	KZM401	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	KZM402	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	WNJQ722	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	WPAJ330	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	WPPT340	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	WQCW526	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	WRN321	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Midwest LLC, FRN 0021519962	WQGH689	MICROWAVE INDUSTRIAL/BUSINESS POOL
Time Warner Cable Midwest LLC, FRN 0021519962	WQGJ785	MICROWAVE INDUSTRIAL/BUSINESS POOL
Time Warner Cable Texas LLC, FRN 0021552963	WPPN885	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL

PRIVATE WIRELESS LICENSES		
LICENSEE	**CALL SIGN**	**RADIO SERVICE**
Time Warner Cable Northeast LLC, FRN 0021520002	KP3939	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Northeast LLC, FRN 0021520002	WDY834	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Northeast LLC, FRN 0021520002	WPJZ742	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Northeast LLC, FRN 0021520002	WQLC436	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Northeast LLC, FRN 0021520002	WQAS388	MICROWAVE INDUSTRIAL/BUSINESS POOL
Time Warner Cable New York City LLC, FRN 0021520085	WPOB447	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable New York City LLC, FRN 0021520085	WQSG971	MICROWAVE INDUSTRIAL/BUSINESS POOL
Time Warner Cable New York City LLC, FRN 0021520085	WQSG972	MICROWAVE INDUSTRIAL/BUSINESS POOL
Time Warner Cable Southeast LLC, FRN 0021552922	KTK417	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL
Time Warner Cable Southeast LLC, FRN 0021552922	WRW654	INDUSTRIAL/BUSINESS POOL, CONVENTIONAL

INTERNATIONAL BUREAU

TRANSMIT/RECEIVE EARTH STATION LICENSES – TEMPORARY-FIXED	
LICENSEE	**CALL SIGN**
Oceanic Time Warner Cable LLC, FRN 0021520101	E080200
Time Warner Cable Midwest LLC, FRN 0021519962	E020130
Time Warner Cable Midwest LLC, FRN 0021519962	E040257
Time Warner Cable Texas LLC, FRN 0021552963	E120088
Time Warner Cable Northeast LLC, FRN 0021520002	E020046
Time Warner Cable Northeast LLC, FRN 0021520002	E020162
Time Warner Cable Northeast LLC, FRN 0021520002	E030142
Time Warner Cable Northeast LLC, FRN 0021520002	E040258
Time Warner Cable Northeast LLC, FRN 0021520002	E040450
Time Warner Cable Northeast LLC, FRN 0021520002	E050253
Time Warner Cable New York City LLC, FRN 0021520085	E010308

TRANSMIT/RECEIVE EARTH STATION LICENSES – TEMPORARY-FIXED	
LICENSEE	**CALL SIGN**
Time Warner Cable Southeast LLC, FRN 0021552922	E020012
Time Warner Cable Southeast LLC, FRN 0021552922	E020045
Time Warner Cable Southeast LLC, FRN 0021552922	E070058
Time Warner Cable Southeast LLC, FRN 0021552922	E070059
Time Warner Cable Southeast LLC, FRN 0021552922	E070060
RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Enterprises LLC, FRN 0021624192	E860675
Oceanic Time Warner Cable LLC, FRN 0021520101	E6736
Time Warner Cable Pacific West LLC, FRN 0021520077	E050104
Time Warner Cable Pacific West LLC, FRN 0021520077	E080189
Time Warner Cable Pacific West LLC, FRN 0021520077	E2187
Time Warner Cable Pacific West LLC, FRN 0021520077	E2321

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Pacific West LLC, FRN 0021520077	E2480
Time Warner Cable Pacific West LLC, FRN 0021520077	E2983
Time Warner Cable Pacific West LLC, FRN 0021520077	E3015
Time Warner Cable Pacific West LLC, FRN 0021520077	E3075
Time Warner Cable Pacific West LLC, FRN 0021520077	E3118
Time Warner Cable Pacific West LLC, FRN 0021520077	E3198
Time Warner Cable Pacific West LLC, FRN 0021520077	E3199
Time Warner Cable Pacific West LLC, FRN 0021520077	E3201
Time Warner Cable Pacific West LLC, FRN 0021520077	E3238
Time Warner Cable Pacific West LLC, FRN 0021520077	E3293
Time Warner Cable Pacific West LLC, FRN 0021520077	E4930
Time Warner Cable Pacific West LLC, FRN 0021520077	E5019
Time Warner Cable Pacific West LLC, FRN 0021520077	E5048
Time Warner Cable Pacific West LLC, FRN 0021520077	E5057
Time Warner Cable Pacific West LLC, FRN 0021520077	E5404

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Pacific West LLC, FRN 0021520077	E5961
Time Warner Cable Pacific West LLC, FRN 0021520077	E6438
Time Warner Cable Pacific West LLC, FRN 0021520077	E6474
Time Warner Cable Pacific West LLC, FRN 0021520077	E6756
Time Warner Cable Pacific West LLC, FRN 0021520077	E860336
Time Warner Cable Pacific West LLC, FRN 0021520077	E860337
Time Warner Cable Pacific West LLC, FRN 0021520077	E874223
Time Warner Cable Pacific West LLC, FRN 0021520077	E880022
Time Warner Cable Pacific West LLC, FRN 0021520077	E880393
Time Warner Cable Pacific West LLC, FRN 0021520077	E880841
Time Warner Cable Pacific West LLC, FRN 0021520077	E880852
Time Warner Cable Pacific West LLC, FRN 0021520077	E881085
Time Warner Cable Pacific West LLC, FRN 0021520077	E890025
Time Warner Cable Pacific West LLC, FRN 0021520077	E890603
Time Warner Cable Pacific West LLC, FRN 0021520077	E950223

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Pacific West LLC, FRN 0021520077	E960066
Time Warner Cable Pacific West LLC, FRN 0021520077	E960176
Time Warner Cable Pacific West LLC, FRN 0021520077	E960320
Time Warner Cable Pacific West LLC, FRN 0021520077	KB62
Time Warner Cable Pacific West LLC, FRN 0021520077	KB97
Time Warner Cable Pacific West LLC, FRN 0021520077	KK46
Time Warner Cable Pacific West LLC, FRN 0021520077	KK81
Time Warner Cable Pacific West LLC, FRN 0021520077	KM99
Time Warner Cable Pacific West LLC, FRN 0021520077	KP64
Time Warner Cable Pacific West LLC, FRN 0021520077	KP72
Time Warner Cable Pacific West LLC, FRN 0021520077	KW80
Time Warner Cable Midwest LLC, FRN 0021519962	E040017
Time Warner Cable Midwest LLC, FRN 0021519962	E2018
Time Warner Cable Midwest LLC, FRN 0021519962	E2425

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Midwest LLC, FRN 0021519962	E2426
Time Warner Cable Midwest LLC, FRN 0021519962	E2427
Time Warner Cable Midwest LLC, FRN 0021519962	E2679
Time Warner Cable Midwest LLC, FRN 0021519962	E2685
Time Warner Cable Midwest LLC, FRN 0021519962	E2985
Time Warner Cable Midwest LLC, FRN 0021519962	E3145
Time Warner Cable Midwest LLC, FRN 0021519962	E3436
Time Warner Cable Midwest LLC, FRN 0021519962	E3458
Time Warner Cable Midwest LLC, FRN 0021519962	E3505
Time Warner Cable Midwest LLC, FRN 0021519962	E3506
Time Warner Cable Midwest LLC, FRN 0021519962	E3550
Time Warner Cable Midwest LLC, FRN 0021519962	E3551
Time Warner Cable Midwest LLC, FRN 0021519962	E3952
Time Warner Cable Midwest LLC, FRN 0021519962	E4172
Time Warner Cable Midwest LLC, FRN 0021519962	E4198

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Midwest LLC, FRN 0021519962	E4338
Time Warner Cable Midwest LLC, FRN 0021519962	E4341
Time Warner Cable Midwest LLC, FRN 0021519962	E4478
Time Warner Cable Midwest LLC, FRN 0021519962	E5020
Time Warner Cable Midwest LLC, FRN 0021519962	E5437
Time Warner Cable Midwest LLC, FRN 0021519962	E5498
Time Warner Cable Midwest LLC, FRN 0021519962	E6449
Time Warner Cable Midwest LLC, FRN 0021519962	E7300
Time Warner Cable Midwest LLC, FRN 0021519962	E860321
Time Warner Cable Midwest LLC, FRN 0021519962	E865184
Time Warner Cable Midwest LLC, FRN 0021519962	E870893
Time Warner Cable Midwest LLC, FRN 0021519962	E872136
Time Warner Cable Midwest LLC, FRN 0021519962	E873416
Time Warner Cable Midwest LLC, FRN 0021519962	E873418
Time Warner Cable Midwest LLC, FRN 0021519962	E873420

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Midwest LLC, FRN 0021519962	E873614
Time Warner Cable Midwest LLC, FRN 0021519962	E880468
Time Warner Cable Midwest LLC, FRN 0021519962	E880888
Time Warner Cable Midwest LLC, FRN 0021519962	E890798
Time Warner Cable Midwest LLC, FRN 0021519962	E890832
Time Warner Cable Midwest LLC, FRN 0021519962	E900073
Time Warner Cable Midwest LLC, FRN 0021519962	E900577
Time Warner Cable Midwest LLC, FRN 0021519962	E9046
Time Warner Cable Midwest LLC, FRN 0021519962	E910224
Time Warner Cable Midwest LLC, FRN 0021519962	E9194
Time Warner Cable Midwest LLC, FRN 0021519962	E920186
Time Warner Cable Midwest LLC, FRN 0021519962	E920188
Time Warner Cable Midwest LLC, FRN 0021519962	E930031
Time Warner Cable Midwest LLC, FRN 0021519962	E930144
Time Warner Cable Midwest LLC, FRN 0021519962	E930196

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Midwest LLC, FRN 0021519962	E940078
Time Warner Cable Midwest LLC, FRN 0021519962	E9472
Time Warner Cable Midwest LLC, FRN 0021519962	E950468
Time Warner Cable Midwest LLC, FRN 0021519962	E960299
Time Warner Cable Midwest LLC, FRN 0021519962	E980458
Time Warner Cable Midwest LLC, FRN 0021519962	KF37
Time Warner Cable Midwest LLC, FRN 0021519962	KY95
Time Warner Cable Midwest LLC, FRN 0021519962	KZ28
Time Warner Cable Midwest LLC, FRN 0021519962	WB50
Time Warner Cable Midwest LLC, FRN 0021519962	WD20
Time Warner Cable Midwest LLC, FRN 0021519962	WE47
Time Warner Cable Midwest LLC, FRN 0021519962	WF88
Time Warner Cable Midwest LLC, FRN 0021519962	WG76
Time Warner Cable Midwest LLC, FRN 0021519962	WK50
Time Warner Cable Midwest LLC, FRN 0021519962	WN46

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Midwest LLC, FRN 0021519962	WN89
Time Warner Cable Midwest LLC, FRN 0021519962	WP20
Time Warner Cable Midwest LLC, FRN 0021519962	WQ55
Time Warner Cable Midwest LLC, FRN 0021519962	WR73
Time Warner Cable Midwest LLC, FRN 0021519962	WS44
Time Warner Cable Midwest LLC, FRN 0021519962	WT29
Time Warner Cable Midwest LLC, FRN 0021519962	WV36
Time Warner Cable Texas LLC, FRN 0021552963	E2889
Time Warner Cable Texas LLC, FRN 0021552963	E890831
Time Warner Cable Texas LLC, FRN 0021552963	E950214
Time Warner Cable Texas LLC, FRN 0021552963	E950394
Time Warner Cable Texas LLC, FRN 0021552963	E9530
Time Warner Cable Texas LLC, FRN 0021552963	KP85
Time Warner Cable Texas LLC, FRN 0021552963	KT59
Time Warner Cable Texas LLC, FRN 0021552963	KU69
Time Warner Cable Texas LLC, FRN 0021552963	KU72
Time Warner Cable Texas LLC, FRN 0021552963	KY61

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Northeast LLC, FRN 0021520002	E000249
Time Warner Cable Northeast LLC, FRN 0021520002	E2075
Time Warner Cable Northeast LLC, FRN 0021520002	E2573
Time Warner Cable Northeast LLC, FRN 0021520002	E2632
Time Warner Cable Northeast LLC, FRN 0021520002	E3283
Time Warner Cable Northeast LLC, FRN 0021520002	E3533
Time Warner Cable Northeast LLC, FRN 0021520002	E3542
Time Warner Cable Northeast LLC, FRN 0021520002	E3560
Time Warner Cable Northeast LLC, FRN 0021520002	E3571
Time Warner Cable Northeast LLC, FRN 0021520002	E3824
Time Warner Cable Northeast LLC, FRN 0021520002	E4158
Time Warner Cable Northeast LLC, FRN 0021520002	E4217
Time Warner Cable Northeast LLC, FRN 0021520002	E4261
Time Warner Cable Northeast LLC, FRN 0021520002	E4384
Time Warner Cable Northeast LLC, FRN 0021520002	E4385

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Northeast LLC, FRN 0021520002	E4474
Time Warner Cable Northeast LLC, FRN 0021520002	E5897
Time Warner Cable Northeast LLC, FRN 0021520002	E5905
Time Warner Cable Northeast LLC, FRN 0021520002	E6333
Time Warner Cable Northeast LLC, FRN 0021520002	E6338
Time Warner Cable Northeast LLC, FRN 0021520002	E8309
Time Warner Cable Northeast LLC, FRN 0021520002	E860969
Time Warner Cable Northeast LLC, FRN 0021520002	E870043
Time Warner Cable Northeast LLC, FRN 0021520002	E870127
Time Warner Cable Northeast LLC, FRN 0021520002	E870272
Time Warner Cable Northeast LLC, FRN 0021520002	E873722
Time Warner Cable Northeast LLC, FRN 0021520002	E8796
Time Warner Cable Northeast LLC, FRN 0021520002	E8842
Time Warner Cable Northeast LLC, FRN 0021520002	E8856
Time Warner Cable Northeast LLC, FRN 0021520002	E890026

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Northeast LLC, FRN 0021520002	E890152
Time Warner Cable Northeast LLC, FRN 0021520002	E900146
Time Warner Cable Northeast LLC, FRN 0021520002	E900679
Time Warner Cable Northeast LLC, FRN 0021520002	E940490
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Time Warner Cable Northeast LLC, FRN 0021520002	WG77
Time Warner Cable Northeast LLC, FRN 0021520002	WH47
Time Warner Cable Northeast LLC, FRN 0021520002	WL33

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Northeast LLC, FRN 0021520002	WN29
Time Warner Cable Northeast LLC, FRN 0021520002	WQ80
Time Warner Cable Northeast LLC, FRN 0021520002	WR92
Time Warner Cable Northeast LLC, FRN 0021520002	WT85
Time Warner Cable Northeast LLC, FRN 0021520002	WT93
Time Warner Cable Northeast LLC, FRN 0021520002	WV84
Time Warner Cable Northeast LLC, FRN 0021520002	WY82
Time Warner Cable Northeast LLC, FRN 0021520002	WZ42
Time Warner Cable New York City LLC, FRN 0021520085	E860649
Time Warner Cable New York City LLC, FRN 0021520085	E865064
Time Warner Cable New York City LLC, FRN 0021520085	E874282
Time Warner Cable New York City LLC, FRN 0021520085	E881207
Time Warner Cable New York City LLC, FRN 0021520085	E881208
Time Warner Cable New York City LLC, FRN 0021520085	E900314

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable New York City LLC, FRN 0021520085	E930246
Time Warner Cable Southeast LLC, FRN 0021552922	E080034
Time Warner Cable Southeast LLC, FRN 0021552922	E2084
Time Warner Cable Southeast LLC, FRN 0021552922	E2362
Time Warner Cable Southeast LLC, FRN 0021552922	E2442
Time Warner Cable Southeast LLC, FRN 0021552922	E5204
Time Warner Cable Southeast LLC, FRN 0021552922	E5489
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Time Warner Cable Southeast LLC, FRN 0021552922	E920351
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Time Warner Cable Southeast LLC, FRN 0021552922	WD41
Time Warner Cable Southeast LLC, FRN 0021552922	WE97
Time Warner Cable Southeast LLC, FRN 0021552922	WF74

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Cable Southeast LLC, FRN 0021552922	WG32
Time Warner Cable Southeast LLC, FRN 0021552922	WG36
Time Warner Cable Southeast LLC, FRN 0021552922	WG86
Time Warner Cable Southeast LLC, FRN 0021552922	WG89
Time Warner Cable Southeast LLC, FRN 0021552922	WH21
Time Warner Cable Southeast LLC, FRN 0021552922	WH89
Time Warner Cable Southeast LLC, FRN 0021552922	WN63
Time Warner Cable Southeast LLC, FRN 0021552922	WN78
Time Warner Cable Southeast LLC, FRN 0021552922	WR95
Time Warner Cable Southeast LLC, FRN 0021552922	WS37
Insight Communications Midwest, LLC, FRN 0003748365	E5828
Insight Communications Midwest, LLC, FRN 0003748365	E5921
Insight Communications Midwest, LLC, FRN 0003748365	E990037
Insight Communications Midwest, LLC, FRN 0003748365	WV66
Insight Kentucky Partners II, L.P., FRN 0001542604	E2091
Insight Kentucky Partners II, L.P., FRN 0001542604	E3703
Insight Kentucky Partners II, L.P., FRN 0001542604	E5074
Insight Kentucky Partners II, L.P., FRN 0001542604	E6334

RECEIVE-ONLY EARTH STATION REGISTRATIONS	
REGISTRATION HOLDER	**CALL SIGN**
Time Warner Entertainment–Advance/Newhouse Partnership, FRN 0003476298	E920572
Time Warner Entertainment–Advance/Newhouse Partnership, FRN 0003476298	KJ59
Time Warner Entertainment–Advance/Newhouse Partnership, FRN 0003476298	E4381
Time Warner Entertainment–Advance/Newhouse Partnership, FRN 0003476298	WQ21
Time Warner Entertainment–Advance/Newhouse Partnership, FRN 0003476298	E100101
INTERNATIONAL SECTION 214 AUTHORIZATIONS	
AUTHORIZATION HOLDER	**FILE NUMBER**
TWCIS HoldCo LLC, FRN 0020222733	ITC-214-20030117-00043
Insight Midwest Holdings, LLC, FRN 0005017827	ITC-214-20040723-00514

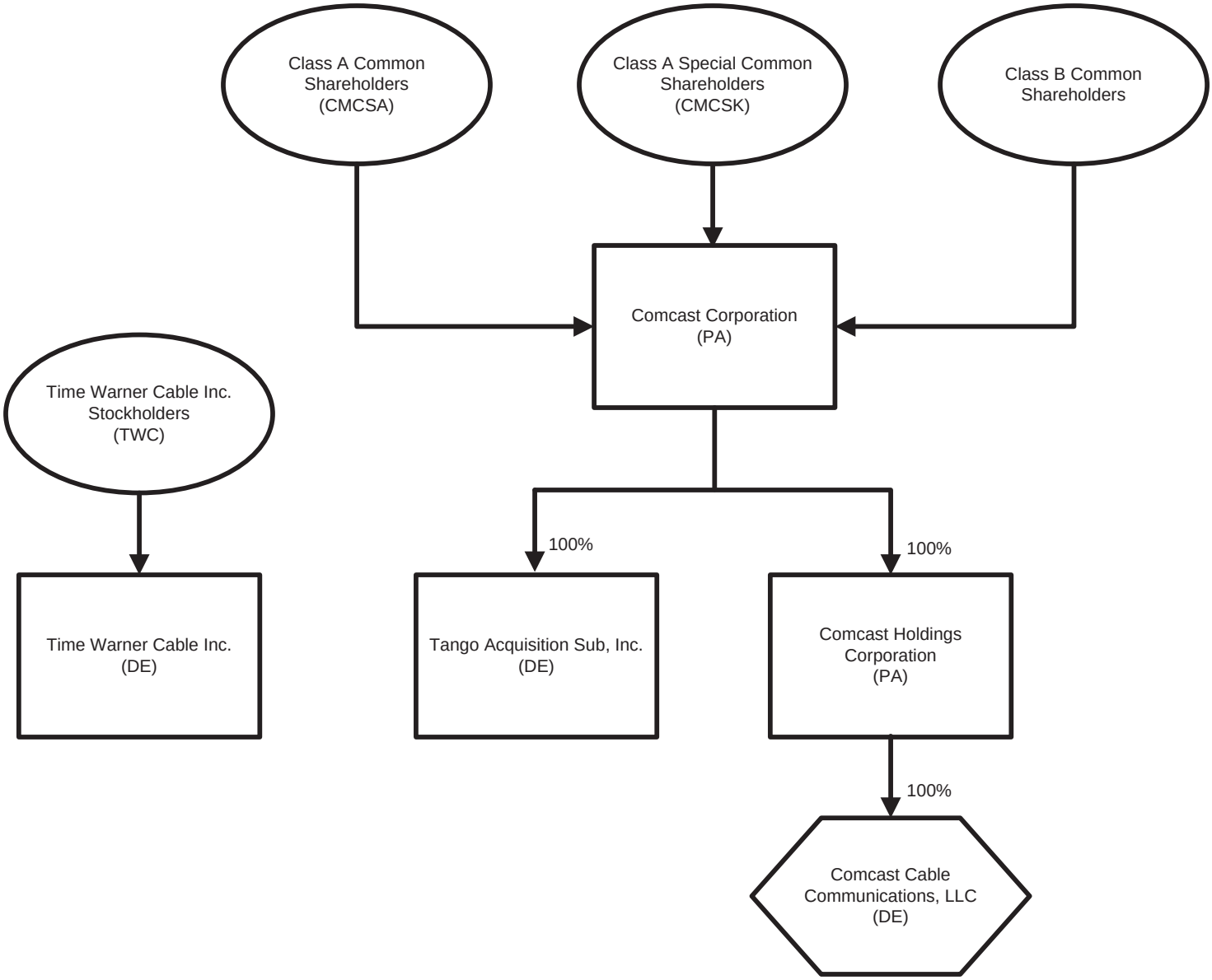
WIRELINE COMPETITION BUREAU

BLANKET DOMESTIC SECTION 214 AUTHORITY
Time Warner Cable Business LLC, FRN 0022373617
DukeNet Communications, LLC, FRN 0007736853
Time Warner Cable Information Services (Alabama), LLC, FRN 0012538542
Time Warner Cable Information Services (Arizona), LLC, FRN 0014765994
Time Warner Cable Information Services (California), LLC, FRN 0011752953
Time Warner Cable Information Services (Colorado), LLC, FRN 0020549556
Time Warner Cable Information Services (Hawaii), LLC, FRN 0013182647
Time Warner Cable Information Services (Idaho), LLC, FRN 0016020406
Time Warner Cable Information Services (Illinois), LLC, FRN 0020549564
Time Warner Cable Information Services (Indiana), LLC, FRN 0012538229
Time Warner Cable Information Services (Kansas), LLC, FRN 0011018058
Time Warner Cable Information Services (Kentucky), LLC, FRN 0014766604
Time Warner Cable Information Services (Maine), LLC, FRN 0008359648
Time Warner Cable Information Services (Massachusetts), LLC, FRN 0013182712
Time Warner Cable Information Services (Michigan), LLC, FRN 0020549580
Time Warner Cable Information Services (Missouri), LLC, FRN 0011015922
Time Warner Cable Information Services (Nebraska), LLC, FRN 0012620894
Time Warner Cable Information Services (New Hampshire), LLC, FRN 0012220422
Time Warner Cable Information Services (New Jersey), LLC, FRN 0013182753
Time Warner Cable Information Services (New Mexico), LLC, FRN 0016021313
Time Warner Cable Information Services (New York), LLC, FRN 0003757622
Time Warner Cable Information Services (North Carolina), LLC, FRN 0010669430
Time Warner Cable Information Services (Ohio), LLC, FRN 0011753092

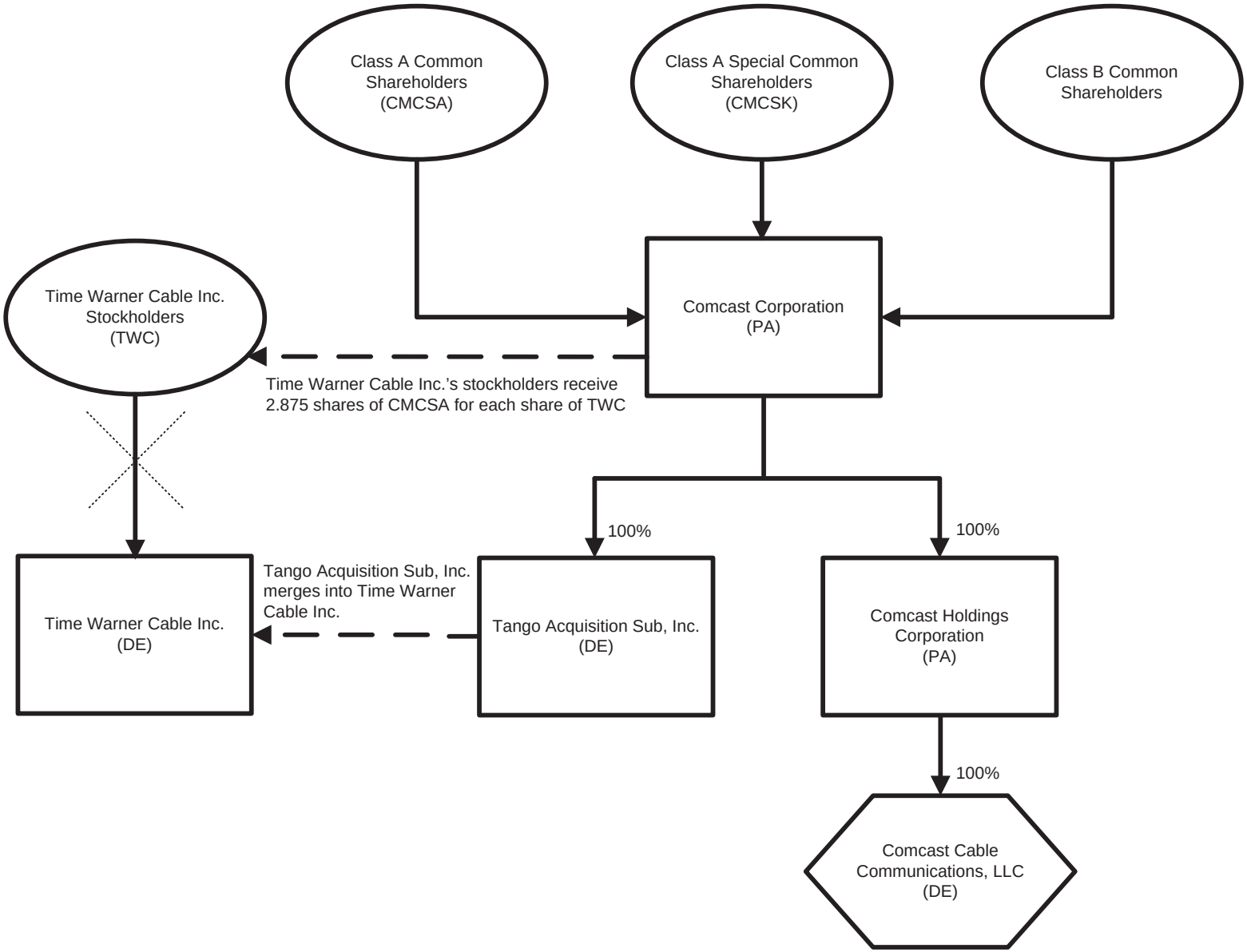
BLANKET DOMESTIC SECTION 214 AUTHORITY
Time Warner Cable Information Services (Pennsylvania), LLC, FRN 0013182803
Time Warner Cable Information Services (South Carolina), LLC, FRN 0011010055
Time Warner Cable Information Services (Tennessee), LLC, FRN 0012620969
Time Warner Cable Information Services (Texas), LLC, FRN 0010669562
Time Warner Cable Information Services (Virginia), LLC, FRN 0015590714
Time Warner Cable Information Services (Washington), LLC, FRN 0015624216
Time Warner Cable Information Services (West Virginia), LLC, FRN 0012538500
Time Warner Cable Information Services (Wisconsin), LLC, FRN 0012327896

EXHIBIT 3

Comcast Corporation/Cable Structure Before Merger



Comcast Corporation/Cable Structure at Time of Merger



Comcast Corporation/Cable Structure After Merger

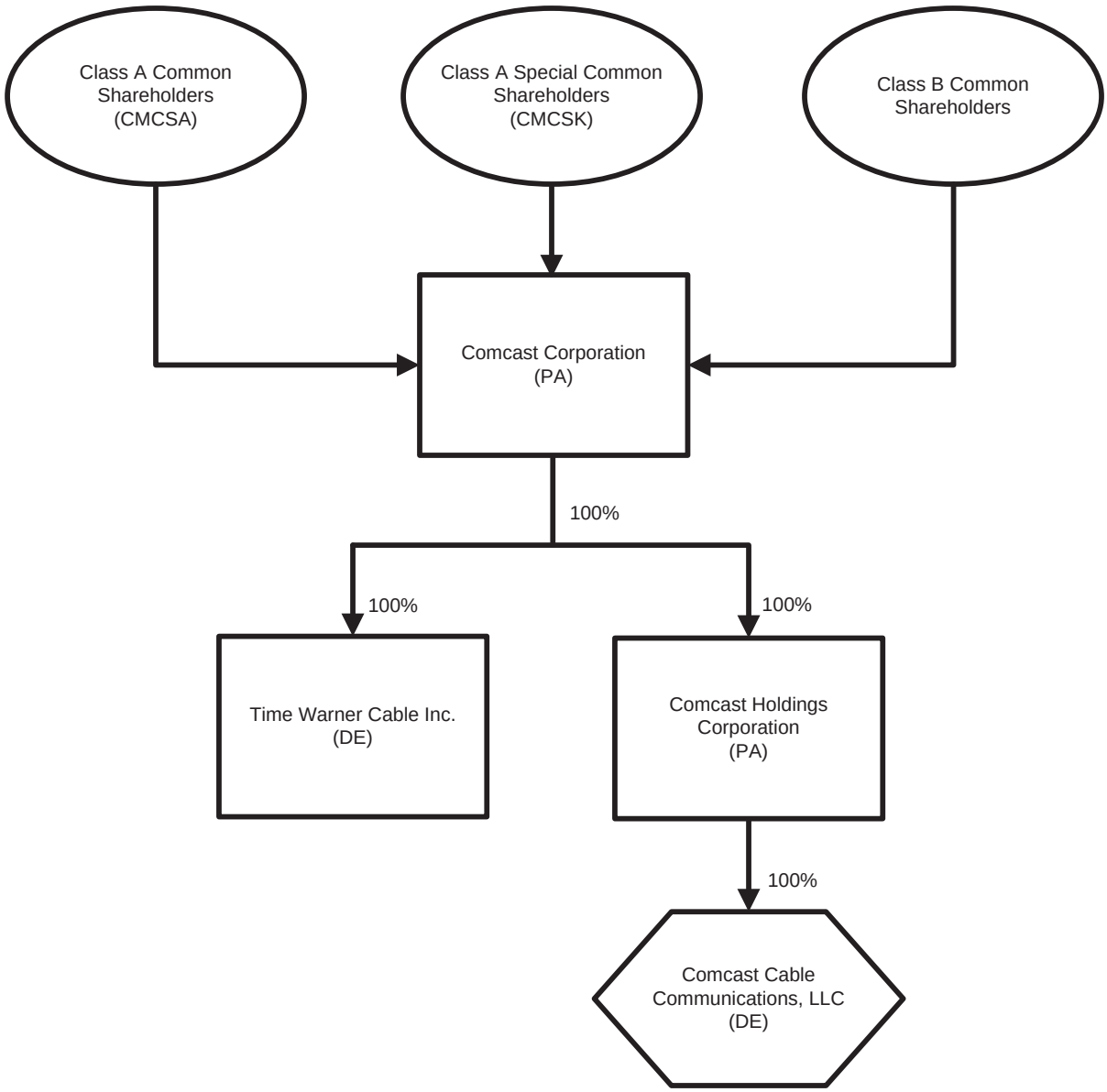


EXHIBIT 4

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

In the Matter of	)	
	)	
Applications of	)	
	)	
Comcast Corp. and	)	MB Docket No. 14-57
Time Warner Cable Inc.	)	
	)	
For Consent To Transfer Control of	)	
Licenses and Authorizations	)	

DECLARATION OF MICHAEL J. ANGELAKIS

1. My name is Michael J. Angelakis. I am the Vice Chairman and Chief Financial Officer of Comcast Corporation ("Comcast"). I have held the position of CFO since I joined Comcast in March 2007 and became Vice Chairman in 2011. In this role, I am responsible for all of Comcast's corporate development, strategic and financial planning, investor relations, financial reporting, and taxation, and also have other oversight and strategic duties. In connection with these responsibilities, I oversee the strategic evaluation, financial analysis, and negotiation of major potential merger and acquisition opportunities for Comcast. I was intimately involved in and part of the key discussions among Comcast executive management regarding the decision to purchase Time Warner Cable Inc. ("TWC"), in negotiating the transaction with TWC senior management, and in assessing and estimating the operating efficiencies and other strategic and financial benefits of this transaction that will inure to our customers and our shareholders.

2. The purpose of this declaration is to describe the synergies and efficiencies and the strategic and financial opportunities that we identified in the course of evaluating and

negotiating the transaction. As I explain below, the transaction will allow Comcast to compete better and generate meaningful cost-savings and revenue opportunities. The increased economies of scale and scope afforded by this transaction will allow Comcast to invest in and accelerate deployment of advanced services and technologies to current and prospective customers, businesses, and advertisers, and to enhance competition in a variety of market segments, including advanced connectivity for medium to large businesses and enterprises where there is a strong competitive need.

A. Transaction Structure and Rationale

3. At Comcast, we view our company's balance sheet as an important strategic asset, and therefore we structured the TWC transaction as a stock-for-stock transaction in order to ensure that the company's balance sheet will remain strong post-transaction. Comcast will acquire 100 percent of TWC's 284.9 million shares outstanding in a share-for-share exchange equal to pro forma ownership of approximately 23 percent of Comcast. Each TWC share will be exchanged for 2.875 Comcast shares, which values TWC on an enterprise value of 7.9 x 2014 earnings before interest, tax, depreciation, and amortization ("EBITDA") excluding cost synergies, and 6.7 x 2014 EBITDA including cost efficiencies (based on the Comcast and TWC share values as of February 12, 2014).

4. We believe this valuation is attractive to our shareholders and that the transaction will generate double-digit internal rates of return and will be accretive to free cash flow per share beginning in year one and growing thereafter. In short, we anticipate that the transaction will generate substantial financial and strategic value for years to come.

5. This all-stock transaction will maintain Comcast's strong investment-grade ratings and will allow us the flexibility to make the necessary investments in our existing

systems and in the TWC acquired systems in order to: accelerate the rollout of advanced products and services to those customers; improve the reliability of service; enhance the security of the network; and compete effectively given the increasingly dynamic environment in which we face numerous national and global competitors. In addition to the above, we structured the transaction in this manner as we believe that the significant synergies and efficiencies from this combination will allow us to accelerate our development and investments in the company, making the combined company's services an even better value proposition for our customers. We also believe that this approach ultimately will deliver successful financial performance for our shareholders. While I cannot speak for TWC's Board of Directors, I view its approval of the stock-for-stock deal structure – and TWC shareholders' 23 percent post-transaction ownership stake in the combined company – as a strong vote of confidence in our future together.

B. Synergies/Efficiencies

6. Based on the financial analysis our team performed, and which I subsequently approved, we estimate that the efficiencies resulting from the transaction will total approximately $1.5 billion in operating expenses and approximately $400 million in capital expenditures by the third year, with operating expense efficiencies recurring at or above the $1.5 billion level each year thereafter (capital expenditure efficiencies are not expected to continue beyond year three).

7. *Operating Expense Efficiencies*. It is my view that the merger will result in significant annual cost savings that would be unachievable absent the transaction. The estimated efficiencies are approximately 10 percent of TWC's operating expense base. Importantly, we expect that we will achieve $750 million of the $1.5 billion in operating efficiencies in the first year after closing, another 25 percent in year two, and the remaining 25 percent in year three. My assessment of those efficiencies takes into account the following factors:

a. **Corporate Overhead**. The transaction will decrease the aggregate amount of overhead currently spent by Comcast and TWC in many duplicative areas that are related to corporate staff and operational functions. By consolidating such functions and services within a single corporate management structure, the combined company should realize approximately {{ }} million in expense efficiencies for corporate and operational overhead over a three-year period.

b. **Cable Operations**. This integration of our cable operations will also contribute to these operating expense efficiencies. Eliminating duplicative networks, assets, and functions and creating, for example, one backbone and one content delivery network, will yield approximately an additional {{ }} million in operating expense efficiencies over a three-year period.

c. **Programming Costs**. The remaining {{ }} million in operating expense efficiencies of the total $1.5 billion are expected to come from savings on programming costs over a three-year period, to the extent and at such time as more favorable rates and terms in some of Comcast's programming agreements supersede some of TWC's existing contracts.

8. *Capital Expense Efficiencies*. Comcast's business involves significant capital expenditures for network elements, such as fiber-optic cable, software, modems, set-top boxes, servers, and vehicles, as well as other customer equipment. We believe the combined company will likely enjoy a lower per-unit cost when purchasing network and customer equipment in larger quantities. Through these and other savings, we estimate capital expenditure efficiencies of approximately $400 million beyond the $1.5 billion in operating expense efficiencies described above. The capital expenditure savings represent approximately 10 percent of TWC's total anticipated expenditures in 2014.

9. *Additional Revenue Synergies*. Comcast also believes there are strong opportunities for *revenue* synergies and improvements for the combined company, in addition to the cost synergies discussed above. In fact, the revenue synergies that could be realized by creating an enhanced value proposition for super-regional business customers are potentially even more significant than the annual cost synergies. Nonetheless, we need to refine our revenue and business plans, and, in the effort to develop a conservative assessment, my estimate here does not factor *any* such revenue synergies into Comcast's financial analyses. Based on our due diligence and business review to date, I believe the estimated expense efficiencies and synergies are well-substantiated and quite achievable.

10. In the analysis to derive the above totals, we relied upon a number of due diligence sources of data, including (i) Comcast internal financial and operational data; (ii) publicly available data regarding TWC; and (iii) detailed information concerning TWC obtained in the course of due diligence and a series of discussions with our TWC counterparts. We also relied upon our experience in evaluating and projecting synergies resulting from prior Comcast acquisitions. In the course of the evaluation and negotiation of the transaction, we reported on our synergy and efficiencies analyses internally and to the Comcast Board of Directors.

11. In making our assessments, we also estimated the potential need to make substantial investments in the TWC markets in the next several years. TWC itself has adopted a three-year plan to upgrade its facilities and offerings in various respects. We reviewed that plan with TWC management and believe that we can improve upon it in terms of timing, efficiency, investment, and overall goals. To achieve this, Comcast is prepared to invest substantial incremental dollars annually above and beyond TWC's estimated annual increased capital expenditures of $500 million. With the benefit of Comcast's management expertise and

commitment to innovation and network upgrades, these investments will ensure that the entire post-transaction company is optimally provisioned and positioned to continue to provide high-quality and competitive video, broadband, and voice services and excellent customer service to residential and business customers. We believe that proceeding with this approach, combined with the above synergies and efficiencies, will translate into significant new benefits for consumers, businesses, and advertisers, as well as for the public interest more generally.

C. Increased Ability To Deploy Advanced Technologies and To Develop New and Innovative Products and Services

12. In today's dynamic communications, media, and technology marketplace, Comcast faces substantial competition in its core businesses not only from DBS and telco providers, but also from Google, Amazon, Apple, and others offering a range of rapidly evolving technology solutions for video and other services. Many of these companies are national or global in scope, and their greater resources and customer base facilitate experimentation and innovation since the costs can be widely dispersed. These companies' widespread availability also makes them an ideal partner for other companies that want to collaborate on solutions or offerings that will have the best chance of gaining national or global appeal.

13. By creating additional efficiencies, economies of scale, and an expansion of Comcast's geographic footprint, the transaction will provide the combined company with a greater ability to invest and innovate, not only to serve its existing customers better, but also to more effectively respond to the increasing competitive forces we face. Comcast, which employs over 1,000 engineers and developers, needs to continue to invest in advanced technologies and in developing innovative products and services. The bulk of Comcast's approximately $1 billion in annual spending on intangible assets is devoted to software research, development, and deployment. The transaction will allow the combined company to spread the cost of these

investments in new products and services over a larger customer base and more efficiently market these services. This additional base and scale increases the incentive to invest and take a risk in developing innovative products and services.

14. Because of its scale and desire to compete more effectively, Comcast already leads the cable industry in innovation and investment. For example, Comcast made a large upfront investment of {{ }} million to develop the acclaimed X1 platform. This platform provides customers a state-of-the-art user interface with integrated search features, personalized recommendations, access to the Internet through the TV, and the ability to use voice commands to navigate the programming guide. The X1 platform also enables a live TV streaming feature that allows customers to stream a meaningful part of their cable channel lineup to computers and mobile devices, and a new cloud DVR feature that allows them to watch DVR recordings on any X1-connected TV, computer, and mobile device in the home and download recorded content to mobile devices to take "on-the-go." No other cable company has developed a comparable product.

15. The transaction will further enhance Comcast's ability to invest in new products and services and will extend the benefits of Comcast's scale to TWC's systems and customers. For example, increased scale may enable Comcast to justify additional investments in products and services that are speculative and have high fixed costs, such as Streampix, Comcast's subscription video-on-demand ("VOD") service, or in developing new VOD or DVR technology, or some other new offerings. Moreover, the ability to amortize development costs over more systems means that Comcast can deploy new products and services more rapidly. Indeed, an ongoing strategic priority in the cable industry is to find creative ways to increase scale to justify and enable higher levels of investment and innovation.

16. Increased scale will also drive innovation through the combined company's interaction with suppliers. Comcast's larger size will allow it to commit to purchase greater volumes of equipment from manufacturers. This, in turn, will incentivize manufacturers to incorporate Comcast's creative suggestions for innovative equipment designs – since they will have greater confidence that they can recoup incremental investments through greater sales volume. Manufacturers may also be more flexible in reaching baseline economic terms based on greater sales opportunities.

17. Greater scale can also promote innovation by avoiding transaction costs that can frustrate or limit opportunities to share the costs of product development with third parties. From time to time, Comcast has attempted to collaborate with other cable companies in the development of new products and services through joint ventures, joint development products, and licensing arrangements. While some of these efforts have been successful, many other efforts have failed or stalled because of the difficulties of coordination across separate organizations. For instance, Comcast participated in an initiative with other cable companies to create a unified site for customers to access their respective provider's TV Everywhere content, and to work with third-party device manufacturers such as Apple, Roku, and Microsoft to implement that application. However, this attempt at collaboration failed as the cable companies could not agree on technical specifications, investment decisions, deployment, etc.

18. The transaction will also provide Comcast the added scope and scale to more fully realize the significant investment in human capital that Comcast – uniquely in the cable industry – has undertaken in recent years. As noted above, Comcast now employs over 1,000 engineers and developers and vigorously competes for new technology talent with the likes of Google, Apple, Facebook, Netflix, Microsoft, and Twitter. With greater scale in key markets, Comcast

will have a broader base of subscribers over which to spread research and development costs and to test-market and ultimately deploy new and innovative products and services. And a larger team of engineers and developers facilitates faster innovation as they can work with third-party manufacturers to develop a range of technology solutions.

19. Finally, the transaction will provide geographic scope efficiencies. For example, following the transaction, Comcast will have access to several markets clustered near existing markets, allowing Comcast to more efficiently invest in high-fixed cost infrastructure to serve those areas. Denser geographic coverage will also create marketing efficiencies that are particularly important with respect to the roll-out of services like TV Everywhere that may require extensive and expensive marketing campaigns to educate and attract consumers.

D. Benefits to Residential Customers

20. The transaction-related synergies and economies of scale described above will justify more investment and more cost-effective allocation of resources than either TWC or Comcast could do on its own in three critical areas for consumers – (1) broadband, (2) video, and (3) voice. The combined company will invest more capital in network infrastructure and enhancements that will improve the reliability and security of the network and expand our bandwidth to deliver, for example, faster broadband speeds; increased Wi-Fi gateway and hotspot deployment; wider deployment of the X1 platform, cloud DVR, and IP cable services; and enhanced voice services. Comcast has the experience to accomplish all of this more efficiently and with minimal disruptions to the customer experience.

21. *Broadband.* The acquired TWC systems – and the company as a whole – will benefit from the ability to translate large fixed-cost development and investments into better deployment and returns across a broader customer base. The combined company expects one of

its primary focuses post-transaction, and most immediate expenditures, to involve upgrading TWC's broadband plant to Comcast's technical standards in order to deliver improved broadband services to consumers.

22. For its own systems, Comcast is planning to spend approximately {{ }} billion on capacity and network-related initiatives over the next three years, including Converged Cable Access Platform ("CCAP"), Cable Modem Termination Systems ("CMTSes"), faster modems, and better Wi-Fi gateways.

23. Post-transaction, it is our intent that TWC's systems will be part of those plans (at appropriate incremental levels of investment), and the company as a whole will be able to scale these investments more efficiently. Comcast also expects to increase standard broadband speeds for TWC customers to standard speeds customers in Comcast systems enjoy. For example, TWC customers on the 15 Mbps/1 Mbps tier will see their speeds increased to 25 Mbps/5 Mbps, and likely beyond that as Comcast continues to increase its broadband speeds.

24. A critical step will be to upgrade all of TWC's systems from a part-analog to an all-digital platform in order to provide improved quality as well as additional capacity for broadband and other advanced services. Several years ago, Comcast undertook a five-year all-digital effort called "Project Cavalry" to improve its quality and reclaim bandwidth by transitioning all Comcast systems to this all-digital platform. Comcast completed this transition two years ahead of schedule, and this effort has led to Comcast being able to bond more than 8 QAM channels in most of its markets for the delivery of broadband services. With the introduction of CCAP-enabled CMTSes, which will be deployed to [[ ]] percent of Comcast's footprint by the end of 2015, Comcast will be able to bond 48 QAMs, and 96 QAMs in 2016 (after implementing DOCSIS 3.1). My understanding is that TWC has begun deploying CCAP

technology in a few discrete markets and has plans to roll it out to 75 percent of its footprint over several years. With TWC part of Comcast's efforts post-transaction, Comcast should be able to deploy CCAP-enabled equipment to TWC's systems on an accelerated and more cost-efficient basis than TWC could accomplish on its own.

25. Beyond faster broadband speeds and improved reliability, the transaction-related scale and scope efficiencies will enable Comcast to expand Wi-Fi gateway distribution and hotspot deployment across the entire Comcast-TWC footprint, particularly in areas where there will be greater density and clustering of systems. Comcast and TWC are part of a CableWiFi partnership, together with other cable industry partners, that allows customers to access public Wi-Fi hotspots in other partners' territories. Although the CableWiFi partnership has worked relatively well for each of our customer bases, Comcast is driving deployment of Wi-Fi hotspots more aggressively than TWC, especially when considering Wi-Fi modem deployments that augment the Wi-Fi network with home hotspot locations. The company's intent is to fill in the gaps in the Wi-Fi network across Comcast's and TWC's combined footprint. Greater Wi-Fi access would mean that customers could use advanced devices and enjoy bandwidth-intensive applications in more places, and a more ubiquitous Wi-Fi network would also provide the combined company with a stronger platform for other potential innovation and offerings.

26. *Advanced Video.* The video marketplace is a mature business and has been challenging for the past five years. However, Comcast has every intention to continue to compete vigorously for customers and improve the value of the services that Comcast provides in a video subscription. The transaction will allow the combined company to continue to innovate and deepen the value proposition of the video services for consumers in a robustly

competitive marketplace (marked by greater competition than ever before from both traditional MVPDs and emerging online providers).

27. Given Comcast's demonstrated experience and expertise in deploying large-scale network upgrades, I am confident that Comcast's transition of TWC's systems to an all-digital platform will be accomplished with discipline and urgency. As a result, TWC's systems will benefit from greater capacity for robust and innovative video products on an accelerated basis.

28. The increased bandwidth associated with a widely-scaled all-digital network has enabled Comcast to develop – and deploy across its footprint – Comcast's next-generation cloud-based X1 platform (described above). Post-transaction, taking into consideration integration issues, Comcast may be able to begin deploying the X1 platform (and the X2 interface upgrade to that platform) to the acquired systems within a year of the transaction, so that those systems are able to compete more effectively against innovative and aggressive competitors, and so that TWC's video subscribers enjoy the benefits of this advanced technology.

29. The TWC systems will also benefit from the extension of Comcast's greater TV Everywhere rights and industry-leading VOD service (following necessary upgrades to the TWC systems). Today, Xfinity On Demand has 400 million views each month, includes over 50,000 programming choices (a number that is constantly growing) and over 80 percent are free of charge. Comcast also offers a leading TV Everywhere experience with access to over 300,000 streaming choices, including over 50 live linear TV channels on XfinityTV.com and the Xfinity TV Go app. Although the operational and contractual integration issues are not trivial, these benefits should directly and relatively quickly extend to the TWC systems following the approval and consummation of the transaction.

30. *Digital Voice*. Both Comcast and TWC have been strong competitors in their respective markets for residential IP voice services. Post-transaction, the combined company will benefit from the best aspects of both companies' robust and innovative voice services. The post-transaction company will be better suited to offer an array of advanced IP voice services in competition with ILECs and other providers, and to continue to drive innovation and competition in this market.

E. Benefits to Businesses

31. The synergies and scale and scope efficiencies discussed above will also significantly enhance the ability of the combined firm to compete for and serve business customers of all sizes.

32. Comcast and TWC are both recent competitors in the business services market, and Comcast believes that this market presents a significant growth opportunity. Comcast first entered the business services market in 2006, focusing primarily on small businesses (i.e., primarily those with fewer than 20 employees). My understanding is that TWC, on the other hand, has more experience with medium-sized businesses in its footprint. Despite the fact that both companies are gaining momentum in their respective segments, in 2013 Comcast Business and TWC together represented a small share of the small and medium-sized business market segment (maybe 10 to 15 percent within their footprints) for wholesale telecom voice and data services (excluding video and cloud-related services). This transaction will provide the combined company the scale and scope needed to invest and compete vigorously against well-established incumbents for two business customer categories: (1) medium-sized, regional or super-regional, and even enterprise businesses; and (2) wireless backhaul services.

33. *Medium-Sized, Regional, Super-Regional, and Enterprise Business*. With Comcast's inroads with small businesses and TWC's greater experience with medium-sized businesses, the transaction will help establish the combined company as a significant competitor with a stronger foothold in the medium-sized, regional, and super-regional business marketplace. As discussed above, the transaction will enable Comcast to accelerate and enhance the build-out of its network infrastructure in its service areas, bolstering its ability to compete for business customers. In particular, medium-sized businesses generally require more "on-net" building connections. Historically, these businesses have had to rely on companies like AT&T, Verizon, and CenturyLink, which have been the only providers with the scale and scope to provide these connections.

34. Economies of scale will enable the combined company to drive down the costs of procurement and network build-out, and will help achieve the marketing and operating efficiencies that are necessary for Comcast to be a more effective competitor. In addition, the companies will be able to combine their complementary service offerings (e.g., hosted voice service, cloud-based services) and further develop advanced service offerings like point-to-point and multi-point Ethernet services in order to provide a more attractive suite of services to potential business customers.

35. The transaction will also enable the combined company to serve super-regional companies with operations that span across Comcast's and TWC's existing footprints. In the past, geographic constraints have limited cable companies from competing effectively against incumbent LECs with much greater scale and scope, which have served this market for decades. Today, neither Comcast nor TWC can generally provide services to businesses that cross territories as efficiently as either can provide services to businesses within their respective

territories. Thus, businesses with operations in both Comcast's and TWC's footprints that seek an alternative to the incumbent LEC face two equally unappealing options: (i) rely on an aggregator that pieces multiple services together (at a markup); or (ii) negotiate and manage multiple accounts with separate providers. The transaction will help address this lack of robust choice, unleashing a substantial amount of new competition in this marketplace.

36. Post-transaction, Comcast will be able to compete more effectively with incumbent LECs by offering a unified set of seamless products and services throughout its extended footprint with greater operational and cost efficiencies. For example, Comcast will be able to serve larger multi-site customers in a uniform fashion, and will also be able to build super-regional Metro Ethernet ("metro-E") clusters, thereby further consolidating key parts of the company's network and fostering more efficient delivery of services. Comcast also will be able to increase the number of "on-net" sites the company serves, which will further reduce the costs and operational barriers for businesses with multiple sites and facilitate the investment in connecting additional sites to Comcast's network.

37. For the same reasons, Comcast's larger geographic reach post-transaction will also make it a meaningful option for national (enterprise) companies that have multiple locations throughout the combined Comcast-TWC footprint, and currently rely either on incumbent LECs or third-party aggregators. With more of these companies' locations covered by Comcast's expanded geography, it will now make more economic sense for the company to pursue this national business, and the more likely that Comcast can win the business and become the primary service provider for these companies' locations. This market segment should benefit from a new near-national competitive entrant that can provide superior service and value.

38. *Wireless Backhaul Services*. With mobile data traffic growing rapidly, wholesale wireless backhaul is emerging as a national service. Comcast and TWC have both recognized that the increasing need for wireless carriers to offload wireless traffic from their cell towers onto high-capacity fiber facilities presents a business opportunity for the companies. Currently, TWC and Comcast provide wireless backhaul to only a small fraction of the total number of cell sites (less than three percent).

39. The transaction will also allow Comcast to compete in the wireless backhaul market, particularly because of the larger geographic footprint and scale post-transaction. TWC's expertise and assets in this market factor into this strategic assessment. For example, with its acquisition of DukeNet, TWC obtained an 8,700-mile regional fiber-based network that provides wholesale wireless backhaul and other business services to customers in North Carolina, South Carolina, and five other states in the Southeast. The combined company's additional scale after the transaction will provide it with the resources and expertise to build fiber even further and make substantial re-investments in provisioning and backhaul infrastructure. Finally, investment in this area not only creates competition for critical cell backhaul and wholesale carrier infrastructure, but directly benefits medium-sized and enterprise business customers by accelerating the deployment and technical/operational "hardening" of metro-E services.

F. Benefits to Advertisers

40. The transaction will also foster the development and deployment of next-generation cable advertising technologies that are attractive to advertisers. The transaction will allow Comcast to spread the costs of developing these new technologies over a broader customer

base, and will enable us to deploy them over a wider footprint and showcase them in the important New York and Los Angeles markets.

41. One such platform is dynamic ad insertion for VOD, which allows a cable operator to dynamically insert fresh ads into VOD programming (as well as TV Everywhere and cloud DVR content) to make these ads more relevant to the consumer. This transaction will allow Comcast and TWC to expand their dynamic ad insertion efforts, not only because it will allow Comcast to add much more VOD and TVE content to the TWC systems, but also because it may spur advertisers and ratings agencies to unite around common approaches and measurement tools in dealing with a larger company with a deep commitment to VOD. This dynamic ad insertion technology may prove to be a game-changer, as programmers may be incentivized, with the increased buy-in from advertisers, to make valuable programming more broadly available on this robust and convenient VOD platform.

42. Similar benefits may result with respect to addressable advertising technology, which allows for the serving of micro-targeted ads to a consumer, based on various non-personally identifiable attributes, and with due regard for privacy considerations. As a matter of scale and scope, the combined company will have a broader set of customers across which to deploy this technology, and within which advertisers can target critical masses of discrete consumer micro-groups, including those located in important advertising markets.

G. The Transaction Is Necessary To Achieve These Benefits

43. Based on the above factors and analysis, we have concluded that the meaningful consumer and business benefits described in this declaration can be achieved only by combining Comcast and TWC. Each of the benefits outlined above is based in part on increased scale, substantial investment, innovation and experience, and an expanded geographic scope for the

combined company. In our considered judgment, there is no other reasonable or attainable pathway to achieve these types of substantial benefits for consumers and businesses.

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I, Michael J. Angelakis, declare under penalty of perjury that the foregoing declaration is true and correct. Executed on April 7, 2014.

Michael J. Angelakis

EXHIBIT 5

An Economic Analysis of the Proposed Comcast – Time Warner Cable Transaction

April 8, 2014

Gregory L. Rosston
Michael D. Topper

Table of Contents

I. Introduction

A. Qualifications

1. Dr. Rosston is the Deputy Director and a Senior Fellow of the Stanford Institute for Economic Policy Research ("SIEPR"), Co-Director of the Public Policy program and a Professor by courtesy of Economics at Stanford University. He received his Ph.D. and M.A. in economics from Stanford University and A.B. with Honors in economics from the University of California, Berkeley. Dr. Rosston's specialties include industrial organization, antitrust, and regulation with an emphasis on telecommunications. He served at the Federal Communications Commission ("FCC") for three and one-half years as Deputy Chief Economist, as Acting Chief Economist of the Common Carrier Bureau, and as a Senior Economist in the Office of Plans and Policy. In these positions, Dr. Rosston had significant involvement with, among other things, the FCC's implementation of areas of competition and Internet policy. He returned to the FCC as Senior Economist for Transactions to assist the Commission with its analysis of the competition issues involved in the proposed acquisition of T-Mobile by AT&T.

2. Dr. Rosston's research focuses on telecommunications and competition policy. He has been the author or co-author of a number of articles relating to Internet and telecommunications competition policy and has co-edited two books on telecommunications, and helped organize many telecommunications conferences. Dr. Rosston served as the co-Chair of the Commerce Spectrum Management Advisory Committee and assisted the President's Council of Advisers on Science and Technology in a recent report. At Stanford, Dr. Rosston regularly teaches courses that involve telecommunications and competition policy.

3. Dr. Rosston has testified as an independent academic expert on competition and telecommunications matters in hearings at the FCC, the United States Senate Commerce Committee, the House Commerce Committee, the California State Senate Committee on Banking, Commerce and International Trade, and the National Telecommunications and Information Administration of the Department of Commerce. He has also advised companies and organizations on antitrust matters and served as an expert witness on competition issues, including testifying before the Copyright Arbitration Review Panel with regard to the allocation of cable distant signal copyright royalties. Dr. Rosston submitted reports and participated in an

FCC panel on the Comcast-NBCUniversal transaction. His curriculum vitae is included as Appendix 1.

4. Dr. Topper is a Senior Vice President and Co-Head of the Antitrust & Competition Practice at Cornerstone Research, where he has worked since 1994. Previously, he was an Assistant Professor in the Department of Economics at the College of William & Mary, and a Lecturer in the Department of Economics at Stanford University. He received his Ph.D. and M.A. in Economics from Stanford University. He has also received an M.S. in Engineering Economic Systems from Stanford University and a B.S. in Systems Engineering from the University of Virginia.

5. While at William & Mary and Stanford, Dr. Topper taught courses in microeconomics, econometrics, and antitrust economics. Before receiving his doctorate in economics, he worked as an engineering economist at Bell Laboratories and Bell Communications Research.

6. Dr. Topper's consulting work over the last twenty years has focused on the application of microeconomics, econometrics, and quantitative analysis to litigation and regulation in a range of industries. He has worked on matters involving antitrust and competition, telecommunications policy, intellectual property, class certification, product liability, discrimination and contractual issues. He has submitted expert reports and testimony in competition matters, including expert reports submitted in FCC proceedings and testimony submitted to the Copyright Royalty Board regarding the allocation of cable distant signal copyright royalties. Dr. Topper submitted a report to the FCC in the Comcast-NBCUniversal transaction. His curriculum vitae is included as Appendix 2.

B. Assignment

7. Comcast Corporation ("Comcast") has entered into an agreement with Time Warner Cable ("TWC") whereby Comcast will acquire 100 percent of TWC's equity in exchange for Comcast Class A shares ("CMCSA").[1] The proposed transaction is a straightforward acquisition of TWC, and Comcast plans to retain all of TWC's existing assets, subject to divestitures of cable systems with approximately 3 million customers. We have been asked by counsel for

[1] We refer to the newly created entity as "the combined company" or "Comcast" and refer to the acquisition as "the transaction."

Comcast to analyze the competitive benefits and efficiencies that are likely to result from the transaction. We analyze potential benefits to residential and business customers, as well as to advertisers. In the course of our investigation into these issues, we have interviewed company personnel and have examined data and documents from Comcast and TWC and a variety of third-party and public sources.

8. We have also been asked to assess whether there are any cognizable risks of anticompetitive effects from the transaction. We examine the implications of the transaction for competition in video distribution, video programming, and advertising. Dr. Mark Israel is submitting a declaration focused on the broadband Internet aspects of this transaction. In particular, Dr. Israel's report covers the competitive benefits to residential and business broadband consumers in greater detail, as well as competition issues in residential and business broadband and the Internet backbone.

II. Executive Summary

A. Competitive Benefits and Efficiencies

9. The proposed combination of Comcast and TWC will lead to transaction-specific efficiencies that will benefit current and future residential consumers, businesses, and advertisers across the footprint of the combined company. The transaction-specific efficiencies primarily stem from three economic mechanisms: economies of scale, expanded geographic reach, and sharing of current complementary technologies and services. As discussed below, with a larger scale and geographic reach than other cable operators (including TWC), Comcast has been more successful in enhancing its network and technology, as well as developing and deploying new products and services. After the transaction, advanced products and services will be more readily available to customers in TWC territory. In addition, the new company will have the scale to better compete with its national and global competitors.

10. This transaction increases Comcast's scale by adding approximately eight million customers (after any divestitures), and allowing it to compete for additional customers in the nearly 30 million homes currently passed by TWC systems (without accounting for divestitures). Increased scale will allow Comcast to spread fixed investment costs – which are increasingly necessary, as discussed in Section IV.A.1, to maintain and upgrade an advanced network and to

develop new and compelling technologies in the video and broadband industries – across a greater number of current and future customers, making it less expensive on a per-customer basis for Comcast. Scale can make the difference between investing in a new product or service and not investing, and scale can accelerate the introduction of products, services, and network and equipment enhancements.

11. Over the past few years, Comcast has been able to develop and deploy one of the most advanced networks and some of the cable industry's most innovative technologies in part because of its existing scale. For example, Comcast has migrated all of its systems to digital, has the most advanced set-top box and video platform (X1), and has deployed DOCSIS 3.0 in 99.8 percent of its footprint. Below are a few examples that underscore some of the efficiencies that are likely to result from additional scale:

- Comcast should be able to bring more advanced set-top box platforms and Internet protocol (IP) cable services to market sooner because it will have a larger potential customer base that justifies larger upfront investments.

- The combined company will be able to invest in network infrastructure, data centers, and other facilities to compete more effectively for enterprise business customers and multi-location businesses because it will have a geographic footprint covering most major business areas across the country.

- The scale of the combined company will increase its ability to create apps for a wide variety of devices, allowing customers to access video content in new ways. The combined company's increased scale should also increase device manufacturers' incentives to pre-install apps that will increase availability of video content on third-party devices.

- Comcast will have greater incentive to increase investment in the deployment and measurement of advanced advertising services to deliver targeted, relevant advertising and to enable a more robust, ad-supported video-on-demand ("VOD") and TV Everywhere ecosystem.

12. The expanded geographic reach of the combined company will increase its ability to serve customers whose needs span the existing footprints of Comcast and TWC. For example:

- On the residential side, expanded geographic reach will facilitate more extensive provisioning of a more robust public Wi-Fi network.

- On the business side, expanded geographic reach will increase the ability of the combined company to serve super-regional and enterprise businesses, providing enhanced competition in a market traditionally dominated by incumbent local exchange carriers ("ILECs").

- The increased geographic reach of the combined company coupled with the ability to deliver advertisements targeted to specific households and advanced advertising services on VOD and other platforms should offer more options for advertisers and more popular content for consumers.

13. The combined company will share technologies and services across its expanded footprint, which will benefit residential consumers, businesses, and advertisers. By combining Comcast's and TWC's different products and services, as well as the specialized knowledge and proprietary technologies required to develop, deploy, and deliver them, the transaction should allow customers in the expanded footprint to benefit from the comparative advantages of Comcast and TWC. For example:

- With the knowledge and experience Comcast brings from its own transition to all-digital, it is likely Comcast will transition the TWC systems to all-digital faster, more efficiently, and with less customer disruption than TWC would, which means consumers should have access to more advanced services sooner.

- Residential customers in TWC's current footprint will benefit from Comcast's X1 platform and, over time, from its larger VOD and TV Everywhere libraries.

- Business customers with locations in TWC's current footprint will benefit from Comcast's expertise in serving small businesses. Similarly, business customers with locations in Comcast's current footprint will benefit from TWC's expertise in certain services for mid-sized businesses, including hosted software services provided by its NaviSite subsidiary.

14. The investments in and development of technologies and services enabled by this transaction for one set of customers will have spill-over benefits that improve service for other customers. For example, an expansion of the fiber backbone to reach more sites and compete for business customers will also benefit residential customers because residential and business services use common backbone infrastructure. In addition, investments in Comcast's backbone network will likely make the network more reliable. Similarly, technologies to free up

bandwidth and increase transmission speeds should improve service for both residential and business customers.

15. There also are important feedback effects likely to arise from this transaction that would benefit residential consumers, businesses, and advertisers. The development and refinement of advanced products, services, network infrastructure, and equipment from increased scale and expanded geographic reach should enhance customer experiences and increase usage, which in turn would make the combined company a more attractive partner for equipment manufacturers, technology companies, and application or content developers because the company will offer a more attractive customer base, more exposure, more revenue opportunities, and greater efficiencies. As a result, the combined company is more likely to explore and develop new technologies, products, and services because it should have more willing partners. Comcast's increased quality should also spur other competing video, broadband, and voice providers to invest more in developing and refining their products and services, further benefitting customers.

16. Increased scale and geographic reach from this transaction should lead to a range of efficiencies and benefits for residential consumers, businesses, and advertisers. Comcast and TWC can and do compete vigorously with other distributors for increased scale within their current footprints, but within-footprint competition does not offer the increase in scale afforded by this transaction, which comes from allowing Comcast to compete for customers in an expanded footprint.

17. Partnerships or licensing arrangements among cable companies operating in different geographic regions could be alternative mechanisms to increase scale and geographic reach. However, developing and deploying new platforms and technology, whether for video, broadband, voice, or some other service, often requires risky, business-specific investment. Each company in a partnership or licensing agreement will be wary of making investments whose return hinges on the future behavior of other companies. There are a number of reasons for difficulties and frictions in reaching agreements through contracts, including different expectations about costs, demand, and profits, different perceptions of and attitudes toward risk, different business models, different embedded technologies and networks, varying experiences of different operators, and the complexity and uncertainty of the technology involved. This transaction will help overcome some of these difficulties and frictions. In addition, because of

the rapid pace of technological change, partnerships might otherwise have to be created for a large number of potential new products, which would slow investment, innovation, and benefits to consumers.

18. The combined company will face the same vigorous competition across its lines of business that Comcast and TWC do as stand-alone companies. Indeed, if anything, the increased development and acceleration of enhanced products and services by the combined company will likely encourage a competitive response from the companies with which Comcast and TWC compete to provide residential services, business services, and advertising. For example, the proposed combination has already prompted a response from AT&T CEO Randall Stephenson, who stated that the prospective transaction increases the urgency for AT&T to build out its fiber network.

19. Comcast customers, including those on systems acquired through previous transactions, have benefitted from previous transactions in which Comcast expanded its geographic reach. After its 2002 acquisition of AT&T Broadband, Comcast was able to deploy new and improved services for customers across its expanded footprint, including the footprint of AT&T Broadband. Similarly, after Comcast acquired cable systems from Adelphia in 2006, it invested heavily in upgrading the Adelphia systems so it could provide customers with advanced services.

B. No Competitive Concerns Related to Video Programming

20. Various parties have raised competitive concerns about the transaction's impact on the distribution, acquisition, and sale of video programming: 1) that Comcast would gain market power in the distribution of video programming and charge end-user customers supra-competitive prices; 2) that Comcast would gain market power as a buyer of video programming and drive its payments for content below competitive levels (horizontal "monopsony" concerns); 3) that Comcast would have an incentive to deny carriage to unaffiliated programming to benefit its own programming (vertical "program carriage" concerns); 4) that the transaction would give Comcast market power in the sale of programming so that it could charge supra-competitive prices to other MVPDs, including other cable companies with which it does not compete (horizontal "market power" concerns); and 5) that Comcast would have an incentive to deny its

programming to rival MVPDs and online video distributors ("OVDs") to increase profits from Comcast's MVPD service (vertical "program access" concerns).

21. Our analysis shows that none of the competitive concerns listed above arises as a result of this transaction.

22. First, Comcast's and TWC's cable franchise areas generally do not overlap so the two companies do not compete for MVPD customers. Comcast will continue to face the same vigorous competition from DBS and telco MVPDs and other video programming distributors post-transaction that Comcast and TWC do currently and will not gain the ability to raise prices to any end-user consumers. The bottom line is that the transaction will not alter the number of MVPD choices of any consumer, or lead to an increase in concentration in any local markets, since the companies' cable systems do not overlap.

23. Second, the transaction will not give Comcast market power in program acquisition. Because the transaction will not reduce competition in video distribution, as just noted, Comcast will continue to have the same incentive and need to acquire programming to compete with other distributors. In addition, content providers can sell their programming to a large open field besides Comcast that includes more than 70% of the MVPD audience plus rapidly growing OVDs, some of which are reportedly introducing competitive multichannel offerings. Content providers have also gained bargaining power, as evidenced by significant programming fee increases. As a result, Comcast will not gain market power as a buyer of video programming and will not be able to drive its payments for content below competitive levels.

24. Third, Comcast will continue to face vigorous competition from other MVPDs and will control only a limited share of programming after the transaction. If it were to discriminate against non-affiliated programming in program carriage in order to attempt to weaken competing networks and enhance the profitability of its own programming, Comcast would risk losing customers to other MVPDs without gaining much benefit to its own programming. In other words, competition in video distribution and programming lead to the conclusion that the transaction will not raise any vertical program carriage concerns.

25. Fourth, the transaction will not give Comcast market power in the sale of programming to other video distributors. TWC's programming assets are limited and largely regional or local in

nature. Thus, the transaction will not increase materially the concentration of programming at the national or regional level. Comcast will continue to have a limited share in video programming and to face strong competition from non-affiliated content providers at both the national and regional level. Consequently, Comcast will not gain market power to charge a supra-competitive price for its programming after the transaction.

26. Fifth, Comcast will not gain incentives to withhold programming from other video distributors to attempt to benefit its distribution business. After the transaction, Comcast will account for a limited share of customers both nationally and in areas where it will acquire TWC systems. Retransmission consent and license fee revenue from Comcast's broadcast and cable networks have made licensing to other video distributors a productive and important part of the company's business. These facts, along with the strong competition from a broad range of other content providers, mean that denying other video distributors access to Comcast's affiliated programming (or charging above-market rates) could cost Comcast significant revenues while yielding limited benefit to the combined company's cable systems. Therefore, the transaction will not raise any vertical program access concerns.

27. Finally, under current market conditions, Comcast has successfully negotiated carriage agreements with various MVPDs, OVDs, and content providers in recent years. Because the transaction will not give Comcast market power in program buying or selling, the market dynamics that have worked for Comcast, other distributors and content providers in recent negotiations will continue to allow the parties to reach competitive, mutually beneficial agreements post-transaction. The Commission's program access and carriage rules are in place to address any remaining competitive concerns, while the conditions in the NBCUniversal transaction are an additional backstop.

C. No Competitive Concerns Related to the Sale of Advertising

28. Another potential competitive concern that has been raised is that the transaction could give Comcast the incentive and ability to exercise market power in the sale of video advertising. This concern is without basis.

29. The sale of video advertising is highly competitive and this transaction will not reduce such competition for either national or local video advertising. Because it does not change the

ownership of any national networks, the transaction does not change the competitive landscape for national advertising. In local cable advertising, Comcast and TWC do not compete with one another now, so the transaction will not reduce cable advertising competition in any local market.[2] In the small number of Designated Market Areas ("DMAs") with both an NBC O&O station and a non-negligible number of TWC customers, there are differences between the spot broadcast advertising sold by the NBC O&O and the spot cable advertising sold by TWC that limit substitution between the two for some advertisers, and both face significant competition from other content providers and other media including online advertising.[3] Finally, TWC's regional and local programming assets are modest and their acquisition will not impact local advertising competition.

30. We develop these opinions in more detail in the remainder of this declaration. Section III summarizes the market landscape in video distribution, video programming, and advertising before and after the transaction.[4] Section IV provides an economic framework for analyzing the consumer benefits of the transaction, and presents specific examples of the benefits to residential consumers, businesses, and advertisers. Section V addresses competitive concerns about the transaction's impact on video services, and Section VI addresses competitive concerns about the transaction's impact on advertising.

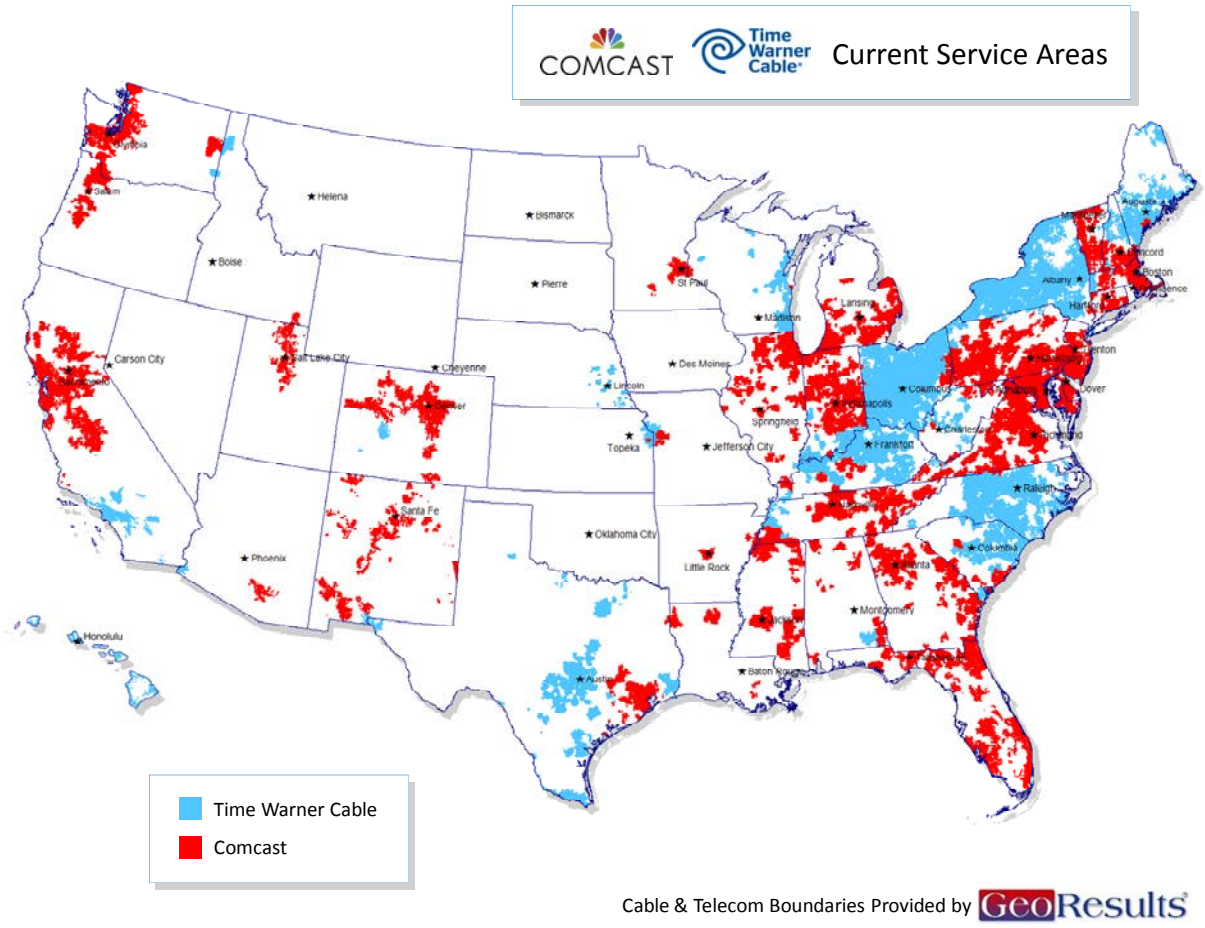
III. Market Landscape Before and After the Transaction

A. Video Distribution

31. Comcast currently has 21.7 million MVPD customers (roughly 22% of the MVPD customers nationally).[5] Comcast's cable systems are mainly located in the Northeast, Mid-Atlantic, Midwest, Florida, New Mexico, Colorado, Northern California, Oregon, and

[2] While TWC also sells local advertising on behalf of other MVPDs, including Comcast in some markets, the only change resulting from this transaction would be Comcast managing sales instead of TWC. In markets in which Comcast sells advertising on behalf of TWC and other MVPDs, there will be no change.
[3] Both the Commission and the DOJ have asserted that local broadcast and cable advertising are in separate markets, in which case this transaction would raise no advertising competition issues. See FCC Memorandum Opinion and Order in the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, January 20, 2011. See also Complaint, United States Department of Justice Antitrust Division v. Gannett Co., Inc., Belo Corp., and Sander Media LLC, December 16, 2013.
[4] Dr. Mark Israel's declaration addresses the market landscape in broadband services.
[5] 2013 Comcast Corp. SEC Form 10-K Annual Report ("Comcast 2013 10-K") at 3.

Washington. TWC currently has 11.4 million residential and commercial MVPD customers (approximately 11% of the MVPD customers nationally), with its cable systems located largely in New York, Ohio, Southern California, the Carolinas, Texas, Kentucky, Wisconsin, and New England.[6] The map below shows the footprint of Comcast's and TWC's MVPD services. After the transaction, Comcast will have approximately 30 million customers (assuming divestiture of about three million customers), or less than 30% of the MVPD customers nationally.



32. The franchise areas of Comcast's and TWC's cable systems do not overlap so they do not compete with each other for MVPD customers, even where both are present in a region or a local

[6] 2013 Time Warner Cable Inc. SEC Form 10-K Annual Report ("TWC 2013 10-K") at 2 and 4.

area.[7] Thus, the transaction does not change the number of competing MVPD providers from which any customer may choose and there is no change in the concentration of distributors (as measured by the HHI) in any relevant antitrust market. The acquisition of TWC's existing cable systems passing 29.8 million homes gives Comcast a greater geographic footprint over which it can compete with DBS and telco MVPDs as well as other video distributors.[8]

B. Video Programming

33. Comcast owns two national broadcast networks, NBC and Telemundo. Comcast also owns 10 NBC owned and operated ("O&O") stations and 17 Telemundo O&O stations. Since TWC does not own any national broadcast networks or over-the-air television stations, the transaction will not change Comcast's ownership of national broadcast networks or over-the-air television stations.

34. Comcast currently has an attributable ownership interest in 24 national cable networks, including a majority controlling interest in 16 networks such as USA, CNBC, E!, Syfy, MSNBC, Bravo, Golf Channel, Oxygen, and NBC Sports Network. Those 24 national cable networks comprise 9.7% of the 247 national cable networks currently operating.[9] Comcast also has a non-controlling interest in iN DEMAND, a pay-per-view programming service.

35. TWC's ownership interests in national programming services are limited. It has a 6.35% interest in MLB Network and a 29.3% interest in iN DEMAND. Comcast has a non-controlling ownership interest in both services and the transaction will not change the number of national programming services in which Comcast has an attributable interest. In terms of revenues from

[7] We understand that Comcast currently has fewer than 2,800 residential and SMB customers and 215 business customers in zip codes where TWC also has residential or business customers. Even these customers may not be passed by both companies.

[8] SNL Kagan. "Top Cable System Operators as of 09/30/13 (By Basic Subs)."

[9] SNL Kagan, "Cable Network Ownership (2014)." The figures do not count HD feeds as separate networks. If HD feeds are counted as separate networks, then Comcast has an attributable interest in 47 out of 434 (10.8%) national cable networks. Comcast holds a lower attributable interest in the national SD cable networks now than it did just after conclusion of the NBCU transaction. There are various ways to calculate the number of national programming networks. For example, in the Commission's recent Program Access Notice of Proposed Rulemaking, the Commission concluded that there were approximately 800 national programming networks (including HD networks). See In re Revision of the Commission's Program Access Rules, Notice of Proposed Rulemaking, 27 FCC Rcd 3413 (2012).

national cable networks, Comcast has a share of 10.51% today, which is smaller than Disney/ABC, Time Warner, and Viacom today and will continue to be smaller post-transaction.[10]

36. Comcast has ownership interests in 12 affiliated Regional Sports Networks ("RSNs"), including 11 in which it has a controlling interest. Most of Comcast's RSNs carry major league sports teams.[11]

37. TWC owns or controls 16 local or regional networks that include qualifying RSN content, but only one carries major league sports content in English (TWC SportsNet, which features Los Angeles Lakers programming).[12] TWC's other networks that qualify as RSNs are primarily local in nature and focus on college sports content or, in a few cases, Spanish-language coverage of some NBA and MLB games.[13] TWC also has a minority interest in SportsNet New York, in which Comcast likewise has a minority interest and will remain a minority owner post-transaction.[14] In addition, TWC provides affiliate sales, ad sales, and certain other production and technical services to SportsNet LA, which carries the Los Angeles Dodgers. Therefore, after the transaction, Comcast will only gain a limited amount of regional programming.[15]

38. Overall, Comcast currently has a share of 11.61% of total network revenues (including broadcast, cable, and RSNs), which will increase to 11.86% post-transaction, an increase of just 0.25%.[16]

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[10] Comcast held the same position following the NBCUniversal transaction. In this and later calculations of total revenues from networks owned by a company, the revenues of a network are all attributed to the majority owner if there is one with greater than a 50% ownership stake; if there is not a majority owner, the network's revenues are assigned to a hypothetical entity with the same name as the network. Because Comcast will not gain controlling interest in more national cable networks in this transaction, its national cable network revenue share will remain at 10.51% post-transaction.

[11] For example, Comcast SportsNet Chicago carries the Chicago Bulls (NBA), White Sox (MLB), Blackhawks (NHL), and Chicago Cubs (MLB); Comcast SportsNet Mid-Atlantic carries the Washington Wizards (NBA), and the Washington Capitals (NHL); and Comcast SportsNet New England carries the Boston Celtics (NBA). Cable Sports Southeast recently announced plans to cease operations on May 31, 2014.

[12] *See In re Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements*, First Report and Order, 25 FCC Rcd 746 ¶ 69 n.249 (2010) (defining "Covered RSN" based on minimum amount of certain sports programming).

[13] TWC owns regional networks with coverage of NBA and other major league sports games in Spanish, including TWC Deportes (L.A. Lakers), Channel 858 (L.A. Clippers and Anaheim Angels through a feed from Fox), and Canal de Tejas (Dallas Mavericks, San Antonio Spurs, and Texas Rangers, through a feed from Fox)

[14] SportsNet New York is currently owned by Sterling Equities (65%), TWC (27%), Comcast (8%), and Sterling Equities will continue to be the majority owner after the transaction.

[15] In addition to RSNs, both Comcast and TWC own a number of local or regional news and lifestyle networks, which we understand are small and have limited revenues.

[16] Including national cable networks and RSNs, and excluding broadcast networks, Comcast's share of revenue is 10.55% today and will increase to 10.93%. These calculations exclude international programming revenues.

C. Advertising

39. As part of their video programming and video distribution businesses, both Comcast and TWC sell advertising to national, regional, and local advertisers. In particular, NBCUniversal sells advertising on the NBC and Telemundo broadcast networks, Comcast's national cable networks, Comcast's RSNs, and NBC and Telemundo O&Os, while Comcast Spotlight sells spot advertising on the local ad availabilities Comcast receives for carrying cable networks as well as on the local and regional networks owned by Comcast.[17] Through its advertising sales division TWC Media, TWC sells advertising on its RSNs and other local networks and on the local ad availabilities it receives from cable networks.[18] Additionally, Comcast and TWC (along with Cox Communications) jointly own National Cable Communications LLC ("NCC"), which aggregates spot cable and satellite advertising on behalf of a number of MVPDs for sale to national and regional advertisers.[19]

40. Since the transaction does not change the ownership of any national networks, the transaction will not increase Comcast's ownership of national broadcast and cable networks on which it sells network advertising. And since the footprints of Comcast's and TWC's cable systems do not overlap, the transaction will not change the number of options for advertisers to reach any cable household. There are a small number of DMAs with both an NBC O&O station and a TWC cable system that both sell spot television advertising: New York, Los Angeles, Dallas, and San Diego. We analyze these overlaps in Section VI.B below and demonstrate that there is no competitive harm.[20] Finally, the advertising sales of TWC's regional and local networks are modest and do not change the competitive landscape in local advertising.[21]

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[17] Comcast Spotlight also sells advertising on behalf of other MVPDs, including TWC, in some markets. However, there would be no change resulting from the transaction in those markets – Comcast would just receive a higher share of total revenues related to the subscribers in TWC's franchise area.

[18] TWC also sells advertising on behalf of other MVPDs, including Comcast, in some markets. For example, TWC manages Adlink in Los Angeles. The transaction will not result in any changes in these markets other than Comcast managing the sales rather than TWC and receiving a higher proportion of revenues related to the subscribers in TWC's franchise area.

[19] Since NCC simply aggregates spot advertising from different MVPDs and Comcast's and TWC's service areas do not overlap, the transaction will not reduce competition in the advertising sold by NCC.

[20] Similarly, there are a small number of DMAs with both a Telemundo O&O station and a TWC cable system (with a non-negligible number of subscribers) that both sell spot television advertising: New York, Los Angeles, Dallas and San Antonio, which we also analyze in Section VI.B.

[21] The principal regional programming networks for which TWC sells advertising are the RSNs in southern California (Time Warner Cable SportsNet, Time Warner Cable Deportes, SportsNet LA, and Channel 858), New York (SportsNet New York), and Texas (Canal de Tejas).

IV. Competitive Benefits and Efficiencies

41. In this section, we present examples of competitive benefits and efficiencies that are likely to result from the transaction. We start by providing an economic framework for examining how the transaction could facilitate increases in output, enhance competition, and increase the speed and scope of innovation. We then apply this economic framework to residential, business, and advertising services. Also, innovation is unpredictable so that bringing together two innovative cable operators with the scale to justify new investments could lead to many additional products and services that would benefit consumers.

A. Economic Framework

42. There are three primary economic mechanisms that will drive benefits from the transaction: economies of scale, expanded geographic reach, and sharing of technologies and services. Scale can make the difference between investing in a new product and service and not investing, and it can speed up the pace of product and service introductions and enhancements. Expanded geographic reach allows firms to compete more effectively for customers, especially business customers, whose operations span multiple regions. Sharing best practices and services can increase consumers' access to cutting edge services.

43. Contracting is a common mechanism to achieve some of the benefits of increased scale, expanded geographic reach, and sharing of technologies and services. However, in many cases contracting does not achieve all of the potential benefits because of well-known difficulties that arise in contracting, including transactional frictions and costs, differences in beliefs, double marginalization, and the requirement for large investments specific to collaboration with another company in which returns hinge on the future behavior of the other company. Indeed, as discussed below, Comcast and TWC have sought to achieve efficiencies via contracting or consortium approaches in several contexts with mixed results, and the complexity and uncertainty of such arrangements has reduced the benefits relative to what the parties can achieve through the transaction. The transaction will allow current and future customers to reap the benefits that stem from the three main economic mechanisms discussed below.

1. Economies of Scale

44. Scale is an important determinant of investment in new technologies and services when most of the required investments are fixed costs—that is, when costs do not depend on the number of customers to whom services will be provided. The fact that fixed costs lead to economies of scale is a fundamental tenet of the economics of the firm.[22] Fixed costs lead to economies of scale because average costs decrease as output increases.[23]

45. As communications technologies have advanced rapidly and the MVPD industry has matured, fixed cost investments in developing new and compelling digital technologies have become more important. When cable operators were still rapidly building out within their franchise areas, one of the main sources of new customers was laying more cable to connect more homes—a variable cost that increases with the number of added homes. Since cable operators now pass the vast majority of homes in their respective franchise areas,[24] they increasingly need to compete for customers with satellite companies, telcos, and other distributors by making investments in the development of new platforms and services and upgrading their networks, all of which have large fixed costs.[25] Large fixed costs give larger MVPDs a relatively greater incentive to invest in developing new platforms and services and in recent years larger MVPDs, including Comcast and TWC, have introduced the most innovative new MVPD video services.[26]

46. With greater scale, the fixed cost of investment can be spread across more potential customers, making any given investment less expensive on a per-customer basis. In making an investment decision, a firm calculates the net present value of an investment by weighing upfront costs against the present value of the stream of cash flows that will result from the investment.[27]

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[22] See, e.g., Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4th Ed., p. 36.
[23] See, e.g., Hal R. Varian, *Intermediate Microeconomics*, 6th Ed., p. 364.
[24] According to the Commission, as of the end of 2011, cable MVPD service was available in 98.6% of all U.S. homes. *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Fifteenth* Report, MB Docket No. 12-203, ("FCC 15th Video Competition Report"), ¶ 33.
[25] See, e.g., SNL Kagan, "After modest 2013 lift, CapEx poised for jump in 2014," 3/17/14: "U.S. cable providers posted modest capital expenditure increases in 2013 that are expected to give way to more substantial jumps in 2014, further indication that slowing growth does not directly result in slowing investment." In 2013, top cable companies invested $2.3 billion in scalable infrastructure and $524 million in line extensions. SNL Kagan, "After modest 2013 lift, CapEx poised for jump in 2014," 3/17/14.
[26] See, e.g., FCC 15th Video Competition Report, ¶¶ 99, 101–102, 114–116, 121–122.
[27] See, e.g., Stephen A. Ross, Randolph W. Westerfield, and Bradford D. Jordan, *Fundamentals of Corporate Finance*, 2nd Ed., pp. 220–223.

To the extent that the firm earns positive cash flows from each additional customer, a greater scale will result in a larger stream of positive cash flows.[28] Comcast uses the net present value framework in helping to evaluate business decisions.

47. As a simple numerical example, suppose a new technology would require an upfront investment of $100 (regardless of the number of customers) and would result in an expected present value of cash flows of $1 for each customer.[29] With fewer than 100 customers, it would not make sense for the firm to undertake the investment because the net present value of the cash flows would be less than $100, while with greater scale (more than 100 customers), the firm would undertake the investment. Because the firm and the customers will share in the total surplus associated with this new technology, both the firm and the customers will be better off with the technology than without it.

48. In addition, although some technologies would still be developed gradually, even by companies without the benefit of larger scale, having a larger scale can accelerate investment in development and deployment of new technology. When considering the timing of a particular investment, a firm maximizes the net present value across different choices of timing.[30] Larger scale may justify more rapid investment and deployment because the potential returns become larger and it is more valuable to garner them sooner; having additional scale may make it profitable to hire more developers and engineers and thereby achieve the same technological improvement in less time. More rapid development and deployment will increase net present value if the increase in the present value of cash flows (due to less discounting) outweighs the increase in the present value of investment costs.

49. Consider the simple numerical example from above. Suppose that making the investment sooner increases the present value of the upfront investment cost to $150 and the cash flows to $1.50 per customer, due to less discounting. The investment cost is $50 greater regardless of the number of customers, but the benefit of making the investment sooner is increasing in the number of customers ($0.50 times the number of customers). As a result, in this simple example

[28] See, e.g., Stephen A. Ross, Randolph W. Westerfield, and Bradford D. Jordan, *Fundamentals of Corporate Finance*, 2nd Ed., pp. 298–300.
[29] In this example, the expected present value of cash flows takes into account the cost of capital faced by the firm.
[30] See, e.g., Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance*, 7th Ed., pp. 137–138.

a firm with fewer than 100 customers would not make the investment; a firm with between 100 and 150 customers would make the investment; and a firm with more than 150 customers would make the investment sooner. Scale can increase and accelerate investment in new technology.

50. The economies of scale that arise in this transaction come from the combined company's ability to compete for customers in geographic areas that had previously been unavailable to Comcast, in contrast to a more typical merger in which Company A increases its scale by acquiring direct rival Company B that operates in the same product and geographic markets as Company A. If it were the case that one company was merging with a direct rival, then an alternative way to achieve scale would be to compete for more customers in the common product and geographic market and add scale "organically." However, this alternative way to achieve scale does not apply to the current transaction because, as noted above, Comcast and TWC do not compete for MVPD customers. The transaction increases scale by removing some of Comcast's (and TWC's) geographic limitations on scale, allowing the combined company to reach more homes and businesses.

51. This transaction has been described as an increase in Comcast's MVPD customers from approximately 21.7 million to 33.1 million (or 30 million after divestitures), but it can also be seen as an increase in Comcast's homes passed and potential customers from 53.7 to 83.5 million (fewer after divestitures).[31] From TWC's perspective, this transaction will result in an even more significant increase in scale, going from approximately 11.4 million customers to about 33.1 million (or around 30 million after divestitures) MVPD customers and from approximately 29.8 million homes passed to approximately 83.5 million homes passed (fewer after divestitures). The combined company will be competing for these customers with DIRECTV and DISH, both of which operate on a national scale, with AT&T or Verizon (both national companies even though they have wireline plant only in certain geographic territories that are significantly larger than Comcast's or TWC's), and with a variety of other MVPDs in certain geographic areas. In addition, it will compete everywhere with OVDs for certain services (like subscription video on demand, or "SVOD"), particularly with OVDs that are planning to offer linear "over-the-top"

[31] SNL Kagan, "Top Cable System Operators as of 9/30/13."

("OTT") video service, like Sony and DISH.[32] The company also competes for certain services with Google, Apple, Amazon, and other technology companies with national or even global reach.

52. There are several ways in which the increased scale from the transaction will benefit residential consumers, businesses, and advertisers. Comcast invests around $1 billion each year in intangible assets, most of which is devoted to software research, development, and deployment to improve its products and services and to develop new ones.[33] A significant cost of developing new products and services is the cost of employing highly trained developers and engineers at Comcast's technology centers around the country, including Seattle, Silicon Valley, Denver, Washington, DC, and Philadelphia.[34] Comcast employs over 1,000 developers and engineers and holds over 950 patents and pending patent applications.[35] The technologies created by these developers and engineers can be leveraged across all Comcast customers, but the cost of developing and deploying the technology is largely independent of the number of customers.

53. Developing and deploying new technology also requires capital investments (e.g., computing and network resources), some of which are fixed costs.[36] In addition to pure research and development costs, there are additional costs associated with planning, organization, management, and coordination across business units that Comcast incurs in creating new products and services. The ability to spread these costs across a greater number of customers

[32] Cliff Edwards, "Sony Plans Internet-Based Television Service in U.S. This Year," *BloombergBusinessweek*, 1/7/14, available at http://www.businessweek.com/news/2014-01-07/sony-corp-dot-to-introduce-web-based-tv-service-in-u-dot-s-dot-this-year; Liana B. Baker and Varun Aggarwal, "Dish eyes Internet TV services in landmark Disney deal," *Reuters*, 3/4/14, available at http://www.reuters.com/article/2014/03/04/us-dish-disney-idUSBREA222A720140304.
[33] Declaration of Michael J. Angelakis, ¶ 13.
[34] Interview with Tony Werner (Executive Vice President and Chief Technology Officer, Comcast Cable).
[35] Comcast.com, "Our Story," available at http://corporate.comcast.com/our-company/our-story; Andy Vuong, "Comcast cranks up its research labs to quickly create new video products," *The Denver Post*, 10/30/11, available at http://www.denverpost.com/ci_19221359; United States Patent and Trademark Office, patent query for Assignee Name "Comcast," available at http://assignments.uspto.gov/assignments/q?db=pat&asne=COMCAST&page=1.
[36] For example, developing the X1 platform required investment in data centers and subsystems that carry out tasks like authentication of users. Interview with Tony Werner (Executive Vice President and Chief Technology Officer, Comcast Cable). As another example, Comcast's Cloud DVR system required investments in network upgrades, network design, and encoders for local channels. Interview with Sree Kotay (Senior Vice President, Chief Software Architect, Comcast Cable).

would make it cheaper on a per-customer, or per-potential customer,[37] basis for Comcast to develop and deploy new technologies and services. Moreover, because Comcast generally provides a standardized and consistent set of products and services across its entire footprint, all its current and future customers benefit from the deployment of new technologies and services enabled by economies of scale.[38] In fact, content providers have already noted that the increased scale from this transaction will likely lead to new technological options for content on more platforms and services.[39]

54. The Commission does not always credit fixed cost savings arising in transactions because, from a static perspective, price reductions depend on lower marginal costs.[40] However, the deployment of new technologies depends on a firm's willingness to undertake the fixed costs of research, development, and deployment. As a result, while such costs are "fixed" when viewed through a static lens, they are incremental costs when viewed through the lens of undertaking or accelerating investment and new product deployment.[41] For this reason, the Antitrust Modernization Commission stated that reductions in fixed costs can be an important source of procompetitive benefits: "Failure to take account of and give proper weight to such

[37] When undertaking an investment in a new product or service, Comcast cannot be certain of the number of its future customers for that product or service. It must compete for those customers. Therefore, although we refer to "per-customer costs" throughout this declaration, we mean the "per-expected customer costs."

[38] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

[39] Philippe Dauman, Viacom CEO: "[W]e welcome what Comcast had said about investing in its platform, providing more revenue opportunities with its consumers, investing in the capital infrastructure both in its own systems and the newly acquired system because . . . what is of highest importance to us is to make sure our content is available ubiquitously on different platforms in a measured way." Viacom – Deutsche Bank Investors Conference, 3/10/14; David Zaslay, Discovery Communications President and CEO: "Comcast is a great company. If they're successful in bringing this deal to the finish line, I'm sure that they'll do a great job in offering a lot of different products to consumers to consume content, including TV Everywhere where they're a leader, and that will be advantageous for us." Q4 2013 Earnings Call, 2/13/14; Chase G. Carey, 21st Century Fox President: "[T]here may be some positive [consequences from cable consolidation] . . . new digital platforms in over the top players may grow even more quickly with a consolidated distribution industry." Corrected Transcript Q2 2014 Earnings Call, 2/6/14.

[40] See, e.g., In the Matter of Applications of Cricket License Company, LLC, et al., Leap Wireless International, Inc., and AT&T Inc. for Consent To Transfer Control of Authorizations Application of Cricket License Company, LLC and Leap Licenseco Inc. for Consent to Assignment of Authorization, WT Docket No. 13-193. Released March 13, 2014, ¶ 132: "Third, the Commission has stated that it 'will more likely find marginal cost reductions to be cognizable than reductions in fixed cost.' The Commission has justified this criterion on the ground that, in general, reductions in marginal cost are more likely to result in lower prices for consumers." [Footnotes omitted] See also, Alaska Wireless Order, 28 FCC Rcd at 10468 ¶ 87; Verizon Wireless-SpectrumCo Order, 27 FCC Rcd at 10735 ¶ 97; AT&T-Centennial Order, 24 FCC Rcd at 13954 ¶ 90.

[41] See, e.g., Hal R. Varian, *Intermediate Microeconomics*, 6th Ed., pp. 371–373: "In the long run a firm can choose the level of its 'fixed' factors—they are no longer fixed."

fixed costs in evaluating a merger could deprive consumers and the U.S. economy of significant benefits from a procompetitive merger."[42]

55. Scale can also lead to investments that lower marginal costs. For example, Comcast incurred significant fixed cost investment in developing web-ordering interfaces and self-install and self-help systems that have reduced its marginal cost of serving customers. Comcast has also made fixed cost investments that allow it to provide consistent services throughout its footprint.[43] Having a ubiquitous set of services across its entire footprint reduces Comcast's marginal costs for technicians, customer service agents, billing, and other operational functions, and is a benefit to customers.[44]

56. In addition, the larger scale enabled by the transaction should make the combined company a more attractive partner for device manufacturers seeking to provide apps to deliver video services on a wider range of third-party devices and technology firms seeking to deliver video to consumers in new, innovative ways. Having a larger potential customer base makes developing these apps and services more feasible for Comcast and more appealing for the partnering company.

57. In fact, one of the reasons that Comcast is able to offer some of the highest-quality services among cable operators today (examples of which are discussed in detail below) is that it has relatively large scale compared to other cable operators. Comcast has been able to invest in innovations and high quality service in part due to previous scale-enhancing transactions, including its acquisitions of the AT&T Broadband and Adelphia systems.

2. Expanded Geographic Reach

58. Expanded geographic reach will increase Comcast's ability to serve customers whose needs span the existing geographic footprints of Comcast and TWC. In addition, geographic

[42] Antitrust Modernization Commission, Report and Recommendations, April 2007, p. 58. See also U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, August 19, 2010, §10.
[43] For example, Comcast has made the investments necessary to complete the transition to all-digital, to deploy DOCSIS 3.0 throughout its footprint, and to deploy the X1 platform throughout its footprint.
[44] See, e.g., Comcast 2Q 2012 Conference Call, 8/1/2012: "The second quarter CapEx reflects our investment to support the continued growth in business services, which totaled $162 million. In addition, CPE expenditures decreased 13% as we benefit from improved pricing and near completion of the all-digital project, which recaptures analog bandwidth in a number of our markets. In total, we have deployed over 25 million digital adapters since the inception of this project. *As a result of this project, we continue to realize operating efficiencies and strategic benefits from fully digitizing our systems*." (Emphasis added)

agglomeration can lead to operating efficiencies and the ability to provide higher quality services to customers in certain geographic areas.

59. On the consumer side, expanded geographic reach should encourage more extensive provisioning of a public Wi-Fi network in the footprint of the combined company. By aligning the incentives to invest in Wi-Fi service throughout the combined company's footprint, the transaction should lead to more Wi-Fi hotspots and improvements to Wi-Fi service. This expanded Wi-Fi network would allow the combined company's customers more readily to access a full array of high-speed data services when traveling outside their homes.

60. Residential customers (as well as edge providers) should also benefit from Comcast adding TWC systems in regions proximate to its own systems, because Comcast will have a greater incentive to build out more Converged Regional Access Networks ("CRANs") and support those CRANs with new regional data centers, delivering more scalable capacity for broadband and IP cable services; reducing latency in delivering services to customers; making the network more reliable and resilient; and potentially offering new options for regional interconnections. We discuss these examples in more detail in Section IV.B.2 below.

61. On the business side, expanded geographic reach will increase the ability of the combined company to serve super-regional businesses whose operations extend beyond the individual footprints of Comcast or TWC but fall within the combined company's footprint. Examples include Boston/New York/New Jersey/Philadelphia/Baltimore/Washington, DC, Virginia/North Carolina/South Carolina, Los Angeles/Sacramento/San Francisco/Portland/Seattle, and Houston/Dallas/Austin/San Antonio. We discuss the combined company's ability to serve super-regional businesses below in Section IV.C.

62. Having the ability to serve more locations on its own network for a given business should make Comcast a more effective competitor in providing business services. A larger footprint will make Comcast more likely to make investments to build out its network to multi-location businesses within its own footprint because being able to serve multiple locations is complementary for Comcast—having customer location A on Comcast's network gives Comcast more incentive to build out its network to customer location B. Comcast will also be able to

offer lower prices for service on its own network than it could offer when working with a third party due to lower costs and reducing double marginalization.

63. Furthermore, increased network build-out to specific business customers has spillover benefits for other current and potential business and residential customers. When Comcast or TWC makes the decision to build out network infrastructure to serve a specific customer, it does not consider only the impact on that customer.[45] Instead, each company takes into account other potential customers who will have more on-net locations on the new route. Comcast and TWC both choose the new route to maximize long-run profit, which may not be the most direct route.[46] As a result of a new route, additional new customers benefit from the newly available service and existing customers can benefit from enhanced service due to increased capacity. Moreover, when Comcast or TWC makes investments in systems and operations for demanding business customers (e.g., wireless carriers in need of backhaul service), there are spillover benefits for other business and residential customers from improved service reliability. Reciprocally, the benefits of improving Comcast's network through building CRANs inure to business customers as well, who would directly benefit from the build-out of fiber deeper through the network, which will deliver more scalable capacity for business services like metro Ethernet.

64. On the advertising side, the combined company's expanded geographic reach and presence in additional advertising markets, such as New York and Los Angeles, should provide a compelling new option for advertisers that wish to take advantage of Comcast's addressable advertising services and can accept the absence of full national reach.

3. Sharing of Technologies and Services

65. By combining the Comcast and TWC portfolios of technologies and services, the combined company should be able to provide more services at lower cost than Comcast or TWC could on its own. It will be more efficient for Comcast and TWC to provide these services as a combined company because the two firms use similar inputs in creating these services. In

[45] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable); Interview with Phil Meeks (Executive Vice President and Chief Operating Officer, Business Services, Time Warner Cable).

[46] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable); Interview with Phil Meeks (Executive Vice President and Chief Operating Officer, Business Services, Time Warner Cable).

addition, each company brings proprietary technology and specialized knowledge about providing its unique mix of services.[47]

66. Although there may be some costs associated with implementing current Comcast services in TWC territory (and vice versa), and some Comcast services may be technologically incompatible with TWC infrastructure, the specialized knowledge brought by both companies to the transaction should speed up the deployment of advanced Comcast services to consumers in the TWC footprint. For example, Comcast brings specialized knowledge about providing certain advanced video service technologies, such as its X1 platform, to the combined company. Due to that specialized knowledge, it will be less costly to provide that platform and equipment to current TWC systems than it would be for TWC to develop and deploy them on its own.

67. In addition, the quantity and variety of NBCUniversal programming that Comcast obtained in the NBCUniversal transaction gave Comcast management the ability and incentive to invest to increase content availability through a variety of different platforms, services, and business models.[48] That programming, along with Comcast's investments in upgrading its network and backbone and building out content delivery networks, has enabled Comcast to experiment with, and invest in new program delivery platforms, including TV Everywhere and expanded VOD access for Comcast customers. The combined company will be able to offer those benefits to customers in TWC territory.

68. Sharing of technologies works in both directions. For example, TWC brings knowledge about providing certain advanced business services, including certain metro Ethernet services, to the combined company. Customers in current Comcast territory should benefit from Comcast's enhanced ability to provide these services after the transaction.

[47] The benefits due to sharing technology and knowledge can be thought of as economies of scope in the production of these products and services. For more on economies of scope, see, e.g., Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4th Ed., pp. 21, 45.

[48] Declaration of Gregory L. Rosston, Ph.D., "An Economic Analysis of Competitive Benefits from the Comcast-NBCU Transaction," 5/4/10, ¶¶ 48–50.

4. Economies of Scale, Geographic Reach, and Sharing of Technology and Services in Previous Comcast Transactions

69. Comcast's customers have benefitted from the increased scale and expanded geographic reach Comcast has obtained in prior transactions. The results of two previous transactions, Comcast's acquisitions of AT&T Broadband and Adelphia, illustrate the gains Comcast was able to achieve by adding systems. Following the 2002 AT&T Broadband transaction, Comcast was able to realize economies of scale that allowed it to undertake larger fixed cost investments. The Commission recognized that benefit of the transaction:

> We also agree with the Applicants that the greater scale and scope of the merged entity is likely to spur new investment. The development and deployment of new technologies often entails a significant up-front, fixed investment. The merged company should have a greater ability to spread those fixed costs across a larger customer base, which should in turn foster incentives for investment by the merged entity, as well as other businesses that seek to sell equipment, technology, and services to the merged entity.[49]

70. In 2006, a few years after the AT&T Broadband transaction was completed, the Commission found that the transaction had resulted in the accelerated deployment of facilities-based high-speed Internet service, digital video, and other broadband services to the AT&T Broadband systems acquired by Comcast.[50] At the time, the Commission was reviewing Comcast's and Time Warner Cable's application to acquire Adelphia's systems. The Commission found the evidence from the AT&T Broadband transaction persuasive enough to conclude that it was "likely that Comcast and Time Warner will improve the quality and

[49] In re Applications for Consent to the Transfer of Control of Licenses from Comcast Corporation and AT&T Corp., Transferors to AT&T Comcast Corp., Transferee, Memorandum Opinion and Order, 17 FCC Rcd. 23246, ¶ 184.

[50] "We also find it likely that Comcast and Time Warner will improve the quality and availability of advanced services on Adelphia's systems and that Adelphia subscribers will benefit from the transactions in this regard. Comcast's and Time Warner's timely deployment of advanced services on their own systems, especially those systems that Comcast acquired from AT&T Broadband, suggests that they will further deploy advanced video services, facilities-based telephony service, and high-speed Internet service on Adelphia's systems. We also find that the Applicants have provided sufficient information to conclude that the upgrades likely will occur in the near future." *In re Applications for Consent to the Assignment and/or Transfer of Control of Licenses Adelphia Communications Corporation (and Subsidiaries, Debtors-In-Possession), Assignors, to Time Warner Cable Inc. (Subsidiaries), Assignees, Adelphia Communications Corporation, (and Subsidiaries, Debtors-In-Possession), Assignors and Transferors, to Comcast Corporation (Subsidiaries), Assignees and Transferees*, Memorandum Opinion and Order, 21 FCC Rcd 8203 ¶ 23 (2006) (*"Adelphia Order"*), ¶ 257.

availability of advanced services on Adelphia's systems and that Adelphia customers will benefit from the transactions in this regard."[51]

71. After the Adelphia transaction, Comcast and Time Warner Cable substantially increased their capital expenditures to upgrade the former Adelphia systems so that customers in those territories could receive advanced digital services.[52]

5. Contracting as an Alternative

72. A potential alternative to achieve the benefits of increased scale and expanded geographic reach could be through partnerships or licensing arrangements among cable companies operating in different geographic regions. In fact, cable operators have in the past attempted to achieve greater scale through partnerships, licensing, and joint ventures. These efforts demonstrate the importance of having large scale to justify investments in new technologies. But for several reasons set forth below, as these past efforts demonstrate, the full benefits of scale afforded by this transaction could not be attained through contracting.

73. Many times, it makes sense for companies to enter into contracts—in fact a large share of the economy is built on firms making such decisions. However, there are a number of reasons for difficulties and frictions in reaching agreements through contracts, including different expectations about costs, demand, and profits, different perceptions of and attitudes toward risk, different business models, and the complexity and uncertainty of the technology involved.[53] The existence of these transactional frictions can make it more efficient for firms to integrate than to operate through contracts.[54] These frictions may arise because different companies have different sources of information, different experiences, different strategies, different embedded technologies, and different networks. The uncertainty inherent in developing new technologies

[51] Adelphia Order, ¶ 257.
[52] SNL Kagan, "Double-Digit CapEx Increases In Line For 2007," 3/20/07.
[53] For more on frictions associated with contracting, see, e.g., Oliver Williamson (1979), "Transaction-Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics*, Vol. 22, No. 2, pp. 233–271; Oliver Williamson (1971), "The Vertical Integration of Production: Market Failure Considerations," *The American Economic Review*, Vol. 61, No. 2, pp. 112–123.
[54] See, e.g., Oliver Williamson (1979), "Transaction-Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics*, Vol. 22, No. 2, pp. 233–271; Francine Lafontaine and Margaret Slade (2007), "Vertical Integration and Firm Boundaries: The Evidence," *Journal of Economic Literature*, Vol. 45, No. 3, pp. 629–685. See also, Declaration of Gregory L. Rosston, Ph.D., "An Economic Analysis of Competitive Benefits from the Comcast-NBCU Transaction," 5/4/10.

as well as the varying experiences of individual cable operators can lead to very different expectations across the operators.

74. Even if companies are able to enter into partnerships, customers may face a higher price for the resulting service than they would face from a single entity due to the phenomenon of "double marginalization."[55] Double marginalization, or double markup, occurs when there are at least two entities in the distribution chain above the customer. Because each company in the distribution chain needs to cover its total costs, it will generally impose a markup over the direct costs it faces to provide the service. That is, both companies will earn a positive margin above marginal cost. Double marginalization leads to higher prices for consumers and lower combined profits for providers compared to the case of an integrated provider. When the service is provided by a single provider directly to the customer, the provider internalizes all costs and imposes only one markup to cover its costs, which leads to a lower price for the customer. We discuss the double marginalization that can occur when Comcast or TWC partner with each other to serve super-regional businesses in Section IV.C below.

75. Cable operators may be hesitant to invest in new facilities or technologies in their regions if the return on such investment is dependent on other cable operators making complementary investments in other regions at the same time. In addition, cable operators may be uncertain about how demand for their services will develop and how returns from the investment will be shared amongst the operators making the investments. Developing new platforms and technology, whether they are for video, broadband, voice, or some other service, often requires risky, business-specific investment.[56] Each company in a partnership or licensing agreement will be wary of making investments whose return hinges on the future behavior of other companies, especially because the other companies could potentially take advantage of the irreversibility of the company's business-specific investment. This is a standard problem in the economics of contracts known as the "hold-up" problem.[57] Of course, if the contracting companies were able to write "complete" contracts that took into account all possible states of the world, there would

[55] See, e.g., Jean Tirole, *The Theory of Industrial Organization*, pp. 174–175.
[56] Declaration of Gregory L. Rosston, Ph.D., "An Economic Analysis of Competitive Benefits from the Comcast-NBCU Transaction," 5/4/10, ¶ 19.
[57] See, e.g., Jean Tirole, *The Theory of Industrial Organization*, pp. 24–25; Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4th Ed., pp. 400–403.

be no scope for post-contractual opportunistic behavior and hold-up would not be a problem. However, due to transaction costs and the inherent complexities and uncertainties involved in creating new technologies and services, in practice, contracts are usually incomplete.[58] Fear of hold-up can lead companies to delay investment, underinvest, or even not to invest at all.

76. Other factors that can lead to difficulty in creating partnerships between cable operators are the diverse activities of each company, the different plans each company has for the many facets of its business, and the fast pace of technological change in the industry. Because partnerships are often narrow in scope, it is difficult to establish partnerships that can be flexible enough to accommodate evolving technologies and align with the many aspects of each company's business. For example, a partnership on one aspect of TV Everywhere services might face setbacks and delays because different companies have different underlying technologies and different beliefs about how their TV Everywhere service would fit into their overall product portfolios. Because cable companies often foresee such impediments, many potential partnerships are not undertaken.

77. For some industry-wide cable technologies, CableLabs, a research and development consortium supported by some cable companies, has been able to facilitate agreement on standards such as DOCSIS and CCAP.[59] While it has been effective at developing common standards for some technologies, CableLabs is not responsible for making the investments necessary to develop and deploy actual products and services. Creation of actual products and services, while enabled by technology standards, requires substantial additional investment. For example, while CableLabs was able to facilitate agreement on the DOCSIS standard, it did not have to develop and deploy the DOCSIS 3.0 modems now being deployed.

78. In addition, CableLabs does not obviate the need to ensure compatibility in business relationships where cable companies need to cooperate to serve customers across regions. Such

[58] See, e.g., Oliver Hart and John Moore (1988), "Incomplete Contracts and Renegotiation," *Econometrica*, Vol. 56, No. 4, pp. 755–785; Benjamin Klein, Robert G. Crawford, and Armen A. Alchian (1978), "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," *Journal of Law and Economics*, Vol. 21, No. 297, pp. 297–326.

[59] CableLabs "work[s] in cooperation with cable companies and cable equipment manufacturers, … [to] develop[] sets of publicly available interface specifications to facilitate interoperability of cable devices, including cable modems, set-top boxes, digital televisions, and various telephony devices." CableLabs.com, "Specifications," available at http://cablelabs.com/specs.

arrangements can become very complex, requiring agreement on technology, pricing, investment, and customer relationships amid a large degree of uncertainty.

79. Several attempted collaborations between cable operators have been less successful and demonstrate the difficulty cable operators have had in effectively gaining scale through arms-length collaborations and partnerships. The transactional frictions associated with some negotiations have made it difficult for Comcast, TWC, and other cable operators to develop technologies in partnership or to reach licensing agreements for new technologies. These challenges are described below in Sections IV.B and IV.C in the context of efforts to license the X1 platform, Comcast's and TWC's efforts to collaborate on a common "front door" for TV Everywhere services and a "Download to Go" feature, and the Canoe Ventures advertising consortium.

6. Competitive Response

80. Comcast's and TWC's existing customers have several competitive options for MVPD, broadband, voice, and advertising services, and will continue to have those same options after the transaction. The transaction gives Comcast the ability to compete for customers in an expanded footprint, but it will need to compete for these customers with national-scale companies like DIRECTV and DISH; companies with broad geographic reach like AT&T, Verizon, and CenturyLink; and for some services with companies like Google, Apple, and Amazon, which have a national (or even global) scale and presence; as well as with other video, broadband, voice, and advertising providers.

81. In the following sections, we provide examples of how the increase in scale, geographic reach, and shared technologies and services afforded by this transaction will facilitate and accelerate deployment of new and enhanced products and services. These enhanced products and services will likely encourage a competitive response from DBS operators, telcos, and other competitors for video, voice, broadband, technology, and advertising. For example, the Commission notes that, "[t]o attract new subscribers and retain existing subscribers, MVPDs use various competitive strategies, including . . . freeing up bandwidth for additional services,

delivering video to computers, tablets, and mobile devices, and differentiating their services from those of competitors."[60]

82. Competitive response can lead to new or improved video services, higher broadband speeds and greater reliability, new voice offerings, new technologies and equipment offerings, and lower prices. For example, in response to the announcement of the Comcast–TWC merger, AT&T stated that the transaction puts a "heightened sense of urgency" on its "network infrastructure commitment" to build out its Internet-protocol fiber network and LTE network.[61] Verizon also noted that it is "ready to compete" against Comcast after the merger.[62] In response to competition from Comcast's and TWC's broadband offerings, Verizon introduced a "double up" promotion, which bundles wireless with wireline broadband.[63] AT&T recently redesigned its U-verse user interface with some features similar to Comcast's X1.[64] DIRECTV is exploring ways to offer a national OTT video service.[65] Around the same time Comcast began deploying X1, DISH started deploying advanced DVRs that include its "Hopper" technology,[66] and is reportedly planning to roll-out a new OTT video service as well, having recently signed a deal with Disney.[67] Verizon FiOS is focusing on improving its TV Everywhere and Redbox services.[68]

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[60] FCC 15th Video Competition Report, ¶ 86.

[61] Randall L. Stephenson, President and CEO of AT&T, Inc., Morgan Stanley Technology, Media & Telecom Conference Call Transcript, 3/6/14. See also Thomas Gryta, "Comcast Has AT&T Worrying About the US," *The Wall Street Journal*, 3/6/14.

[62] Jim Barthold, "Comcast's Smit: MSO, Time Warner Cable are 'very well aligned,'" *Fierce Cable*, 3/10/14, available at http://www.fiercecable.com/story/comcasts-smit-mso-time-warner-cable-are-very-well-aligned/2014-03-10.

[63] Sean Buckley, "Verizon's Shammo: We'll look at FiOS expansions once it returns the cost of capital," *Fierce Cable*, 3/10/14, available at http://www.fiercetelecom.com/story/verizons-shammo-well-look-fios-expansions-once-it-returns-cost-capital/2014-03-10.

[64] Jim Barthold, "AT&T juices up U-verse on-demand features, redesigns user interface," *Fierce Cable*, 5/16/13, available at http://www.fiercecable.com/story/att-juices-u-verse-demand-features-redesigns-user-interface/2013-05-16.

[65] SNL Kagan, "The top 20 reasons why it makes sense today for cable MSOs to consolidate," 12/16/13.

[66] See, e.g., Amar Toor, "Dish Network announces Hopper DVR system, Joey set-top box, launched broadband, Test Drive services," *Engadget*, 1/9/12, available at http://www.engadget.com/2012/01/09/dish-network-announces-hopper-dvr-system-joey-set-top-box-laun; Andy Vuong, "Set-top box battle: Dish's Hopper with Sling Vs. Comcast's Xfinity X1," *The Denver Post*, 3/11/13, available at http://www.denverpost.com/ci_22750649/set-top-box-battle-dishs-hopper-sling-vs.

[67] Liana B. Baker and Varun Aggarwal, "Dish eyes Internet TV services in landmark Disney deal," *Reuters*, 3/4/14, available at http://www.reuters.com/article/2014/03/04/us-dish-disney-idUSBREA222A720140304.

[68] Steve Hawley, "CES: Verizon Updates FiOS, Redbox Instant to Meet Borderless Lifestyle Demands," *Telecompetitor*, 1/15/13, available at http://www.telecompetitor.com/ces-verizon-updates-fios-redbox-instant-to-meet-borderless-lifestyle-demands/.

83. In addition to making Comcast a better competitor with its traditional facilities-based MVPD and broadband rivals, the increased investment in advanced video services due to the transaction will allow Comcast and cable providers generally to be stronger competitors to major national and global technology companies and OVDs like Apple, Samsung, Sony, Google, Netflix, Amazon, and others who also sell video products, technologies, and services to consumers—and who serve many more users and employ many more developers than Comcast and TWC combined.[69] Not only will Comcast be better situated to serve customers in competition with these companies, but it will also be better positioned to attract technology and content partners looking for a broad new platform and customer base for innovation and distribution of their products and offerings, as we discuss in Section IV.B.1.

B. Benefits to Residential Customers

84. We now consider some of the specific competitive benefits and efficiencies likely to be realized from the transaction. In this section, we discuss how increased scale, expanded geographic reach, and sharing of technologies and services from the transaction will bring benefits to residential customers across the footprint of the combined company. These benefits include increased investment and innovation and, in turn, new and improved services that increase consumer welfare.[70]

1. Economies of Scale

85. As cable operators provide more advanced technologies and services to residential customers (e.g., advanced video services, digital voice services, and faster broadband speeds), they have been required to make significant investments in R&D and in network infrastructure and customer premises equipment that free up bandwidth, increase delivery speeds, and improve the user interface. Many of these investments are fixed costs that lead to economies of scale. In

[69] The race for new ways to deliver video to consumers includes streaming media devices like AppleTV, Google's Chromecast, and the Roku player, in addition to attempts by multiple companies to create "smart TV" products. Tim Bajarin, "How Apple Will Disrupt the TV Market," *Time*, 6/17/13, available at http://techland.time.com/2013/06/17/how-apple-will-disrupt-the-tv-market/. *See* Greg Bensigner, *Amazon Unveils Video-Streaming Device Fire TV*, Wall St. J., Apr. 2, 2014..

[70] For more on how new services increase consumer welfare, see, e.g., Jerry A. Hausman (1996), "Valuation of New Goods Under Perfect and Imperfect Competition," in *The Economics of New Products*, T.F. Bresnahan and R.J. Gordon, eds. Chicago: University of Chicago Press; Jerry A. Hausman (1997), "Valuing the Effect of Regulation on New Services in Telecommunications," *Brookings Papers on Economic Activity: Microeconomics*, pp. 1–38.

this subsection, we provide examples of how the transaction will lead to economies of scale in developing and deploying technologies and services, allowing Comcast to bring innovative offerings to residential customers.

86. Comcast's investment in its X1 platform provides an example of how the increased scale enabled by the transaction can facilitate investment in advanced services. The X1 is a set-top box platform that substantially enhances the cable TV experience by providing more interactivity than a traditional program guide, including a powerful and convenient way to search for programming, voice search, a user-friendly interface for VOD, Internet-delivered apps, and access to the Internet.[71] Also, because many of the capabilities of the X1 platform reside in the cloud, the system can be more easily upgraded without needing to replace the set-top box; in fact, Comcast has already started to roll out an updated interface for X1 (with the internal name X2) without any change in hardware or the need for a lengthy software download to the set-top box, as would be necessary with almost all cable operators' legacy set-top boxes.[72]

87. Developing the X1 technology along with the updated X2 interface required a large up-front investment of {{ }}, most of which involved fixed research and development costs.[73] Even with this large investment, Comcast was limited in the features it could develop for the new platform without incurring delay or additional expense. Of the three major advancements it wanted to bring to video customers—a new application platform, new equipment, and new IP video delivery system—Comcast was only able to accomplish two at the outset.[74] Comcast was not able to make the investments necessary to develop its IP video platform with X1 fully, and only recently began deploying that IP video platform earlier this year (almost two years after it first launched the X1 platform).[75] Had Comcast been able to justify an

[71] Comcast began rolling out its advanced X1 platform in 2012, and it has been available in all Comcast systems since January 2014. Richard Lawler, "Comcast officially launches next-gen X1 DVR platform and iPhone remote app," *Engadget*, 5/21/12, available at http://www.engadget.com/2012/05/21/comcast-x1-dvr-iphone-app-launch. Comcast.com, "Xfinity TV's Next-Gen X1 Platform: The Future of Television," available at http://corporate.comcast.com/news-information/news-feed/xfinity-tvs-next-generation-x1-platform-the-future-of-tv.

[72] Jeff Baumgartner, "Comcast Ramps Up 'X2' Rollout," *Multichannel News*, 2/3/14, available at http://www.multichannel.com/distribution/comcast-ramps-%E2%80%98x2%E2%80%99-rollout/148083; Comcast Press Release, "Introducing X2: The Next Generation of Comcast's X1 Operating System," 6/11/13, available at http://corporate.comcast.com/news-information/news-feed/introducing-x2.

[73] Interview with Tony Werner (Executive Vice President and Chief Technology Officer, Comcast Cable).

[74] Interview with Sree Kotay (Senior Vice President, Chief Software Architect, Comcast Cable).

[75] Interview with Sree Kotay (Senior Vice President, Chief Software Architect, Comcast Cable). Comcast Press Release, "Comcast Launches X1 DVR with Cloud Technology and Live In-Home Streaming in Boston," 2/4/14,

even larger upfront investment in research and development, as well as a larger investment in equipment and network infrastructure, it could have either (1) brought the technology to market sooner, (2) added more advanced features and functionality to the initial release (for example, IP video), perhaps by hiring more developers to work in parallel and/or by purchasing more equipment for developers, or (3) invested in IP video technology, such as multicasting—an investment neither Comcast nor TWC has yet been able to make—to hasten the transition to full IP even faster.[76]

88. If Comcast had a larger scale, it could have justified additional upfront investment in X1 because having additional X1 customers leads to greater positive net cash flows.[77] Comcast estimated an internal rate of return of {{ }}% from increasing the penetration of X1 within its footprint.[78] This rate of return for expanding X1 to more customers within its own footprint indicates that Comcast would likely see a similarly high rate of return from expanding X1 to the incremental customers added by the transaction, which could justify an increased fixed cost investment in the platform. And of course, not just Comcast but customers would benefit from increased fixed cost investment in the platform by obtaining access to innovative technology sooner or with more advanced features.

89. Another area in which the increased scale enabled by the transaction will facilitate investment is in developing applications for third-party devices. The entire development of such applications is a fixed cost investment. Moreover, because consumer interest has shifted to watching video on a range of devices, cable operators have to develop different apps for different third-party devices, increasing development costs. In addition, newer versions of third-party devices can also result in additional development costs for updating the apps. Although Comcast and TWC have apps available for some third-party devices, the increase in scale due to the transaction will allow Comcast to provide fully-featured apps for more third-party devices more

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available at http://corporate.comcast.com/news-information/news-feed/comcast-launches-x1-dvr-with-cloud-technology-and-live-in-home-streaming-in-boston.

[76] Interview with Sree Kotay (Senior Vice President, Chief Software Architect, Comcast Cable).

[77] Specifically, when making its decisions about deploying X1 based on its current scale, Comcast took into account that additional customers lead to additional revenues by reducing churn, increasing VOD revenue, increasing DVR rental revenue, increasing set-top box rental revenue, and increasing revenue from purchases of bundled services. Along with these increased revenues, there are also additional costs, including the costs of providing the additional services as well as increased tech support and customer service costs. Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable).

[78] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable).

quickly by spreading these fixed costs across a greater number of customers, enhancing the benefits it provides to its customers.

90. At its current scale, Comcast has only been able to devote limited resources and a limited number of developers to creating apps, which means it has had to focus on developing apps for platforms that will serve what it believes is the largest segment of its customers. For example, Comcast has **[[ ]]** the development of apps for Apple products to be ready at launch but development of the same apps for Android devices has consistently lagged.[79] The new Xfinity TV app was available for Apple products when Comcast launched its live TV streaming feature and cloud DVR service, but there was a delay in the launch of the same app for older Android phones and even a longer delay in the launch of the same app for newer Gingerbread Android phones.[80]

91. Comcast's and TWC's current scales give third-party manufacturers of consumer devices, such as Microsoft and Sony, less incentive to pre-install apps and Comcast's services in their devices than they would for the combined company.[81] For example, although Comcast and TWC both currently offer TV Everywhere service to customers within their respective footprints, Comcast believes an increased scale would give the service greater national visibility and make it easier to market TV Everywhere services to device manufacturers.[82] The increased scale and visibility enabled by the transaction should make device manufacturers more willing to pre-install a TV Everywhere app because the TV Everywhere service accessible via that app will be available to more of the manufacturer's customers.[83] In addition, the transaction may allow Comcast to get more momentum behind this effort, which may sway other cable operators into participating to help create a national TV Everywhere "front door" for cable operators, benefitting consumers through broader and easier access to more of the content their cable provider offers.[84]

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[79] Interview with Sree Kotay (Senior Vice President, Chief Software Architect, Comcast Cable).
[80] Interview with Sree Kotay (Senior Vice President, Chief Software Architect, Comcast Cable).
[81] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable).
[82] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable).
[83] Although both Comcast and TWC currently offer some apps for third-party devices, including Microsoft's Xbox, these apps are usually not pre-installed.
[84] MoffettNathanson Report, "Comcast and Time Warner Cable: What Will it Cost to Seal the Deal in D.C.?" 3/5/14, p. 20.

that are not device-specific.[89] These might include parental controls, antivirus software, and customer-controlled network traffic prioritization within the home. Developing these tools requires fixed cost investments in technology that would allow these services to run at the modem level or in the cloud.[90] The additional scale afforded by the transaction would allow the combined company not only to develop and deploy these and future home management services more efficiently, but also market the services more effectively and educate consumers about them.[91]

2. Expanded Geographic Reach

95. Expanded geographic reach and agglomeration should increase Comcast's ability to serve residential customers in multiple ways. Greater geographic reach should allow Comcast to provide its customers with a more valuable and capable network of Wi-Fi access points; it should provide incentive for Comcast to increase the performance of all of its services in certain geographic areas by installing regional access networks and corresponding regional data centers; and it should allow Comcast to provide more compelling electronic sell-through and TV Everywhere services.

96. First, expanded geographic reach should increase Comcast's investment in Wi-Fi access points. Comcast's current Wi-Fi network provides high-speed data access outside customers' homes and businesses through public Wi-Fi gateways, hotspots in commercial establishments, and "Neighborhood hotspots" that Comcast customers make available for public use.[92] A Wi-Fi network becomes more valuable as its coverage becomes more ubiquitous.

97. To attempt to address the problem of lack of coverage outside of their own footprints, Comcast, TWC, and three other cable operators (Bright House Networks, Cox Communications,

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https://www.npd.com/wps/portal/npd/us/news/press-releases/internet-connected-devices-surpass-half-a-billion-in-u-s-homes-according-to-the-npd-group/.

[89] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable); Interview with Peter Stern (Executive Vice President and Chief Strategy Officer, Time Warner Cable).

[90] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable); Interview with Peter Stern (Executive Vice President and Chief Strategy Officer, Time Warner Cable).

[91] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable); Interview with Peter Stern (Executive Vice President and Chief Strategy Officer, Time Warner Cable).

[92] [[ ]]. Comcast currently offers 867,000 Wi-Fi access points in its footprint.

and Cablevision) created a partnership called "Cable WiFi." This partnership allows the customers of any of the member operators to access the other operators' Wi-Fi hotspots.[93]

98. However, the "Cable WiFi" partnership does not require all cable operators to invest extensively in a Wi-Fi network. For example, TWC has not invested in Wi-Fi for its own customers as extensively as Comcast. In addition, allowing for access by any customer to any cable operator's Wi-Fi hotspot through the Cable WiFi partnership has required layering an additional set of technologies on top of each cable operator's existing Wi-Fi network, and therefore it is less efficient than running the Wi-Fi network on a common technology within the combined company's footprint.[94]

99. The increased geographic reach from the transaction will give Comcast a greater incentive to invest in its Wi-Fi network because it will be able to internalize the benefits for travelling customers that arise from creating a more ubiquitous network. For example, TWC's Wi-Fi network is a benefit to its own customers and to Comcast's travelling customers. However, TWC only considers the benefits to its own customers (and not those of its Cable WiFi partners) when deciding where to add Wi-Fi hotspots. After the transaction, Comcast will not only take account of the TWC customer benefits, but also the benefits to customers travelling from the original Comcast service areas. Comcast will thus have a greater incentive to deploy Wi-Fi hotspots in TWC service areas. These incentives are reciprocal, so the increased build-out incentive will cover the entire footprint of the combined firm. Furthermore, the increased density and geographic reach of Wi-Fi could make it easier for Comcast to introduce a Wi-Fi-first wireless service that could potentially compete with current mobile wireless providers.[95]

100. Comcast's investment in CRANs provides another example of the benefits of geographic reach and agglomeration. CRANs are regional networks that connect Cable Modem Termination Systems ("CMTSes"), local routers, and regional routers by fiber to each other and to the

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[93] This gives Comcast customers access to over 145,000 Wi-Fi hotspots outside the current Comcast footprint. [[ ]].

[94] Interview with Mike Hayashi (Executive Vice President of Architecture, Development and Engineering, Time Warner Cable).

[95] Comcast may be able to offer service that combines Wi-Fi access with wireless access through MVNO agreements with commercial mobile wireless operators.

Internet backbone.[96] CRANs vary in size depending on the markets they serve, but generally connect geographically-proximate markets together in order to achieve geographic synergies. Comcast supports each CRAN with at least one regional data center.

101. In certain geographic areas such as New England and the Carolinas, the transaction will add TWC systems to nearby Comcast systems.[97] As Comcast adds TWC systems in regions near to its own systems, it may find it efficient to build out new CRANs and regional data centers to support those CRANs. Building out CRANs increases the efficiencies of the network by allowing investments to be scaled over more customers; delivering more scalable capacity for broadband and IP cable services, as well as business services like metro Ethernet and cell tower backhaul; reducing latency in delivering services to customers; making the network more reliable and resilient (building in redundancy); and potentially offering new options for regional interconnections (by building fiber to third-party interconnection facilities).[98] Comcast's regional data centers enable Comcast to offer new IP cable services, to better support the X1 platform, and to potentially offer another regional option for interconnection with Comcast's network.

102. Finally, the increased geographic reach from the transaction will allow Comcast to enhance the appeal and value to consumers of Comcast's new "Xfinity TV Store," Comcast's electronic sell-through ("EST") service that offers movies and TV shows for consumers to purchase electronically.[99] Unlike the traditional VOD model, in which the consumer pays to watch the content once, EST gives the consumer permanent access to the content.[100] Apple and Amazon are the largest providers of EST. Comcast's limited footprint inherently reduces the

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[96] [[ ]]. The CRAN includes all pieces of the network from the Regional Core network level and down.

[97] For example, in the Carolinas, Comcast serves customers primarily in South Carolina, while TWC serves customers in both North and South Carolina. In New England, Comcast serves customers primarily in parts of Connecticut, Massachusetts, and Vermont, while TWC serves customers primarily in New Hampshire and Maine.

[98] To the extent building out CRANs to regional data centers offer additional points of interconnection into Comcast's network, customers may see lower latency in their connections, which can improve some latency-sensitive services, for example, in gaming applications. Edge providers may also benefit from being near a regional interconnection point, because it can lead to space and power reductions as compared to other options, which can provide cost reductions of [[ ]]%. Interview with Kevin McElearney (Senior Vice President, Network Engineering, Comcast).

[99] Comcast customers that purchase EST through Xfinity TV Store can then watch their purchases through their cable service on TVs and online at XfinityTV.com, or download their purchases to the device of their choice. See http://www.xfinitypurchases.com/.

[100] Although the consumer may own the content forever, it may become inaccessible due to changing technology or loss of support for certain platforms.

value of its EST product to consumers. Specifically, when a consumer purchases a movie or TV show from Comcast's EST store and moves out of the Comcast footprint and therefore terminates service with Comcast, that consumer will no longer be able to watch his/her EST purchases through his/her cable service and will only be able to access it online. The transaction, through the expansion of Comcast's and TWC's footprint, will allow the combined company's customers to move anywhere in the larger footprint and continue to be able to access their purchases on their TVs directly through their cable service as well. For example, currently if a Comcast customer moves from New Jersey to a location in New York City (or anywhere else) served by TWC, that customer cannot access Xfinity TV Store purchases on their cable TV service. However, after the transaction, that customer would be able to port purchases to the new location and access them easily on a television.

3. Sharing of Technologies and Services

103. Combining Comcast's and TWC's portfolios of technologies and services should improve quality and availability of services to residential customers. The transaction will extend the benefits of Comcast's all-digital network to TWC systems; it will extend Comcast's industry-leading VOD service to TWC systems; it will combine the two companies' specialized knowledge in IP cable and set-top box user interfaces; and it will increase the self-service and self-installation options for TWC customers.

104. Comcast plans to convert TWC systems to all-digital more rapidly than TWC plans, which will benefit customers served by those systems through earlier and increased availability of advanced digital services and faster broadband speeds. Transitioning a network to all digital frees up bandwidth and allows a cable operator to increase the number of video channels it offers consumers as well as increase the bandwidth available for IP services (both cable and Internet).[101] Transitioning to all-digital also results in increased video quality because it avoids conversions to analog signals, which can lead to reduced signal quality.[102]

[101] For example, a single 6 MHz QAM channel that was used to deliver a single analog TV channel can be converted to digital and then deliver 10–12 standard definition TV channels or 2–3 high definition TV channels. FCC 15th Video Competition Report, fn. 265. That same 6 MHz QAM channel can also deliver approximately 38 Mbps worth of IP traffic, and, utilizing DOCSIS 3.0 technology (described below), can be bonded with other 6 MHz QAM channels to create more capacity and increase speeds for IP traffic.

[102] Interview with John Schanz (Executive Vice President and Chief Network Officer, Comcast Cable).

105. Comcast's relatively large scale among cable operators gave it an incentive to be at the forefront of the all-digital transition.[103] TWC took a different approach to freeing up bandwidth by adopting "switched-digital video" (SDV), but it is now beginning to make the transition to an all-digital network to be able to deploy more advanced services. Currently only 17% of TWC's systems are all-digital and TWC plans to be all-digital in 75% of its footprint by the end of 2016.[104] Comcast has stated that the transition of TWC systems to all-digital will be an initial focus immediately after the transaction.[105] With the knowledge and experience Comcast brings from its own transition to all-digital, as well as the additional financial resources, it is likely that 100% of the acquired TWC systems will be transitioned to all-digital faster than they would be absent the transaction, which means customers will have access to more advanced services, including faster Internet speeds, sooner.

106. The transaction should also lead to more VOD content for customers in current TWC territory. As part of its array of video services, Comcast offers a large and growing VOD library, which includes almost 50,000 programming choices with 15,000 choices in high definition in select markets.[106] Comcast is widely acknowledged as leading the MVPD industry in offering VOD content and expects to bring its commitment to VOD to the TWC systems.[107] Customers in current TWC territories should benefit from getting access to this VOD content after the transaction, as soon as Comcast's contracts permit and the acquired systems have been integrated into Comcast's VOD content delivery network. Bringing TWC's VOD services up to Comcast's standards will require certain fixed cost investments (e.g., system upgrades in the TWC network), and the increased scale from the transaction will accelerate such investments.

107. The transaction should benefit customers of the combined company by also bringing Comcast's X1 platform and IP cable technologies to TWC's systems and bringing TWC's

[103] SNL Kagan, "The top 20 reasons why it makes sense today for cable MSOs to consolidate," 12/16/13: "Cable MSOs have achieved operating efficiencies via technological progress that make larger scale more efficient. … Larger MSOs can better leverage the opportunities presented by this kind of environment. … In addition, cable MSOs can now harvest investments in their platforms, for example going all-digital, a transition that was led by Comcast; Time Warner Cable is going much slower in this initiative, with only a few markets, including Manhattan, N.Y., all-digital currently." FCC 15th Video Competition Report, ¶ 87.
[104] SNL Kagan, "Charter, Time Warner Cable lag in all-digital push to convert CapEx into capacity," 1/17/14; TWC Operational and Financial Plan, 1/30/14, p. 11.
[105] Michael Farrell, "Smit: TWC Will Go All-Digital," *Multichannel News*, 3/10/14.
[106] MoffettNathanson Report, "Comcast Q4 2013 Earnings: Boardwalk Empire," 1/28/14, p. 2: "Their VOD service is the video industry's best library."
[107] MoffettResearch Report, "Cable and Satellite: The Next Ten Years," 6/4/13, p. 34.

advances in IP cable to Comcast's systems. After the transaction, Comcast plans to roll out X1 to the acquired TWC systems rapidly, giving customers in TWC's current territory access to a technology that TWC had been unable to deploy on its own or obtain through licensing.

108. In addition, Comcast and TWC have taken different approaches in developing IP cable technologies and services, and the combined company will benefit from the sharing of best practices. Delivering cable services via IP, particularly with IP multicasting, offers multiple benefits to consumers relative to traditional QAM-based cable. In particular, IP cable offers better service at lower cost, while using less bandwidth and less energy, and enables customers to watch their cable services on a wide variety of IP-enabled devices such as computers, smartphones, and tablets.[108]

109. Comcast's IP cable offerings include a live in-home TV streaming feature that allows customers to watch essentially their entire linear lineup, including all PEG and must-carry channels, on their computers and on smartphones and tablets.[109] TWC's IP service replicates the traditional linear lineup, but only includes local broadcast channels in some areas and PEG channels in New York and Kansas City.[110] This transaction will allow Comcast's and TWC's customers to benefit from the best aspects of each company's approach to IP cable.

110. In addition, customers in current TWC territory will benefit from getting access to Comcast's innovative self-installation and self-service options. As part of Comcast's efforts to provide efficient customer service and following its conversion to digital, Comcast introduced self-service products, including self-install kits and online self-service.[111] Self-install kits allow

[108] Comcast's next-generation set-top box, with the internal name Xi3, will be an all-IP set-top box. That is, all content to the Xi3 will be delivered using IP, removing the need for a QAM tuner and enabling the delivery of the X1 platform experience over a customer's in-home Wi-Fi network, without needing to run coaxial cable to the set-top box. Mari Silbey, "Comcast plans the X3, its first all-IP HD set-top," *Fierce Cable*, 4/5/12, available at http://www.fiercecable.com/story/comcast-plans-x3-its-first-all-ip-hd-set-top/2012-04-05.

[109] Comcast Press Release, "Comcast Launches X1 DVR with Cloud Technology and Live In-Home Streaming in Boston," 2/4/14, available at http://corporate.comcast.com/news-information/news-feed/comcast-launches-x1-dvr-with-cloud-technology-and-live-in-home-streaming-in-boston.

[110] SNL Kagan, "Cable's managed IP video poised for progress in 2013," 12/21/12; Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast Cable). TWC's IP cable product does not cover all traditional Title VI functions, including PEG and must-carry channels as well as accessibility features, in all areas.

[111] Todd Spangler, "Comcast Self-Install Kits Let Subs Connect Without Truck Roll," *Multichannel News*, 5/9/11, available at http://www.multichannel.com/marketing/comcast-self-install-kits-let-subs-connect-without-truck-roll/138092; John Williamson, "Improving Online Self Service," *Comcast Voices*, 5/9/12, available at http://corporate.comcast.com/comcast-voices/improving-online-self-service; Gene Marks, "How Comcast Succeeds by Providing Less Customer Service," *Forbes*, 8/5/13, available at

customers to hook up video, broadband, or voice service without an on-site cable technician. Self-install kits are cheaper for consumers than a traditional technician installation: $9.95 shipping and handling compared to a $50–60 technician installation fee.[112] By investing millions of dollars in developing and designing the self-install kits, Comcast was able to reduce the marginal cost of adding new customers.[113] While TWC has been able to invest in some self-installation options for existing customers, it does not yet offer a self-install option for new customers.[114]

4. Contracting as an Alternative

111. As discussed above, a potential alternative to achieve the benefits of scale, geographic reach, and sharing of technologies and services could be through partnerships or licensing arrangements among cable companies operating in different geographic regions. Cable operators have in the past attempted to partner in providing services to residential customers, but in many cases, these partnerships were not pursued or were not successful. Three specific examples illustrate the difficulties in contracting to obtain the benefits discussed above: the costs and difficulties associated with licensing the X1 platform, the inability to create a cross-provider partnership for a common "front door" for TV Everywhere services, and the lack of success of Comcast and TWC collaborating to offer a "Download To Go" feature across their combined footprint.

112. First, Comcast's discussions with TWC about licensing the X1 platform {{

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http://www.forbes.com/sites/quickerbettertech/2013/08/05/how-comcast-succeeds-by-providing-less-customer-service/.

[112] Todd Spangler, "Comcast Self-Install Kits Let Subs Connect Without Truck Roll," *Multichannel News*, 5/9/11, available at http://www.multichannel.com/marketing/comcast-self-install-kits-let-subs-connect-without-truck-roll/138092.

[113] Interview with John Schanz (Executive Vice President and Chief Network Officer, Comcast Cable). In the second quarter of 2013 alone, Comcast reduced its number of truck rolls by nearly 1 million. Comcast Q2 2013 Earnings Call Transcript.

[114] TWC Q4 2013 Earnings Call Transcript; TWC offers self-installation in some instances for existing customers adding new service. Timewarnercable.com, Account and Billing FAQs, "What criteria do I have to meet to be able to do a self-installation?" available at http://www.timewarnercable.com/en/residential-home/support/faqs/faqs-account-and-billing/new-service/what-criteria-do-i-have-to-meet-to-be-able-to-do-a-self-installation.html.

113. TWC has been interested in developing its own advanced video platform, but with its current scale it has yet to deploy the required technology.[115] As a workaround to developing the technology itself, {{

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}}.[117] The transaction should facilitate the provision of X1 in the current TWC footprint.

114. Second, Comcast's and TWC's efforts to develop a common "front door" by which cable customers nationwide could access TV Everywhere content from their local cable operator met with frustration. This front door was conceived as a single application and user interface for customers to access their respective cable providers' TV Everywhere content on third-party consumer-owned devices, such as tablets, phones, computers, and gaming consoles.[118] This effort was unsuccessful because, among other things, conforming to a common approach given the realities of differing legacy and planned technologies, priorities, and business models became overly complex for both parties.[119] As a result, Comcast and TWC were unwilling to make the necessary investments. The transaction makes the agreement unnecessary.

115. As a third example, Comcast and TWC were not able to collaborate to offer a "Download To Go" feature across their combined footprint. Comcast offers its customers the ability to download content to mobile devices and tablets via the Xfinity TV Go app, which allows

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[115] Interview with Mike Angus (Senior Vice President and General Manager, Video, Time Warner Cable). TWC employs roughly 300 developers, compared to Comcast's 1,000. Interview with Kevin Leddy (Executive Vice President, Technology Policy and Product Management, Time Warner Cable).

[116] Interview with Mike Hayashi (Executive Vice President of Architecture, Development and Engineering, Time Warner Cable).

[117] {{

}}. Interview with Mike Angus (Senior Vice President and General Manager, Video, Time Warner Cable). We understand that Comcast has been pursuing an X1 licensing arrangement with another cable operator, and has come close to reaching initial terms for a trial, but there are still several outstanding issues that the parties will have to explore to determine whether the arrangement makes technical and economic sense for both companies.

[118] See Declaration of Michael J. Angelakis, ¶ 17.

[119] See Declaration of Michael J. Angelakis, ¶ 17.

customers to watch content on those devices when not connected to the Internet.[120] Comcast and TWC put time and effort into a technical collaboration to make this technology available to TWC customers. However, they ultimately found that the difficulties and costs associated with supporting two different technology roadmaps were prohibitive and they were not able to proceed with the partnership.[121] While Comcast offer such a feature, TWC, despite trying to work with Comcast to implement a common solution, does not. After the transaction, the companies will have a combined roadmap and aligned priorities, making the broader adoption of the Download To Go feature more likely.

C. Benefits to Business Customers

116. In recent years, Comcast and TWC began to provide communication services to businesses, a segment that has long been dominated by large incumbent telephone companies such as AT&T, Verizon, and CenturyLink. Competing ILECs are many times the size of TWC and Comcast in business services.[122] In this section, we discuss how the transaction will bring benefits to business customers across the footprint of the combined company.[123]

117. Comcast first entered the small business segment (generally less than 20 employees) in 2006; this required investment in network infrastructure, business systems, and sales and support organizations.[124] Small business customers typically require Internet service, video, and voice.[125]

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[120] See Comcast.com, "XFINITY TV Go App with Download Feature Frequently Asked Questions," available at http://customer.comcast.com/help-and-support/xfinity-apps/xtv-go-app-download-feature-faqs.

[121] Interview with Sam Schwartz (Chief Business Development Officer, Comcast).

[122] In 2013, Comcast and TWC reported business services revenues of $3.2 billion and $2.3 billion, respectively. Verizon reported $14.7 billion in sales to "medium and large" business customers, and CenturyLink reported $11.1 billion in business, wholesale, and data hosting revenues. AT&T reported $8.8 billion in worldwide business customer revenue in one quarter of 2013 – an annualized revenue stream of approximately $35 billion - and reported that worldwide revenue from "strategic business services", which include VPN, Ethernet, cloud, hosting, and other advanced IP services, were $9 billion on an annualized basis. See Comcast 2013 Form 10-K, p. 53; TWC 2013 Form 10-K, p. 32; Verizon 2013 Form 10-K, March 7, 2014, p. 19; CenturyLink 2013 Form 10-K, p. 50; and AT&T Investor Briefing No. 283, January 28, 2014, available at http://www.att.com/Investor/Earnings/4q13/ib_final_4q13.pdf.

[123] Dr. Israel's declaration also discusses the benefits of the transaction to current and potential business customers.

[124] See "Our History", Comcast Business: "2006: Comcast formed Business Services and launched Internet and voice services for small businesses with less than 20 employees. Annual revenue for 2006 was $265 million, available at http://business.comcast.com/about-us/our-history. We adopt Comcast's categorization of small, mid-sized, and large business customers. See, e.g., Comcast 2013 Form 10-K, p. 5. While others, including TWC, may use different definitions of the boundaries between market segments, these differences have no material impact on our conclusions.

[125] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

Comcast entered the mid-sized business segment (generally 20-500 employees) in 2010, after expanding its product portfolio and support capabilities.[126] Customers in this segment typically have more complex internal networking needs in addition to Internet, video, and voice service.[127] For 2013, Comcast estimated its combined revenue share across the small and mid-sized business segments in its region to be small, between 10% and 15%.[128] TWC has a similar focus on small and mid-sized businesses, and captured approximately 12% of revenue in these segments in its region in 2013.[129]

118. The entry of TWC and Comcast into the small and mid-sized business segments has been an important procompetitive force. For example, Comcast first offered Metro Ethernet services in 2011.[130] Through persistent competition, including pricing that one analyst characterized as "disruptive" and "aggressive," both TWC and Comcast have gained market share, and by the second half of 2013 were the 5th and 8th largest providers of Metro Ethernet services across the country, although still dwarfed by larger providers.[131] Some analysts expect this trend to continue in 2014 and note the positive impact on price competition.[132]

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[126] See "Comcast Voices, Q&A with Bill Stemper, President of Comcast Business Services", available at http://corporate.comcast.com/comcast-voices/qa-with-bill-stemper-president-of-comcast-business-services

[127] See, e.g., "Comcast Introduces New Metro Ethernet Services for Mid-Sized Businesses", Comcast Press Release, May 16, 2011, available at http://corporate.comcast.com/news-information/news-feed/comcast-introduces-metro-ethernet-services-to-address-bandwidth-application-and-reliability-requirements-of-mid-sized-businesses

[128] Comcast Q4 2013 Earnings Call Transcript, pp. 6, 12. See also Alan Breznick, "Comcast Makes Middle Market Gains," Light Reading, January 29, 2014. Revenue share refers to share of revenue in the addressable market, i.e., share of spending by small and mid-sized businesses within Comcast's footprint.

[129] Analysts estimate TWC's addressable market (i.e., total telecommunications services spending by small and mid-sized businesses within TWC's footprint) at "$20 billion-plus". Given 2013 revenues of $2.3 billion, TWC's share of the addressable market is at most 11.5%. See Ian Olgeirson, "Footprint, service expansion pushes higher commercial revenue forecast for US cable," February 27, 2014, p. 2: "Time Warner Cable's 2013 revenue topped $2.3 billion … that puts it just into double-digit penetration of its $20 billion-plus addressable opportunity."

[130] See "Comcast Introduces New Metro Ethernet Services for Mid-Sized Businesses", Comcast Business". Comcast press release, May 16, 2011, available at http://corporate.comcast.com/news-information/news-feed/comcast-introduces-metro-ethernet-services-to-address-bandwidth-application-and-reliability-requirements-of-mid-sized-businesses

[131] Vertical Systems Group, "2013 U.S. Carrier Ethernet LEADERBOARD", February 12, 2014, available at http://www.verticalsystems.com/vsglb/2013-u-s-carrier-ethernet-leaderboard/

[132] See, e.g., Vertical Systems Group, "2013 U.S. Carrier Ethernet LEADERBOARD", February 12, 2014, available at http://www.verticalsystems.com/vsglb/2013-u-s-carrier-ethernet-leaderboard/; Insight Research Corp., US Carriers and Ethernet Services: 2013-2018, August, 2013, p. 5; TeleGeography, Global Enterprise Networks: Enterprise Service Pricing, January 2013, p. 16: ("Median Ethernet market prices remain volatile, fluctuating considerably year to year.... With this said however, the long-term price trend is clearly down."); p. 20 ("As a growing number of carriers offer the service, [Virtual Private LAN Service] prices continue to decline."); "District 112 Will Have Tenfold Increase in Bandwidth This Year To Improve Internet Access, Chicago Tribune," August 12, 2013, available at http://articles.chicagotribune.com/2013-08-12/news/ct-tl-lk-0815-highland-park-school-technology-20130812_1_north-shore-district-district-112-bandwidth ("The district will save about 42% over what we were spending with AT&T"); "Utz upgrades connectivity for offices, distribution centers," The Hanover Evening Sun, April 4, 2013, available at http://www.eveningsun.com/news/ci_23096622/utz-upgrades-connectivity-offices-distribution-centers-including-

119. Incumbent providers have responded to competition from Comcast, TWC, and others in the small and mid-sized business segments. For example, AT&T, Verizon, and CenturyLink have increased their efforts to deploy fiber and narrow cable's lead in speed.[133] Executives at AT&T and Century Link have directly acknowledged increased competition from Comcast, TWC, and other cable providers.[134]

120. In contrast to their success in competing for small and mid-sized businesses, Comcast and TWC have had a negligible presence in providing communications services for businesses with locations both inside and outside their respective footprints ("super-regional" businesses) and for large business customers with more than about 500 employees ("enterprise" customers). Enterprise customers accounted for less than [[ ]]% of TWC's overall revenue in 2013.[135] Industry analysts confirm the status of Comcast and TWC as fringe competitors in the enterprise segment.[136] Comcast and TWC view the enterprise segment as the next frontier for growth, but recognize significant gaps in the value proposition they offer to enterprise and super-regional business customers as compared to AT&T, Verizon, and other incumbents who have historically

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hanover ("In aggregate, we realized a significant cost savings, while enjoying more bandwidth than what our T1 lines had given us,' said J. Ed. Smith, chief information director"). See, e.g., Vertical Systems Group, "2013 U.S. Carrier Ethernet LEADERBOARD", February 12, 2014, available at http://www.verticalsystems.com/vsglb/2013-u-s-carrier-ethernet-leaderboard/

[133] See, e.g., IDC, "Market Analysis Perspective: U.S. SMB Telecom and Broadband, 2013": "Broadband speeds continue to be key to market penetration – new investments by AT&T and CenturyLink seek to narrow Cable's lead in speed." See also "AT&T to Invest $14 Billion to Significantly Expand Wireless and Wireline Broadband Networks, Support Future IP Data Growth and New Services," AT&T press release, November 7, 2012, available at http://www.att.com/gen/press-room?pid=23506&cdvn=news&newsarticleid=35661. See also Fierce Telecom, "AT&T to extend wireline IP network to 57M customer locations," November 7, 2012: "Finally, AT&T plans to expand its fiber network to reach an additional 1 million business customer locations with a focus on serving the 50 percent of multi-tenant business buildings in its wireline serving area. By doing this it is laying foundation to deliver higher speed IP services such as cloud and Ethernet to an even larger customer base." available at http://www.fiercetelecom.com/story/att-extend-wireline-ip-network-57m-customer-locations/2012-11-07

[134] AT&T CEO Randall Stephenson recently stated that the completion of the firm's fiber deployment projects in 2014 had become more urgent because Comcast-TWC merger had changed the "competitive dynamic." See "AT&T's CEO Presents At Morgan Stanley Technology, Media & Telecom Conference (Transcript)", Seeking Alpha, March 5, 2014, available at http://seekingalpha.com/article/2072813-at-and-ts-ceo-presents-at-morgan-stanley-technology-media-and-telecom-conference-transcript. CenturyLink CEO Stewart Ewing stated at the same conference that "In the small business sector, it's tougher there and we are still losing customers. Qwest has lost quite a bit of the market share to combination of CLECs and cable companies. And we're going to try and turn that around over the next couple of years or so." See "CenturyLink's Management Presents at 2014 Morgan Stanley Technology, Media & Telecom Conference (Transcript)", Seeking Alpha, March 5, 2014, available at http://seekingalpha.com/article/2070213-centurylinks-management-presents-at-2014-morgan-stanley-technology-media-and-telecom-conference-transcript?page=2&p=qanda&l=last.

[135] Interview with Greg King (Senior Vice President, Business Services Product and Strategy, Time Warner Cable).

[136] For example, a recent IDC review of the competitive landscape in Ethernet services identifies seven primary competitors; TWC and Comcast are not among them, but are instead categorized as "other." "U.S. Carrier Ethernet and IP VPN Network Services, 2013," IDC, September 2013, p. 19.

dominated communications services to large businesses.[137] In particular, the cable companies' lack of geographic reach and scale has limited their ability to compete effectively for enterprise and super-regional customers.[138]

121. We now consider how the expanded geographic reach, increased scale, and sharing of technologies and services enabled by the transaction will benefit business customers of the combined company.

1. Expanded Geographic Reach

122. The combined company's expanded geographic reach should allow it to compete more effectively for super-regional businesses whose operations fall within the combined footprint of TWC and Comcast. Business customers typically prefer a single-provider solution across their locations because, all else equal, it generally offers lower costs and higher quality and reliability as compared to a solution based on the services of multiple providers.[139]

123. The Commission has long recognized that customers prefer services delivered on a single provider's network ("Type I services") over services delivered by a combination of facilities from different providers' ("Type II services"). In the SBC–AT&T transaction, the Commission distinguished between these two types of services, explicitly identified the price and quality advantages of Type I services, and concluded that Type II services are a weak substitute for Type I services:

> The record evidence suggests that many purchasers of wholesale special access services view Type I services as substantially superior to Type II services, due to differences in performance, reliability, security, and price, and that these differences are sufficiently large that Type I special access services fall into a separate relevant product market from Type II.[140]

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[137] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

[138] See, e.g., "Watching Cable's Business Share," Telecom Ramblings, March 3, 2014: "One thing holding back the cable MSOs from moving up more swiftly into the larger, multisite enterprise opportunity has been the limitations of the footprint they can reach. Combining the business Ethernet reach of Comcast and TWC would go a long way to eliminating reach as an issue."

[139] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

[140] In the Matter of SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control, Memorandum Opinion and Order, FCC 05-183, ¶ 26.

124. To date, limited geographic reach has hamstrung Comcast and TWC in competition to provide service to businesses with locations outside their respective footprints ("out-of-footprint" locations).[141] A super-regional business that chooses to work with a supplier with a limited footprint (such as Comcast or TWC) must aggregate communications services provided by multiple vendors and rely on Type II services. This approach can impose costs in several dimensions, including higher prices due to double marginalization, reduced quality, and higher customer operating costs.

125. In order to serve a business customer with out-of-footprint locations, Comcast today partners with other service providers whose network footprints include those locations. Comcast purchases services at wholesale, and packages those services along with its own to provide the customer with a solution. Comcast thus enters a contractual relationship in which it acts as a distributor of services provided by another supplier.

126. Under this arrangement, prices to the end customer are often higher (as compared to prices set by a single provider that serves both areas directly) due to double marginalization. That is, the price that Comcast provides to its customer reflects two profit margins: the margin that the other supplier (say, TWC) includes in its wholesale price to Comcast, and the margin that Comcast includes in the retail price to the customer. Specifically, when TWC sets the wholesale price to Comcast of service in a location outside Comcast's footprint (e.g., Los Angeles), it does not consider (nor does it have an incentive to consider) the impact of its price on profits from (a) Comcast's sales of out-of-footprint service in that location, or (b) Comcast's sales of other, complementary network services elsewhere *within* its footprint (e.g., San Francisco). In contrast, the combined company would directly serve both areas (e.g., San Francisco and Los Angeles), internalize profits from both areas, and have an incentive to reduce the price of service in one location if this would lead to an increase in profits from sales across

[141] See, e.g., Charlie Reed, "Comcast-Time Warner Cable Merger to Create Fourth Largest Business Services Player," Telecom Reseller News, February 13, 2014: "The merger's largest impacts on business services will be felt in the medium and large business segment. Currently, cable companies focus almost exclusively on enterprises with regional locations that fall within their on-net footprints. For multi-location connectivity, larger customers rely on companies like AT&T, Verizon, CenturyLink, Level 3 and others with large, national footprints of connected buildings (and years of expertise in connecting and serving enterprises with large retail and/or office footprints). The "new" Comcast will have a larger on-net footprint, greatly increasing its potential customer base. As the company improves its technical, operational and sales capabilities, it will become positioned to fiercely compete for revenues further and further up market."

the network as a whole. Super-regional customers in the footprint of the combined company should benefit from greater competition and lower prices.

127. Comcast documents confirm that double marginalization contributes to differences in prices for within- and out-of-footprint locations. Comcast adds a standard markup to other suppliers' wholesale prices.[142] As a result, even after applying a discount, prices to business customers for out-of-footprint locations are significantly higher than prices for within-footprint locations.[143] For example, **[[** **]]** show that the price of an out-of-footprint Ethernet connection was much higher than the price of equivalent on-network service, even after discounting.[144]

128. Note that the cost of underlying network services required for an out-of-footprint connection may also contribute to differences in prices. A simple example illustrates the issue. A connection between two on-network business locations within the footprint requires "last-mile" connections from each site to the service provider's high-speed backbone network, and bandwidth on the backbone network.[145] Connection to an out-of-footprint site also requires "last-mile" connections, but in addition requires bandwidth on both providers' networks and the use of a network interconnection facility that joins the two networks.[146] These additional services increase the cost of an out-of-footprint connection.[147]

129. The transaction will likely reduce prices for businesses whose locations span the Comcast and TWC networks by reducing or eliminating double marginalization and reducing the cost of underlying network services required for an out-of-footprint connection. The combined entity

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[142] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).
[143] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).
[144] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). **[[** **]]**.
[145] The "last mile" connection refers to the network connection from the customer premises to the service provider's central, high-speed network. "Mile" is used figuratively; the connection may be longer or shorter than a mile.
[146] Comcast refers to this as a network-to-network interconnection ("NNI"). See, e.g., "Comcast Enterprise Services Product-Specific Attachment: Ethernet Transport Services": "In addition to On-Net Access, Comcast enables Off-Net Access to Ethernet Transport Services via multiple third party providers. The Performance Tier for Off-Net Access is based upon the location of the Off-Net site, the location of the Network to Network Interface (NNI) between Comcast and the third party provider and the performance commitment from the third party provider."
[147] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

will be able to offer lower prices and will therefore be a stronger, more aggressive competitor, to the benefit of business customers.

130. Moreover, the reduction in double marginalization and the costs of underlying network services enabled by the transaction will establish what Comcast and TWC executives describe as "owner economics" and increase the combined company's incentive to invest in its network.[148] Rather than receiving a reduced margin as the distributor of out-of-footprint services, which reduces each company's incentive to invest in network infrastructure and compete to serve super-regional businesses, the combined company will have the opportunity to realize its standard profit margin over the parties' combined networks. Providing service to multiple customer locations is complementary – a larger set of existing sites already within the network footprint will increase the incentive to build out to additional sites within the network footprint that require new infrastructure.

131. The transaction should also improve the quality of business services provided by the combined entity and reduce operational costs (i.e., costs incurred when using the underlying network service) for super-regional business customers. Differences and inconsistencies in business services procured from multiple providers can reduce the overall quality of the network solution as compared to business services from a single provider. For example, super-regional business customers of Comcast and TWC face inconsistency and increased complexity today because the two companies have different product definitions, separate network operations centers, different service level agreements, and different processes for ordering, billing, and support.[149] These differences can also increase customers' operational costs. For example, neither customers nor service providers can manage and monitor network services from a single point of control, and customers must deal with multiple firms or a middleman rather than a single point of contact to resolve a network fault, coordinate installation and testing, and billing.[150] Inconsistent services and higher operational costs can place Comcast and TWC at a competitive

[148] Interviews with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable), and Peter Stern (Executive Vice President and Chief Strategy Officer, Time Warner Cable).
[149] Interview with Peter Stern (Executive Vice President and Chief Strategy Officer, Time Warner Cable).
[150] Comcast states that troubleshooting a network served by multiple providers is generally reactive, as it cannot monitor the network from end to end in real time. This leaves potential service quality issues unidentified until the customer reports an issue. Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

disadvantage relative to ILECs that offer a larger footprint and more consistent, unified services. As the combined company integrates the Comcast and TWC networks, it should compete more effectively with ILECs by offering higher quality and lower operational costs, to the benefit of super-regional business customers.

132. For all these reasons, the transaction should increase competition for enterprise and super-regional business customers, just as Comcast, TWC and other cable companies have intensified competition for smaller businesses within their respective footprints. Some of the key geographic areas that should benefit from the increased geographic reach of the combined company include:[151]

- **Northeast Corridor**: Comcast serves Boston, New Jersey, Philadelphia, Baltimore, and Washington, D.C., while TWC serves New York.
- **Midwest:** Comcast serves Pittsburgh, Detroit, and Chicago, while TWC serves Columbus and Cleveland.
- **Midwest 2:** TWC serves Milwaukee, Green Bay, Kansas City, Lexington, and Louisville, while Comcast serves Chicago and Indianapolis.
- **Texas:** Comcast serves Houston, while TWC serves Dallas/Fort Worth, Austin, and San Antonio.
- **Southeast:** Comcast serves Charleston, Atlanta, Mobile, Tallahassee, Jacksonville, and Miami, while TWC servers Greensboro, Charlotte, Columbia, and Charleston.
- **Pacific Coast:** Comcast serves San Francisco, San Jose, Sacramento, Portland, and Seattle, while TWC serves Los Angeles and San Diego.

133. Note that some of the parties' ILEC competitors already have footprints that include some of these regions. For example, Verizon's footprint covers the entire Northeast Corridor region, while AT&T's footprint includes all of the Midwest 2 and Texas regions and all of the California cities in the Pacific Coast region.[152]

[151] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).
[152] See "Broadband Provider Service Area," http://www.broadbandmap.gov/provider. See also "AT&T Fiber-Ready Building", http://www.corp.att.com/fiberreadybuilding/map.html

2. Economies of Scale

134. The transaction will create economies of scale that accelerate investment in new capabilities that should allow the combined company to compete more effectively for enterprise customers.

135. Enterprise customers require a substantially different portfolio of services than small and mid-sized businesses.[153] While standardized network services (e.g., Internet connectivity) comprise the majority of demand from small businesses, managed services and customized solutions account for a large majority of demand in the enterprise segment.[154] These include outsourced management of customer networks and communication services, hosting of cloud-based applications, and data center services. Comcast estimates that the addressable enterprise opportunity (i.e., spending by enterprise customers within its current footprint) may be as large as **[[ ]]** annually.[155]

136. Delivering enterprise-class services requires substantial investment in network infrastructure and other capabilities. Comcast must (a) make additional investments in network infrastructure for metropolitan fiber networks, long-haul networks, and global network access points ("POPs"); (b) develop service capabilities to manage Wi-Fi, routers, and network security on behalf of customers; (c) invest in data center and network operations facilities required to deliver managed services and hosted software services; and (d) improve its operational and business support systems, which in some cases may not yet meet the same standards as equivalent ILEC systems.[156] Comcast estimates that to compete more effectively with Verizon and AT&T in the enterprise segment within its current footprint would require investment of **[[ ]]** or more and 3-5 years.[157]

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[153] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). February 20, 2014.
[154] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). February 20, 2014.
[155] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). February 20, 2014.
[156] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). February 20, 2014.
[157] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). February 20, 2014.

137. The transaction creates economies of scale that increase the combined company's incentive to invest in enterprise capabilities, as explained in Section IV.A.1. Increased investment in turn will likely shorten the time required to become a more effective competitor in the enterprise segment. For example, the network infrastructure, data center, and network operations center investments noted above are mostly fixed costs. Comcast estimates that the cost of these network investments alone will exceed **[[ ]]**.[158] The larger scale of the combined entity makes these investments less expensive on a per-customer basis, increases their expected net present value, and thus gives the combined entity a greater incentive to invest, which should lead to benefits for customers.

138. Investment in network infrastructure, data centers, and other facilities to compete for enterprise customers will likely produce spillover benefits for its small and mid-sized business customers. For example, small and mid-sized business customers may share some elements of the enhanced network infrastructure that the combined entity develops to compete for enterprise customers. Small and mid-sized business customers may also benefit from improved business practices and business systems that the combined entity develops to compete for enterprise customers. Finally, because their networks share substantial infrastructure to serve residential and business customers, residential customers across both territories will likely benefit when Comcast realizes the increased incentive to invest in network infrastructure to serve business customers.[159]

3. Sharing of Technologies and Services

139. Combining the complementary products and services offered by Comcast and TWC under a single company should enhance competition in business services. TWC has had greater strength in serving mid-sized businesses, while Comcast's relative strength has been in the small

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[158] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable). February 20, 2014.

[159] Interviews with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable); John Schanz (Executive Vice President and Chief Network Officer, Comcast Cable); and Mike Hayashi (Executive Vice President of Architecture, Development and Engineering, Time Warner Cable). We understand that TWC residential customers and business customers **[[ ]]**. See also Ian Olgeirson, "Footprint, service expansion pushes higher commercial revenue forecast for US cable," February 27, 2014: "Although fiber-to-the-business is creeping into the small-business category, the cable industry is predominantly leveraging the same HFC networks that serve residential customers."

business segment.[160] For example, through its NaviSite subsidiary TWC offers enterprise-class, cloud-enabled hosting, managed applications and services that appeal to mid-sized and enterprise businesses.[161] Comcast has no equivalent offering, and believes that the time and investment required to develop such an asset is large.[162] However, Comcast offers cloud-based, third-party software that appeals to a different group of smaller businesses with limited or no internal IT staff.[163]

140. Current and potential customers should benefit from the combined entity's increased competitive strength in the small and mid-sized business segments. In addition, the combination of complementary products and services with increased geographic reach and scale will allow the combined entity to compete more effectively for super-regional and enterprise business services.

4. Contracting as an Alternative

141. The business customer benefits discussed above that arise from scale, geographic reach and shared products and services would be difficult to realize through arms-length contracting arrangements among cable companies operating in different geographic regions. Cable companies have attempted to partner for years, but previous attempts at arms-length contracting for business services have generally been unsuccessful due to conflicting incentives and technology hurdles.[164] For several years Comcast and TWC have discussed partnering to serve super-regional businesses that span their footprints, but only very recently signed their first (and

[160] See, e.g., Alan Breznick, "TWC: We'll Give Comcast a Business Boost", Light Reading, March 14, 2014: "TW Cable chairman and CEO Rob Marcus claimed that his company could help Comcast extend its reach beyond smaller companies, which now account for the vast bulk of Comcast's commercial revenues. … Marcus said the addition of TWC would enable Comcast to pursue more midsized and larger companies and generate even more revenue. …. The comments by Marcus align with what top Comcast officials have been saying. For instance, Comcast vice chairman and CFO Michael Angelakis said the proposed TWC acquisition would enable his company to beef up its commercial presence by adding such premier business markets as New York, Los Angeles, and Dallas."

[161] "About Us", http://www.navisite.com/about-navisite: "NaviSite provides a full suite of reliable and scalable managed services, including Application Services, industry-leading Enterprise Hosting, and Managed Cloud Services for enterprises looking to outsource IT infrastructure and lower their capital and operational costs. Enterprise customers depend on NaviSite for customized solutions, delivered through a global footprint of state-of-the-art data centers."

[162] Interview with Kevin O'Toole (Senior Vice President and General Manager, New Business Solutions, Comcast Cable).

[163] "Introducing Upware: A Cloud-Based Software Marketplace for Small Businesses", Comcast press release, February 20, 2013.

[164] Interview with Peter Stern (Executive Vice President and Chief Strategy Officer, Time Warner Cable).

only) joint contract.[165] Further, TWC recently evaluated the feasibility of a more extensive consortium between cable operators to pursue large, super-regional business customers, and identified a number of potential obstacles to success.[166] For example, TWC concluded that [[

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The transaction should help to overcome the obstacles that TWC identified.

D. Benefits Related to Advertising Services

142. This transaction should accelerate deployment, measurement, and uptake of advanced advertising services, which will benefit advertisers, customers, and content providers.[168] In particular, the scale and geographic reach of the combined entity will create incentives for Comcast to increase investment in the development and deployment of advanced advertising services and provide opportunities to share technologies and content rights across its expanded footprint. In turn, advertisers and content providers will be more likely to make complementary investments if they are more confident about the arrival of advanced advertising availabilities at sufficient scale. Advertisers, consumers, and content providers will derive additional value from advanced advertising services by:

- enabling content providers to better monetize on-demand programming, resulting in a greater amount and variety of programming to customers through a more robust, ad-supported VOD and TV Everywhere ecosystem;
- creating benefits for advertisers and consumers by delivering targeted, efficient, and relevant advertising; and
- providing additional options for advertisers seeking targeted spot cable advertising over a larger geographic area.

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[165] Interview with Phil Meeks (Executive Vice President and Chief Operating Officer, Business Services, Time Warner Cable).
[166] Interview with Greg King (Senior Vice President, Business Services Product and Strategy, Time Warner Cable).
[167] Interview with Greg King (Senior Vice President, Business Services Product and Strategy, Time Warner Cable).
[168] Advanced advertising services facilitate reaching target audiences more efficiently and effectively, enable better monetization of content through non-traditional viewing mechanisms, and provide feedback to advertisers and viewers. Such services include dynamic ad insertion for VOD programming, addressable advertising, and interactive advertising.

143. As discussed below, these benefits are specific to the transaction and unlikely to be realized by contractual means, such as inter-firm coordination or joint ventures.

1. Economies of Scale

a) Dynamic Ad Insertion in VOD

144. The increased scale from the transaction may help the industry overcome one of the biggest hurdles to realizing the significant potential of dynamic VOD advertising: measurement of viewing, which is the metric used by advertisers to determine how much to pay content providers.[169] While the majority of VOD viewing occurs four or more days after live program airing, the industry has used Nielsen's C3 model for measurement, which counts only viewing within the first three days.[170] Content providers are generally not paid by advertisers for viewing four or more days after airing and therefore demand different terms from distributors for older episodes or limit their availability altogether.[171] Alternate platform viewing is not generally measured either, which is an issue for TV Everywhere advertising.[172]

145. Comcast was an early pioneer in and one of the first operators to deploy dynamic ad insertion capability in VOD across its cable footprint. TWC has similar VOD insertion capabilities today, though a less robust VOD catalogue.[173] However, despite the technical capabilities, uptake by content providers and advertisers has been far short of its potential because viewer measurement tools that include VOD and alternate devices and could accurately

[169] Until recently, ads on VOD content provided by MVPDs were static. Advertisements were inserted in advance, content could not be modified once on the operator's network, and delivery of refreshed content typically required weeks. Dynamic ad insertion removes this limitation and provides advertisers with flexible real-time access to the increasingly large segment of consumers who engage in time- and screen-shifted viewing. "On Demand: Quick Ad Switch", Wall Street Journal, May 27, 2013. See also Nielsen, "An Era of Growth the Cross-Platform Report," March 2014, p. 9. See also Comcast Spotlight, "Dynamic Ad Insertion: Unlocking the Value of Video on Demand," pp. 6, 9.
[170] "Comcast Trials Aim To Unlock VOD Ad Dollars, Measure TV Binge Viewing," Multichannel News, December 2, 2013: "Cable has historically used Nielsen's C3 ratings model, which measures VOD commercial viewing within three days of a show's live airing, to give advertising credit to the most-recently offered episode in a TV series. Programmers, however, have not received C3 advertising credit for VOD views of any of the prior episodes of the series. This shortfall has generally limited the availability of TV series offered via VOD to a rolling batch of the latest four or five episodes rather than to an entire season's worth of episodes." See also "On Demand: Quick Ad Switch", Wall Street Journal, May 27, 2013.
[171] Ibid.
[172] "The Measurement Mess," Broadcasting & Cable, July 22, 2013.
[173] "Mega-Merger Could Be a Boon for Advanced Ads," Multichannel News, February 24, 2014.

value dynamic ad insertion on those platforms are not fully developed.[174] It is just recently that Nielsen has started to run trials of a new system that will count viewings of prior episodes of a TV season.[175] With Comcast's increased scale and ability to offer more VOD advertising to more customers following the transaction, Comcast may be able to work more closely with ratings firms to accelerate development of measures that include VOD and alternate devices, which in turn would provide incentives for content providers and advertisers to take advantage of dynamic ad insertion in VOD content.[176]

146. More comprehensive viewer measurement would enhance the potential of both dynamic and addressable advertising in VOD and TV Everywhere content.[177] By making more episodes available and helping new viewers of a series to catch up to real-time, enhanced measurement and increased availability also has the potential to create a virtuous cycle and drive higher live TV ratings for certain shows.[178]

147. Better measurement will yield benefits for content providers, advertisers, and customers. It would help content providers and MVPDs increase revenue from VOD and TV Everywhere programming. In turn, the potential for increased revenue could preserve and even expand the advertising ecosystem and create substantial value for consumers in the form of increased

[174] "On Demand: Quick Ad Switch", Wall Street Journal, May 27, 2013. See also CTAM, "Top 10 Tech Developments Marketers Need to Know: Dynamic Ad Insertion (DAI)": "Consider: In 2012, cable subscribers viewed 9 billion VOD assets. What's that worth in opportunity cost? …Without a Nielsen, Rentrak, or Canoe-styled rating to indicate how many people viewed the VOD program containing the ad, what we know is that it's a big number – that's difficult to model. But some braves souls are like Bill Niemeyer, Senior Analyst with The Diffusion Group, who puts the revenue potential for DAI at $5.7 billion, over time. As reference, the entire local cable ad sales business is about $4 billion, annually."

[175] "Comcast Trials Aim To Unlock VOD Ad Dollars, Measure TV Binge Viewing," Multichannel News, December 2, 2013: "Using a mix of dynamic ad insertion (DAI) technology, the disabling of the fast-forward function within the commercials, and Nielsen-sanctioned measurement, Comcast hopes to change that dynamic with a concept called ODCR, or On Demand Commercial Ratings. As designed, ODCR inserts the full C3 ad load into not just the most recent TV episode, but into every prior episode of a season, and banks everything inside Comcast's VOD platform. Comcast hopes this approach will unlock VOD advertising dollars and expand the number of shows offered on-demand so customers can catch up on TV series, believing that this combo will also translate into stronger live TV ratings."

[176] Interview with Joan H. Gillman (Executive Vice President and Chief Operating Officer, Media Services, Time Warner Cable).

[177] "What Comcast-Time Warner Cable Means for Advertising: A Better Alternative for National Advertisers, More Reach for Addressable Ads," AdvertisingAge, February 14, 2004: "For a decade Comcast has been at the forefront of video-on-demand and Time Warner Cable will expand its presence into two major markets, Los Angeles and New York, said John Collins, managing director-broadcast and iTV, Media Storm. 'On-demand will become some of the most valuable inventory in the ecosystem,' he said."

[178] "Comcast Trials Aim To Unlock VOD Ad Dollars, Measure TV Binge Viewing," Multichannel News, December 2, 2013.

content availability.[179] For example, programmers may be more willing to make valuable programming (including entire seasons of cable network programming) available to users and possibly reducing pressure on license fees.[180] Advanced advertising at the greater scale afforded by this transaction could result in consumers receiving discounted or free access to some of the same content they are purchasing elsewhere at a monthly out-of-pocket cost of $8-10/month.[181]

b) Complementary Investments by Advertisers and Content Providers

148. Realizing the full benefits of advanced advertising services requires participation by other industry stakeholders, such as advertisers, agencies, networks, and consumers.[182] Introducing a new technology can require providers of complements to learn about the new opportunities and then make investments in their businesses to take advantage of them. Oftentimes, such investments are fixed, such as the upfront costs of learning and developing new strategies. Advertisers and networks need to make complementary investments in content and targeting. For example, one of the challenges in adoption of addressable advertising is educating media buyers about its efficiency and driving them to form a more precise idea of whom they desire to target.[183] It also requires networks to coordinate with cable companies to slice up advertising

[179] "Interactive Advertising: In Search of a Business Model," MyersBizNet, June 21, 2011: "VOD can be a big business for cable. We are just on the cusp of DAI (Dynamic Ad Insertion), monetizing all of those views that are free for the customer. Programmers will have a valuable business model when this goes live, creating a floodgate of content coming on demand."

[180] "VOD Stunt Has Viewers Trying on USA's 'Suits'," Broadcasting & Cable, January 14, 2013. See also, "Comcast Ramps Up Effort To Promote Ad-Supported VOD," Deadline Hollywood, December 2, 2013: "On Demand Commercial Ratings (ODCR)…[would] enable[] Comcast to insert new ads into old shows, and for Nielsen to then count the people who view the spots in the three days after they first appear. (The jargon term for that is C3). 'This could have pretty profound implications in the market,' says Comcast SVP Matt Strauss. 'If it gets adopted it means the industry would move from selling an episode to selling a series.'"

[181] "VOD Stunt Has Viewers Trying on USA's 'Suits'," Broadcasting & Cable, January 14, 2013.

[182] "Canoe Ventures Pulls Plug on Interactive TV Commercials Business," Advertising Age: February 22, 2012. See also "Canoe Ventures' Reorg Represents Setback for Targeted TV – But How Big?" TVexchanger.com, February 23, 2012: "The premise was absolutely right: collaboration. But not everyone was in the boat….[T]hey had cable operators and networks, but they were missing advertisers, agencies and, most importantly, consumers, in the equation."

[183] "The CMO's Guide to Addressable TV Advertising", AdvertisingAge, February 19, 2014: "Determine who you really want to reach. This is harder than it sounds because marketers have spent years limited by Nielsen's age and gender demographics, said Tracey Scheppach, exec VP-innovations at Publicis Groupe's SMGX. 'You'd be surprised that many brands don't know or understand their true target." See also "Targeted Commercials' Most Valuable Customer: The TV Industry?" Advertising Age, August 8, 2013: "But the biggest challenge is educating the marketplace, with many media buyers and planners still thinking in traditional gross ratings points…If they value and appreciate data and analytics and they have a good understanding of exactly who they want to target, the beauty of this addressable product is it provides all of the reach that they want without the waste…."

availabilities.[184] Similarly, users of dynamic VOD insertion may need to develop different media for a given product depending on the target audience.

149. The ability to better target consumers and having access to a larger pool of consumers because of increased scale from this transaction may help convince advertisers and content providers to try out the new platforms and to incur the fixed costs of learning and adapting their businesses. Additionally, a higher degree of standardization in network and set-top box technology following the transaction may increase the willingness of advertisers and networks to make the necessary changes and investments.[185]

2. Expanded Geographic Reach

150. The increased geographic reach of the combined entity, coupled with the accelerated ability to deliver and measure advanced advertising services, will create additional options for advertisers to reach video audiences efficiently.

151. Advertisers who seek to advertise to a television audience today generally purchase advertising time from cable and broadcast networks and sometimes supplement those purchases with a handful of spot market advertising purchased from local broadcast stations and aggregator NCC Media.[186] The spot cable advertising available from NCC runs across a variety of MVPDs, many of which do not offer addressable advertising and other advanced capabilities. The implication is that aggregators can generally only provide "lowest-common-denominator" services to national advertisers, limiting their ability to take advantage of targeting and other advanced capabilities.[187]

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[184] The CMO's Guide to Addressable TV Advertising", AdvertisingAge, February 19, 2014: "Inventory: Adding more addressable-enabled inventory requires networks to work with operators to slice up inventory. For example, NBC Universal and Comcast are partnering to make NBC-controlled inventory addressable-enabled on Comcast VOD."

[185] "Canoe Ventures Capsizes," AdWeek, February 23, 2012: "Canoe ran into trouble with its ownership and their peers. Advertisers used to buying nationwide spots had to worry about the varying technology and standards employed by different cable operators, and the hassle kept advertisers from trying the new platform, regardless of potential benefits."

[186] NCC Media, a joint venture owned by Comcast, TWC Media, and Cox Media, represents national spot ad sales for MVPDs in all 210 U.S. markets and reaches more than 80 million households. See AdWeek, "NCC Media – Local Hits the Spot," April 22, 2013.

[187] "What Comcast-Time Warner Cable Means for Advertising: A Better Alternative for National Advertisers, More Reach for Addressable Ads," AdvertisingAge, February 14, 2004: "Acceleration of addressable advertising. One of the biggest obstacles to ad targeting at the household level has been a lack of broad reach, which makes running campaigns across multiple operators a clumsy and inefficient effort. The merger should eventually help example the

152. Comcast's greater geographic footprint and accelerated rollout of advanced advertising services resulting from this transaction will create an alternative for advertisers that want Comcast's targeted or addressable ad services in its markets and can accept the absence of full national reach.[188] It may also over time, given Comcast's scale, lead to other MVPDs adopting the same technologies so that those capabilities can be offered more broadly on a uniform basis.

3. Sharing of Technologies and Services

a) Dynamic Ad Insertion in VOD

153. In terms of sharing of advertising-related technologies and services, the transaction will yield benefits in the extension of Comcast's VOD and TV Everywhere platforms and rights to TWC's systems, as soon as Comcast's contracts permit and the acquired systems have been integrated into Comcast's network. As discussed above, Comcast is a leader in VOD platforms and content. The transaction will give the combined company the complementary digital rights to realize substantial additional value from dynamic VOD and TV Everywhere advertising for advertisers, customers, and content providers.

b) Addressable Advertising

154. Addressable advertising allows marketers to replace geographic zone targeting with advertising targeted to individual households based on demographics and other household-specific characteristics.[189] The sharing of technologies from this transaction will accelerate the rollout of addressable advertising in TWC's footprint and benefit advertisers with one-stop shopping for a consistent addressable product in a larger number of key markets. It will also benefit consumers by delivering more relevant ad content.

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addressable universe to the kind of scale that advertisers desire and speed up advances in areas such as dynamic ad insertion."

[188] For example, as described above, addressable advertising is more efficient than and therefore creates more inventory than standard geo-targeting.

[189] "The CMO's Guide to Addressable TV Advertising," AdvertisingAge, February 19, 2014.

155. Comcast is currently running trials of linear addressable advertising and plans to roll it out more widely by the end of 2014.[190] However, TWC has not deployed addressable advertising on its traditional linear cable platform, {{

}}.[191]

156. Comcast's plans to share and deploy its addressable technology in TWC's footprint, including the important markets of New York and Los Angeles, will benefit advertisers with faster access to one-stop shopping for a consistent addressable product.[192] The availability of a larger pool of customers will also increase the attractiveness of the product to advertisers.[193] Addressable advertising will offer important benefits to existing advertisers who can improve the efficiency and cost-effectiveness of their marketing efforts, and to potential cable advertisers whose products appeal to narrow, niche markets rather than a mass market. It will also create additional inventory by allowing MVPDs to slice ad spots more thinly and sell the same window to different cable advertisers targeting different segments of the audience or to the same advertiser running multiple different ads, potentially for different products.[194] As such, targeting will also benefit consumers by delivering more relevant ad content.

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[190] Ibid. See also "Targeted Commercials' Most Valuable Customer: The TV Industry?" Advertising Age, August 8, 2013. Linear addressable advertising refers to linear content, i.e., scheduled content offered at a particular time on a particular channel. Linear content is distinct from recorded (DVR) and VOD content.

[191] Interview with Joan H. Gillman (Executive Vice President and Chief Operating Officer, Media Services, Time Warner Cable). See also "The CMO's Guide to Addressable TV Advertising", AdvertisingAge, February 19, 2014: "Cable operators need to deploy technology on a market-by market basis to enable addressability. Satellite operators and Cablevision can change the technology at one master facility."

[192] "What a Comcast-TWC Merger Would Mean for the Rest of the TV Business," Broadcasting and Cable, February 17, 2014: "…the merger hastens tech innovation on the advertising front, as it 'eventually harmonizes 30 million households on a common ad tech platform.'" See also "The CMO's Guide to Addressable TV Advertising", AdvertisingAge, February 19, 2014: "Comcast's planned acquisition of Time Warner Cable is poised to accelerate the expansion of addressable ads as the two companies' systems are eventually integrated." See also "Comcast and Time Warner Cable: What a Marriage Means for Advertisers," AdExchanger: "[The transaction] could be a boon for the advertising and marketing industry, combining Comcast's superior digital platforms with Time Warner Cable's audience reach across major metropolitan markets.'"

[193] "Comcast and Time Warner Cable: What a Marriage Means for Advertisers," AdExchanger: "Cable distribution companies have been trying for years to make ads more targetable through piecemeal investments but they've been held back by scale and fragmentation issues…With more scale, the combined Comcast and Time Warner Cable ad sales efforts will have more incentive and resources to invest in both data-driven and addressable systems and products.'"

[194] "Comcast Gives Addressable Advertising Momentum," ZoneWire, March 15, 2013.

c) Interactive Advertising

157. Sharing of technologies will also play a role in benefits related to interactive advertising services.[195] Comcast has continued to invest in developing its advanced advertising platform, although some of these capabilities are still in a relatively early stage of development.[196] TWC, on the other hand, has not prioritized interactivity, primarily because its scale is not sufficient to justify the required investment.[197] Therefore, access to Comcast's interactive advertising platforms will help overcome that barrier for the TWC systems. Bringing Comcast's current and future interactive advertising technology into TWC's footprint will be an opportunity for both advertisers and consumers.[198] Advanced advertising is an example of an area in which Comcast is well ahead of TWC today in terms of advertising sales innovation and TWC will benefit from sharing Comcast's technology.

4. Contracting as an Alternative

158. The benefits described above that inure to advertisers, consumers, and content providers as a result of accelerated deployment of advanced advertising and improved measurement and scale in the selling of advanced advertising are specific to the proposed transaction. Past industry efforts in the development of advanced advertising services show the limitations of what can be accomplished through joint ventures and contracting. This transaction will likely overcome these limitations by standardizing digital capabilities and equipment and aligning the incentives of Comcast and TWC.

159. Canoe Ventures was a joint venture launched by the six largest cable operators in 2008 to provide advanced services (primarily interactive advertising, but also addressability, and VOD

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[195] Addressable and VOD ad content can also include interactive elements that provide advertisers with feedback, such as which ad a viewer selected to watch or whether a viewer clicked for more information, or allow viewers to retrieve more information about or a coupon for a product. Generally, the value proposition to advertisers increases the more fine-tuned the targeting and the more detailed and immediate the feedback. However, providing these capabilities also entails corresponding increases in complexity and cost, and the development of interactive advertising has lagged behind dynamic VOD advertising and addressable advertising.

[196] Interview with Hank Oster (Senior Vice President, General Manager, Comcast Spotlight).

[197] Interview with Joan H. Gillman (Executive Vice President and Chief Operating Officer, Media Services, Time Warner Cable).

[198] Ibid. See also "Canoe Ventures' Reorg Represents Setback for Targeted TV – But How Big?" TVexchanger.com, February 23, 2012: "As an ad agency, we're looking for seamlessness and scale….[W]e know the individual MSOs and satellite companies are still coming out with their own offerings. But the problem is whether separately, those companies can provide the reach and insight that make it worthwhile for advertisers to support those systems."

insertion).[199] Canoe encountered numerous challenges due in part to varying degrees of digital capabilities and other technology differences across cable companies.[200] It managed to launch an Interactive TV (ITV) product in 2010 that let viewers request more information, coupons, or product samples.[201] However, acceptance was limited and Canoe "pulled the plug" on its interactive operations in 2012 and redirected its efforts.[202]

160. In many ways, Canoe serves as a cautionary tale about the difficulty of using cable industry joint ventures as a mechanism for innovation.[203] The consortium approach added a lot of complexity and difficulty, including disagreements about desired deployment times, management issues (size of staff and tension over who was owner and seller of the platform), and conflicting incentives between owners of the venture.[204] Technical coordination problems between partners and platforms also played a role.[205]

161. This transaction will help overcome many of these difficulties with common capabilities, technologies, and incentives, obviating the need for coordination in advanced advertising services between separate companies.[206]

V. No Competitive Concerns in the Distribution, Acquisition, or Sale of Video Programming

162. While the transaction will bring substantial competitive benefits and efficiencies to consumers and the combined company, it will not cause any anticompetitive harm in the distribution, acquisition or sale of video programming.[207]

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[199] "Cable Firms Join Forces to Attract Focused Ads", New York Times, March 10, 2008.
[200] "Canoe Ventures Pulls Plug on Interactive TV Commercials Business," Advertising Age: February 22, 2012. See also "Canoe Ventures Rolled by Cable Owners: Implications for Interactive TV, Addressable Ads, VOD, and OTT," TDG Opinions, February 24, 2012.
[201] "Exclusive: Canoe to Shutter Interactive TV Ad Business, Lay Off 120," Multichannel News, February 22, 2012.
[202] Ibid. See also "Canoe Ventures Pulls Plug on Interactive TV Commercials Business," Advertising Age: February 22, 2012.
[203] "Canoe Ventures' Reorg Represents Setback for Targeted TV – But How Big?" TVexchanger.com, February 23, 2012: "Unfortunately Canoe like many ventures that are funded and managed by consortium of different competitive interests and priorities is always doomed to failure."
[204] "Canoe Ventures Capsizes," AdWeek, February 23, 2012: "Advertisers used to buying nationwide spots had to worry about the varying technology and standards employed by different cable operators …"
[205] Interview with Hank Oster (Senior Vice President, General Manager, Comcast Spotlight).
[206] Ibid.
[207] Dr. Mark Israel's declaration discusses competitive issues in the broadband services.

163. With minimal exceptions, Comcast and TWC services do not overlap in their franchise areas and do not compete for any MVPD customers, so the transaction will not affect the competitive choices available to MVPD customers. The two companies also do not overlap in their service areas for phone services or bundled services involving phone, video and broadband, so the competitive choices available to customers for those services will not change either. There will be no change in the number of competitors or any change in the HHI in any relevant market as a result of the transaction. Therefore, the transaction will not raise any competitive concerns about the distribution of multichannel video, voice, broadband or bundled services to consumers. We discuss multichannel video distribution issues in Section V.A.

164. Various parties have raised competitive concerns about the transaction's potential impact in the upstream markets where Comcast and TWC buy video programming from content providers and where Comcast and TWC sell video programming to other MVPDs and OVDs.[208] Specifically, some parties have expressed a concern that because the transaction will increase the percentage of MVPD customers served by Comcast nationally and in certain regions (like the largest DMAs), it could give Comcast market power as a *buyer* of video programming and drive its payments for content below competitive levels (as a horizontal concern regardless of its vertical integration with MVPD service).

165. In addition, some parties have suggested a potential vertical "program carriage" concern related to program buying, hypothesizing that because Comcast is vertically integrated, the transaction could give Comcast an incentive to help its own programming by discriminating against unaffiliated programming in program carriage (including whether to carry the programming, programming fees, and other carriage terms). We explore these two program buying competition issues in Section V.B.

166. Some parties have also raised a potential concern that because the transaction increases the video programming assets controlled by Comcast, it could give Comcast market power as a *seller* of programming to charge higher prices to other MVPDs and OVDs, including other cable

[208] See, e.g., David Ingram, "Not a Typo, Monopsony in Spotlight in US Cable Deal," Reuters, February 21, 2014, available at http://www.reuters.com/article/2014/02/21/us-usa-comcast-monopsony-analysis-idUSBREA1K1VI20140221; "Six Myths About the Comcast-Time Warner Cable Merger," Free Press, February 25, 2014, available at http://www.freepress.net/blog/2014/02/25/six-myths-about-comcast-time-warner-cable-merger

companies with non-overlapping territories (as a horizontal concern, regardless of its vertical integration with MVPD service).

167. Finally, some parties have raised a potential vertical "program access" concern that the transaction could give Comcast a greater incentive or ability to permanently or temporarily foreclose (or threaten to foreclose) access to the combined company's programming to rival MVPDs. We explore these two possible program selling issues competition concerns in Section V.C.

168. These sections show that this transaction will not lead to any competitive harm in program distribution, program buying, or program selling. Moreover, under current market conditions, Comcast has been able to successfully reach programming buying and selling agreements with various content providers and MVPDs/OVDs in the past few years. Such market dynamics will continue after the transaction as Comcast will not gain increased market power in the acquisition or sale of programming. Were there any remaining concerns, the Commission's program carriage and program access rules are in place to mitigate any anticompetitive possibilities, and the conditions from the NBCUniversal transaction are an additional backstop.

A. No Competitive Concerns in the Distribution of Video Programming

169. As discussed in Section III.A, Comcast's national share of MVPD customers will increase from approximately 22% to under 30% after the transaction (assuming divestitures of 3 million customers). This increased national share will not reduce competition in the distribution of video programming.

170. The franchise areas of Comcast's and TWC's cable systems do not overlap other than in minimal ways. As a result, the two companies' cable systems are not substitutes and do not compete with each other for MVPD customers. Thus, the transaction will not change the number of MVPDs competing to serve any individual customer. The markets for multichannel video services are inherently local, since a customer can choose only among those providers that are authorized to and do provide service in his or her local market. Since there will be no reduction in competition or increase in concentration in any local markets, the transaction will not change the HHI in any relevant antitrust market. The absence of change in competition contrasts with a

typical horizontal merger, in which the antitrust analysis focuses on the reduction of choices available to consumers.

171. Comcast will continue to face the same multichannel competition in each and every geographic area after the transaction as Comcast and TWC face now. Specifically, Comcast will continue to compete with the two DBS MVPDs in its entire footprint and with telco MVPDs in much of its footprint.[209] In some geographic areas, the combined company will also continue to face competition from over-builders such as RCN, WOW!, and new facilities-based entrants such as Google Fiber.[210] In addition, Netflix, Apple, Google, Amazon, Hulu, Sony, and other smaller online companies are entering or have entered online video provision and are positioning themselves as competitors to MVPDs for at least some services (like VOD) or are even poised to offer full linear replacement services.[211] Furthermore, Dish and Disney reached a long-term agreement in March 2014 allowing Dish to deliver programming of Disney's networks such as ESPN and ABC to consumers live or on-demand over the Internet via smartphones, tablets and computers without a traditional pay-tv subscription, which is likely to lead to more competition for MVPD services.[212]

172. Consumers have been switching MVPD providers in response to competition. Since 2009, Comcast and TWC lost a net 1.9 million customers and 1.5 million customers, respectively, implying a respective net loss of 8.1% and 11.7% of customers during the four-year period.[213] Since 2009, cable MVPDs as a group (including Comcast and TWC) have lost a net 7.3 million customers in total, while the two DBS providers have added a net 1.7 million

[209] SNL Kagan, "MVPD Subscribers in Q3 2013."
[210] RCN or WOW! currently competes with Comcast or TWC in 22 DMAs. Google Fiber currently operates in 3 cities including Kansas City, Austin and Provo, and has plans to expand to another 34 cities in 9 metropolitan areas in the near future.
[211] Amol Sharma and Shalini Ramachandran, "Sony Grabs Lead in Race for Internet Pay TV," Wall Street Journal, August 15, 2013, available at http://online.wsj.com/news/articles/SB10001424127887324823804579014901418093422.
[212] Brooks Barnes, "Deal Between Dish and Disney Seen as a Win for Both," New York Times, March 4, 2014, available at http://www.nytimes.com/2014/03/05/business/media/deal-between-dish-and-disney-seen-as-a-win-for-both.html.
[213] SNL Kagan, "National MVPD subscribers 2005-2013." During this period, TWC acquired Insight Communication in 2012, which had approximately 700,000 video subscribers in Kentucky, Indiana and Ohio. (2012 TWC 10-K, pp, 1, 41) But for the acquisition, TWC's subscriber losses would be higher.

customers and the telco video providers added a net 6.2 million customers.[214] Since these figures are "net" gains and losses, the actual turnover of customers is likely much higher.

173. Comcast and TWC are also not *potential* competitors in video distribution as they have not seen it profitable to build new cable systems outside their franchise areas.[215] Therefore, the transaction will not reduce potential competition among MVPD providers. Nor has either company found it in its interest to make the major investment necessary to successfully enter as an OVD, especially given the lead of existing OVDs.[216]

B. No Competitive Concerns in the Acquisition of Video Programming

174. Comcast's increased number of customers and expanded geographic footprint nationally or regionally, including in top DMAs, will not give Comcast market power in program acquisition. As explained further below, Comcast will continue to have the same incentive and need to acquire and distribute programming of interest to its MVPD customers to compete with other distributors, and content providers will continue to be able to sell their programming to a large open field besides Comcast. As a result, Comcast will not gain market power as a buyer of video programming and drive its payments for content below competitive levels.

175. Moreover, Comcast will only acquire a limited amount of TWC programming and will continue to face vigorous competition from other distributors after the transaction. If it were to deny carriage to non-affiliated programming, it would risk losing customers to other distributors with little benefit to its affiliated programming. Thus, the transaction does not raise any vertical program carriage concerns.

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[214] SNL Kagan, "National MVPD subscribers 2005-2013."

[215] See James Stewart, "A Vision Beyond Cable for Comcast After Merger," New York Times, March 28, 2014, available at http://www.nytimes.com/2014/03/29/business/a-vision-for-comcast-in-a-post-merger-world.html?ref=comcastcorporation&_r=0.

[216] Interview with Marcien Jenckes (Executive Vice President, Consumer Services, Comcast). If Comcast and TWC were to provide OTT services outside their franchise areas, they would face strong competition from large players like Apple and Sony and others providing OTT services. Therefore, the transaction would not reduce competition in OTT services in any significant way.

1. No Increase in Market Power in Program Acquisition

a) The Transaction Will Not Change the Demand for or Supply of Programming

176. Some critics of this transaction have argued that Comcast's larger size and footprint post-transaction would allow it to gain market power against content providers in programming negotiations (horizontal "monopsony" concerns).[217] We start by considering these claims from the perspective of basic economics, which suggests that such an outcome is unlikely because Comcast's larger size and footprint will not affect the demand for and supply of programming.

177. MVPDs' demand for programming results from their need to appeal to customers and compete with other distributors. Because Comcast and TWC do not compete for customers, they do not compete in purchasing programming. Therefore, combining Comcast and TWC will not affect the demand for programming. As discussed in Section V.A, this transaction does not change the competitive landscape for video distribution. In the face of vigorous competition, Comcast, even with modestly more customers and a somewhat larger footprint, will continue to have the same incentive and need to acquire and carry programming with the quality and diversity that its customers value to keep those customers and attract new customers. Otherwise, Comcast will risk losing customers to competing distributors who carry the programming that appeals to consumers.

178. The transaction will also not affect the supply of programming. A content provider's programming is non-rivalrous as the provider's sale to Comcast does not preclude or increase the cost of its selling the same programming to TWC.[218] Therefore, combining Comcast and TWC will not give the combined company market power through changing content providers' cost of supplying programming.

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[217] See, e.g., David Ingram, "Not a Typo, Monopsony in Spotlight in US Cable Deal," Reuters, February 21, 2014, http://www.reuters.com/article/2014/02/21/us-usa-comcast-monopsony-analysis-idUSBREA1K1VI20140221; "Six Myths About the Comcast-Time Warner Cable Merger," Free Press, February 25, 2014, available at http://www.freepress.net/blog/2014/02/25/six-myths-about-comcast-time-warner-cable-merger; The Editorial Board, "If a Cable Giant Becomes Bigger," New York Times, February 13, 201, available at http://www.nytimes.com/2014/02/14/opinion/if-a-cable-giant-becomes-bigger.html.

[218] See D. Waterman, Local Monopsony and Free Riders, 8 Information Economics and Policy 8: 337-55 (1996). A content provider typically sells its programming to all willing distributors. Because a content provider's cost is primarily fixed cost, its incremental cost of selling one additional copy of programming is essentially zero.

179. Because the transaction will not change the demand and supply conditions underlying program buying, it would not be profitable for Comcast to limit its output (i.e., the number of customers to whom it distributes certain programming) to depress what it pays a content provider – doing so would cost Comcast valuable programming and ultimately profits. In other words, the transaction will not give Comcast the incentive or ability to exercise market power (or "monopsony power") in purchasing video programming. The same economic factors also imply that the transaction will not reduce content providers' incentives to produce high-quality programming.

180. Some public commentary on the proposed transaction has focused on Comcast's increased customer share in top DMAs and raised concerns that Comcast's increased presence in these top DMAs will give it increased market power in programming acquisition.[219] Those concerns are without economic basis.

181. DMAs are Nielsen constructs for rating measurement purposes and do not constitute relevant antitrust markets. Comcast does not compete with TWC for customers or for programming even when both firms operate cable systems in the same DMA. Thus, Comcast and TWC do not compete with each other in purchasing programming which means content providers currently do not realize any benefits from playing TWC and Comcast off against each other in carriage negotiations that involve a single or multiple DMAs. After the transaction, the combined firm's demand for a content provider's programming in top DMAs (or any DMAs) will not change.

182. Moreover, the value of a Comcast or TWC customer to a content provider in a DMA (in terms of advertising and affiliate fee revenue, and any brand effects) will not change after the transaction. Thus, a content provider's return from entering into an agreement with the combined company for carriage in these top DMAs should not be different from the provider's return from separate carriage agreements with TWC and Comcast.

183. Because the transaction will not change the demand for or the return to a content provider's programming in these top DMAs, the transaction will not reduce content providers'

[219] The Editorial Board, "If a Cable Giant Becomes Bigger," New York Times, February 13, 2014, available at http://www.nytimes.com/2014/02/14/opinion/if-a-cable-giant-becomes-bigger.html.

leverage against Comcast even though Comcast will provide service in more DMAs.[220] Today, given a content provider's return from having its programming distributed in Comcast's and TWC's respective footprint, Comcast and TWC will demand the best deal from the provider in their respective negotiations. Because Comcast and TWC do not compete with each other, what Comcast would agree to does not depend on whether the content provider already has a deal with TWC and vice versa. In addition, because a content provider can sell its programing to other distributors that have a large presence in these top DMAs, including DBS and telco MVPDs as well as other distributors like OVDs, the provider does not have to rely upon Comcast and TWC to distribute its programming in these areas. Thus, relative to its current negotiation position, Comcast does not gain leverage post-transaction.

184. It may be possible that certain DMAs, such as New York, are more valuable to content providers and/or advertisers than other areas. If that is true, an MVPD with a bigger share of its customers in such DMAs would likely be able to negotiate a better deal (e.g., a lower license fee) with content providers, which reflects the value of customers in such DMAs to content providers and is a competitive outcome based on market forces. The transaction will not change that – for a content provider, the value of a customer in New York does not depend on whether the customer is served by TWC or Comcast. Mathematically, Comcast's deals reflect the average value of its customer base. Even if Comcast may have a bigger share of its customers in high-value DMAs post-transaction, the change is likely to be small and any effect of the change on the deals that Comcast will negotiate post-transaction will reflect a change in Comcast's customer composition, rather than any competitive issue.

b) Comcast Will Not Be a Bottleneck for Content Providers to Be Viable

185. We next consider whether Comcast would gain market power against content providers because it would be a post-transaction "bottleneck" that prevents a network from reaching a national audience and being commercially viable. Comcast will not become such a "bottleneck"

[220] The combined company may gain some benefits if certain *existing* Comcast carriage agreements could be applied to TWC subscribers and the Comcast terms are better than the existing TWC terms. Interview with Greg Rigdon (Executive Vice President, Content Acquisition, Comcast).

as content providers have a large open field other than Comcast for selling their programming after the transaction. In fact, the United States Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") found in 2009 that because of increasing competition from DBS and telco MVPDs, "[c]able operators, therefore, *no longer have the bottleneck power over programming* that concerned the Congress in 1992."[221] Given the significant growth of DBS and telco MVPDs as well as other video distributors since 2009, Comcast will not have any "bottleneck power" even after the transaction.

186. Comcast will have an approximately 30% national share of MVPD customers post-transaction. So even if a content provider (including a new network) could not reach an agreement with Comcast, it would still be able to sell its national programming to other MVPDs that account for 70% of MVPD customers nationally (or more than 70 million households).

187. In the FCC's Fourth Report and Order where the Commission set the cable horizontal ownership limit, the Commission estimated that the minimum viable scale for a network was 19 million customers, which is far less than the "open field" of more than 70 million households that will be served by other MVPD providers after this transaction.[222] Even under this approach from the FCC (which has a number of problems as noted by the D.C. Circuit), a content provider would need to achieve a penetration rate of just 27% in the open field of 70 million households to reach the minimum viable scale of 19 million customers (27% = 19 million / 70 million) if it were not carried by Comcast. For example, carriage by DirecTV alone, which has 20.2 million customers, would exceed the threshold.[223] Thus, the transaction will not materially affect a content provider's ability to achieve viable scale.

188. Additionally, OVDs such as Netflix and Amazon are becoming a growing channel of distribution and monetization for content providers. OVDs have experienced rapid growth since 2010. By SNL Kagan's estimate, 45.2 million U.S. households subscribe to online video

[221] Comcast Corp. v. FCC, 579 F.3d 1, at 14 (D.C. Cir. 2009) (emphasis added).
[222] FCC Fourth Report & Order and Further Notice of Proposed Rulemaking, December 18, 2007.¶57 In a 2009 decision, the D.C. Circuit Court recognized that the Commission's estimated minimum viable scale and average penetration rate failed to consider the impact of DBS's growing market share. (*Comcast Corp. v. FCC*, 579 F.3d 1, 9 (D.C. Cir. 2009)).
[223] SNL Kagan, "MVPD Subscribers in Q3 2013."

services in 2013, more than double the 19.8 million in 2010.[224] The number of hours Americans spend watching video over the Internet has grown 70% since June 2010.[225] Surveys of TV households show that the percentage of TV watching time that is spent on viewing of Internet streaming to computers, TV sets, and handheld devices more than quadrupled, from 3% in 2011 to 13% in 2013.[226] Approximately 53 million households used online video viewing in 2013.[227] As OVD providers continue to grow, especially as they begin to offer linear programming, they will give content providers even more ways to distribute their programming and remain viable, which limits Comcast's bargaining leverage in acquiring programming. Indeed, OVDs are increasingly an outlet for original programming that is succeeding – with millions of online customers even though the programming is not carried by any traditional MVPD.[228]

c) Comcast Will Not Gain Market Power from the Perspective of Bargaining Theory

189. We next consider whether Comcast's larger size and footprint post-transaction would give it market power in bilateral negotiations with content providers from the perspective of bargaining theory. The economic literature on bargaining posits that each party in a negotiation considers its best alternative to a negotiated agreement ("BATNA"). In a carriage negotiation, an MVPD's willingness to pay will depend on its next best alternative to carrying the content provider's programming, and a content provider will also consider its next best alternative to obtaining carriage on that MVPD.

190. Concerns about a merger leading to an increase in bargaining power usually arise when the merging parties compete with each other for customers because the combined company would face less competitive pressure post-transaction.[229] This concern does not arise in the current transaction, because Comcast and TWC do not compete for customers. So the

[224] SNL Kagan, "Internet Video-On-Demand Revenue Projections, 2009-2022."
[225] Nielsen; FCC Fact Sheet on Internet Growth and Investment (Feb. 19, 2014).
[226] Horowitz Associates, Inc. Market & Multicultural Research. *An In-Depth Look at Alternative Platform Capability and Usage*, November 2013.
[227] SNL Kagan, "Online Video Buffets, But Does Not Break Multichannel Model," October 1, 2013.
[228] "OTT in a Pay-TV World," Parks Associates, December 2013.
[229] For example, such concerns have arisen related to hospital mergers. See, e.g., Gautam Gowrisankaran, Aviv Nevo and Robert Town (2013), "Mergers When Prices are Negotiated: Evidence from the Hospital Industry," NBER Working Paper 18875.

transaction will not change Comcast's incentives or next best alternative to carrying a content provider's programming – it will face the same risk of losing customers to competitors if it does not carry the programming.

191. The transaction also will not significantly affect a content provider's next best alternative to obtaining carriage on Comcast. As discussed above, an increase of Comcast's share of MVPD customers from 22% to 30% share does not make Comcast a bottleneck for content providers to succeed – they will still have a large open field other than Comcast to sell their programming.

192. Ultimately, the increase of Comcast's customers from approximately 22 million to 30 million raises the stakes in a programming agreement for both Comcast and content providers and affects both sides' best alternative to a negotiated agreement in similar ways. Distributors and content providers come to an agreement when there are benefits to both sides. For example, Comcast recently negotiated with Fox to carry its programming on Comcast cable systems. Not carrying the programming would have hurt Comcast and hurt Fox. The same is true for negotiations between TWC and content providers. After the transaction, Comcast will continue to face the competition that Comcast and TWC face now. So if Comcast does not carry the programming post-transaction, it will suffer the sum of losses that Comcast and TWC would suffer pre-merger if the two do not carry the programming. The same is the case for content providers. Thus, both sides would still benefit from reaching an agreement for desirable programming post-transaction as they do now. This economic reasoning applies to all content providers, including those who are not as large as or do not have programming as compelling as Fox.

193. Moreover, increasing competition among video distributors has enabled content providers to gain negotiation leverage in programming negotiations, which is reflected in the substantial increase in programming costs incurred by MVPDs over the past few years.[230] For example, by SNL Kagan's estimates, average retransmission consent fees for all broadcast networks paid by MVPDs has risen from $1.03 per sub per month in 2010 to $2.74 in 2013, a compound annual growth rate of nearly 40%, and SNL Kagan projects the average fees will increase to $6.32 in

[230] SNL Kagan Special Report, "U.S. Multichannel Subscriber Update and Programming Cost Analysis," by Robin Flynn, June 2013.

2019.[231] Similarly, average affiliate fees per sub for cable networks have also increased significantly. The annual growth rate between 2010 and 2013 was [[ ]]% for TBS, [[ ]]% for TNT,[[ ]]% for ESPN, [[ ]]% for Disney Channel, [[ ]]% for Nickelodeon, and [[ ]]% for FOX News.[232] The average affiliate fee per sub for RSNs also increased about [[ ]]% annually between 2010 and 2013.[233]

194. Comcast is paying increased programming fees, just like other MVPDs. Between 2010 and 2013, Comcast's programming cost per customer increased by 29.0%, more than the increases of 21.4%, 21.5%, and 26.7% for TWC, Charter, and DirecTV respectively over the same period.[234] Competition among distributors for compelling video content will continue to limit MVPD negotiating power regarding programming fees. For example, SNL Kagan projects that retransmission and affiliate fees will continue to increase at 8-11% for the next few years.[235]

195. Because content providers' increased leverage has resulted from increasing competition among distributors and the transaction will not reduce that competition, content providers will continue to hold considerable leverage against Comcast (and other MVPDs) post-transaction.

196. There are also a variety of theoretical models in academic literature on how a merger of buyers operating in different geographic areas may affect the merged firm's "buyer power" by changing its bargaining position with respect to sellers' bargaining positions. However, there is not any conclusive finding in this literature. Depending on the specific assumptions that a model makes, the model may predict an increase in bargaining power for the buyer, for the seller, or neither.[236] In fact, a previous study of cable industry mergers found empirical evidence that

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[231] SNL Kagan, "Broadcast retransmission fee projections through 2019, November 2013."
[232] SNL Kagan, "TV Network Summary Basic Cable Networks by Affiliate Revenue Per Sub Per Month 2006-2017."
[233] SNL Kagan, "TV Network Summary RSN Networks by Affiliate Revenue Per Sub Per Month 2006-2017."
[234] 10-K's of Comcast, TWC, Charter and DirecTV. These figures do not control for any difference in the rights obtained by MVPDs for the programming fees. For example, some MVPDs may pay more to acquire broader digital/new media rights, or may drop some more expensive channels in favor or less costly alternatives.
[235] SNL Kagan, "Economics of Basic Cable Networks 2012 Edition, Basic & HD Cable Network Economics, 2002-2021"; SNL Kagan, "Broadcast retransmission fee projections through 2019," November 2013.
[236] See, for example, Tasneem Chipty and Christopher M. Snyder (1999), "The Role of Firm Size in Bilateral Bargaining: A Study of the Cable Television Industry," Review of Economics and Statistics, 81(2):326-340; Alexander Raskovich (2003), "Pivotal Buyers and Bargaining Position," Journal of Industrial Economics, 51(4): 405-26. We understand that Dr. Mark Israel's declaration has a detailed discussion of the various models and conditions in the bargaining literature and the applicability of the assumptions in those models to this transaction.

mergers of MVPDs would *reduce* the merged firm's bargaining power.[237] As explained above, because this transaction does not change the demand for and supply of programming, a bargaining theory perspective does not give rise to any new competitive concerns regarding Comcast's acquisition of programming from content providers.

197. Our analysis above shows that speculation that Comcast would be able to depress what it pays for programming is not based on sound economics. We also note that even if the transaction could, hypothetically, slow down the increase in Comcast's programming costs, it would benefit consumers. Programming costs constitute a large share of Comcast's marginal cost of serving an MVPD customer. As is well-known in economics, a reduction (or slower increase) of marginal cost of a supplier tends to get passed through to consumers in whole or in part, whether or not the supplier has market power. Thus, over time, part or all of the savings in Comcast's programming costs would be passed through to Comcast's customers in the form of slower growth in their subscription fees, or through greater investments in service, expanded program offerings, or other non-price alternatives, relative to what consumers might pay without the transaction, implying an increase in consumer welfare.[238]

198. We also note that if Comcast were to pay less for programming, it is *not* likely to affect the prices paid by other MVPDs. Content providers negotiate to get the best deal they can get from each MVPD. If one pays less, there is no fundamental reason that others would or could be charged more. Programming fees are not a zero-sum game with the programmer getting a fixed amount overall. Nor is there any basis to assume that content providers are "leaving money on the table" by agreeing to a lower amount from other MVPDs today than they can get. In addition, some MVPDs may have most favored nation ("MFN") clauses in their contracts that may ensure that they benefit from any rate reductions another MVPD obtains, rather than the reverse.

[237] Tasneem Chipty and Christopher M. Snyder (1999), "The Role of Firm Size in Bilateral Bargaining: A Study of the Cable Television Industry," Review of Economics and Statistics, 81(2):326-340.

[238] Any changes in programming costs would occur over time, rather than right away, due to the long term programming contracts that are in place. For example, an increase of 5% per year instead of 10% per year in programming costs would lead to lower cable prices than would otherwise have occurred even though consumers would not actually see nominal rate reductions. These changes might also take 3-5 years to come to fruition given the multi-year nature of programming contracts.

2. No "Program Carriage" Concerns Arise from the Transaction

199. In theory, a merger involving a vertically integrated MVPD could raise vertical program carriage issues if it gave the MVPD an increased incentive and ability to discriminate against non-affiliated content providers to benefit the MVPD's affiliated programming. According to this "program carriage" theory, by denying or limiting carriage of an unaffiliated network, a large MVPD could prevent an unaffiliated network from gaining economies of scale, thus weakening competition with its own affiliated networks.

200. We consider two potential program carriage concerns for the current transaction, both of which are analogous to program carriage concerns examined and addressed by the Commission in the NBCUniversal transaction. The first scenario is whether Comcast's acquisition of TWC systems would give it incentive to discriminate against competitors of Comcast's existing programming. The second scenario is whether Comcast's acquisition of TWC's programming would give it incentive to discriminate against competitors of the acquired TWC programming.

201. Our analysis shows that neither scenario raises competitive concerns.

a) No Incremental Incentive or Ability to Discriminate against Unaffiliated Programming to Benefit Comcast/NBCUniversal Programming

202. The first scenario is whether Comcast's acquisition of TWC systems would give it incentives to discriminate against competitors of Comcast/NBCUniversal's existing programming. For an anticompetitive program carriage strategy to be profitable in this scenario, there would have to be enough viewership increase for Comcast/NBCUniversal programming to offset the customers that Comcast would lose to other MVPDs due to it not carrying the non-affiliated programming targeted by the strategy. Such an anticompetitive program carriage strategy is unlikely with Comcast's acquisition of TWC systems.

203. First, Comcast/NBCUniversal programming faces strong competition from unaffiliated content providers.[239] If Comcast were to deny carriage to a particular cable network,

[239] As discussed in Section III.B, Comcast/NBCUniversal currently accounts for less than 12% of total network revenues.

Comcast/NBCUniversal's networks would continue to compete for viewers, advertising, and programming with a wide variety of other programming. Thus, denying carriage to a particular cable network would likely bring little benefit to Comcast/NBCUniversal programming.

204. Second, non-affiliated programming would be the target of the anticompetitive program carriage strategy in this scenario only if it is of potential or actual interest to Comcast's customers. Otherwise, carriage of the programming would have no impact on the viewing choice of Comcast's customers and thus would not affect Comcast's affiliated programming. However, if Comcast were to deny carriage to non-affiliated programming of interest to its customers, it would reduce the attractiveness of Comcast's MVPD service, which would in turn result in loss of customers to other MVPDs.

205. In short, the vigorous competition Comcast faces in the upstream (video programming) and downstream (video distribution) markets means an anticompetitive vertical carriage strategy would likely not be profitable – it would likely lead to some customers leaving Comcast while bringing little benefit to Comcast/NBCUniversal programming.

b) No Incremental Incentive or Ability to Discriminate against Unaffiliated Programming to Benefit TWC Programming.

206. The second scenario is whether Comcast's acquisition of TWC's programming would give Comcast incentive and ability to discriminate against competitors of TWC programming. Comcast is unlikely to have such incentive or ability given the very limited TWC programming assets it will acquire from TWC and the vigorous competition it faces in video distribution and video programming.

207. As discussed in Section III.B above, TWC does not have majority ownership of any national cable networks. Among TWC-affiliated RSNs, only three carry major league professional sports teams in English: TWC SportsNet (Lakers), which TWC owns; SportsNet LA (Dodgers), for which TWC provides certain services, but does not own the network; and SportsNet New York (Mets), in which both TWC and Comcast hold minority interests.[240] First,

[240] TWC also has three regional networks that carry major league sports in Spanish, including TWC Deportes (Lakers) and TWC Channel 858 (Clippers and Angels, based on programming feeds from Fox) in Los Angeles, and

we consider the potential for program carriage concerns in Los Angeles arising from the transaction. Today, TWC has cable systems in the Los Angeles DMA, the core of the footprints of TWC SportsNet and SportsNet LA, but Comcast does not. Thus, the transaction will not increase the combined company's number of customers in the area where customers likely care most passionately about RSNs carrying Los Angeles professional sports. As a result, the transaction does not give the combined company any incremental ability (relative to what TWC has now) to undertake a program carriage strategy in favor of these TWC RSNs.

208. Comcast and TWC already own minority stakes in SportsNet New York. Thus, the transaction does not give Comcast incremental incentives or ability (relative to the incentives or ability, if any, that TWC or Comcast has now) to discriminate against an unaffiliated network in program carriage to benefit SportsNet New York. Moreover, SportsNet New York competes for viewers and advertisers with a wide variety of programming. For example, if, hypothetically, Comcast anticompetitively denied carriage to the YES Network (NY Yankees), some Comcast customers who are avid Yankee fans would likely switch to other MVPDs that carry the YES Network. And customers who remained with Comcast, but no longer had access to the YES Network, would have a wide variety of viewing options other than SportsNet New York, including ESPN, Fox Sports, and other programming. Therefore, Comcast would risk losing MVPD customers if it tried to discriminate against the SportsNet New York's competitors like the YES Network and would receive little benefit from the strategy.

3. Market Dynamics between Comcast and Content Providers Will Continue After the Transaction

209. In recent years, Comcast has successfully entered into marketplace-based carriage agreements with many content providers, including a decade-long distribution agreement with Disney covering all its television content, a renewal agreement with the Fox Networks covering

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Canal de Tejas (Mavericks, Spurs and Rangers, based on programming feeds from Fox) in Texas. The core footprint of these networks does not cover areas where Comcast's subscribers are located: Comcast is not present in Los Angeles; in Texas, most of Comcast's subscribers are in Houston, which is not covered by the footprint of Canal de Tejas and the network does not carry any Houston-based professional sports teams. More generally, as a Spanish-language sports network, Canal de Tejas has a limited viewership and faces vigorous competition from other English and Spanish-language sports networks and other networks. As a result, the transaction does not raise any incremental program carriage or program access issues for TWC affiliated Spanish-language RSNs. Other TWC RSNs do not carry highly desirable major league sports programming and mostly operate in areas where Comcast currently has no or few subscribers. So their acquisition also does not raise program carriage or program access concerns.

Fox broadcast stations and cable networks for both live and on demand programming, independent content providers including AMC and Scripps, as well as a number of RSNs including NESN. According to Comcast's reports to the Commission, no program carriage complaints were filed against Comcast since its initial acquisition of part of NBCUniversal.[241]

210. The outcomes of these recent carriage negotiations between Comcast and content providers show that Comcast can work with content providers under the current market conditions. Such dynamics will continue after the transaction as Comcast will not gain any market power and there will not be any new competitive concerns. And in all events, the Commission's existing program carriage rules and the conditions agreed to in the NBCUniversal transaction remain in place to address any competitive concerns.

C. No Competitive Concerns in the Sale of Video Programming

211. We now turn to potential competitive concerns about the sale of video programming by the combined company. In previous transactions, the Commission and various parties have raised concerns that after a merger involving MVPDs and content providers, the merged entity could exercise market power as a seller of programming and charge higher prices to all other MVPDs (horizontal market power concerns), or could charge higher prices for or withhold programming to disadvantage its MVPD rivals (vertical "program access" concern). These potential concerns regarding program selling do not arise in this transaction.

1. No Increase in Market Power in the Sale of Programming

212. In theory, a firm that acquires enough video programming could gain market power in the supply of programming and raise prices for its programming. However, Comcast will gain a very limited amount of programming from TWC in the transaction, and Comcast's shares of national and regional programming post-transaction will also be very limited. Thus, the transaction will not raise any competitive concerns in the sale of programming. In fact, the transaction only increases Comcast's share of total network revenues (including those related to broadcast networks, cable networks and RSNs) from 11.61% to 11.86%, an increase of 0.25%.

[241] 2011-2013 Comcast annual reports of compliance with transaction conditions to the FCC, Section III.1. We understand that there has been a dispute with Bloomberg TV involving the definition and interpretation of certain "neighborhooding" conditions in the NBCUniversal transaction.

213. As discussed in Section III.B., the transaction will not increase the number of national programming networks owned by Comcast and there will only be a small change in regional programming. As discussed above, there are also only three TWC-affiliated RSNs that carry major league sports teams in English, two of which (TWC SportsNet and SportsNet LA in Los Angeles) do not have a footprint that overlap with a Comcast RSN and the third one (SportsNet New York) is already partially owned by Comcast and Comcast would remain a minority owner after the transaction.[242] So the transaction does not materially change the concentration of regional programming either.

214. Another potential program selling concern might be that the combination of an NBC O&O station and a TWC-affiliated RSN in the same area could increase Comcast's ability to exercise market power and extract higher fees from other MVPDs for that programming. In this transaction, there are only two areas, Los Angeles and New York, where there is an NBC O&O station and an English language TWC-affiliated RSN that carries major league sports. Because programming on NBC O&Os and programming on RSNs mostly serve different demands (general entertainment versus regional sports), they are not close competitors. Moreover, in both areas the NBC O&O and TWC-affiliated RSN face many other programming competitors, including a large number of other national and regional broadcast and cable networks, as discussed earlier and in the next section.[243] As a result, the combination of an NBC O&O and TWC-affiliated RSN will not give Comcast market power.[244]

215. Comcast will also acquire a number of local or regional news and lifestyle networks from TWC, which face substantial competition from programming offered by local affiliates of the big four networks and other content providers.[245] Moreover, other content providers could enter to

[242] Other TWC regional sports networks do not carry major league professional sports and most do not have a footprint that overlaps with that of a Comcast RSN.
[243] Additionally, retransmission negotiations between MVPDs and Comcast/NBCUniversal for NBC O&Os are typically conducted for all NBC O&Os together that are carried by the MVPD in question and may or may not involve the negotiations for any Comcast/NBCUniversal RSNs carried by the MVPD.
[244] Similar analysis applies to areas where there is a Telemundo O&O station and a TWC affiliated Spanish-language RSN that carries major league sports, including Los Angeles (with a Telemundo O&O, TWC Deportes, and TWC Channel 858) and Dallas and San Antonio in Texas (with a Telemundo O&O and TWC's Canal de Tejas).
[245] For example, while Comcast currently owns an NBC O&O station in New York and will acquire TWC's local news station NY1, it faces competition from dozens of other news outlets in the area. Interview with Melinda Witmer (Executive Vice President, Chief Video Officer & Chief Operating Officer, Networks, TWC).

compete with Comcast's affiliated programming.[246] As a result, the acquisition of these regional networks does not raise competitive concerns.

2. No "Program Access" Concerns Arise from the Transaction

216. In theory, the proposed transaction could raise vertical "program access" concerns if it gave Comcast an increased incentive and ability to permanently or temporarily foreclose (or threaten to foreclose) the combined company's programming to rival MVPDs to benefit Comcast's own MVPD service. The Commission has considered these potential concerns in previous transactions involving vertically integrated MVPDs, including the NBCUniversal transaction.[247] At issue in the current transaction is whether Comcast's acquisition of TWC's cable systems and limited programming assets raises any incremental program access concerns.

217. We consider two scenarios. The first scenario is whether Comcast's gain in customers from TWC, particularly in local areas where Comcast owns regional programming assets, would give Comcast incentive to withhold Comcast/NBCUniversal programming from competing MVPDs. The second scenario is whether Comcast's acquisition of programming assets from TWC, particularly in areas where Comcast currently has customers, would give it incentive to withhold the TWC programming assets from competing MVPDs. Our analysis shows that neither scenario is a concern.

a) NBC O&Os

218. The first question is whether the transaction would give Comcast increased incentive and ability to raise price or deny access to its 10 NBC O&O stations in order to hurt its MVPD competitors. Of these 10 stations, only four are in DMAs where Comcast is acquiring cable systems from TWC: New York, Los Angeles, Dallas, and San Diego. In these DMAs, Comcast will have the following share of MVPD customers post-transaction according to SNL Kagan: **[[ ]]**% in Los Angeles, **[[ ]]**% in New York, **[[ ]]**% in Dallas, and **[[ ]]**% in San Diego. The transaction does not give Comcast incentive or ability to foreclose other MVPDs' access to

[246] For example, in New York, Verizon has just started a local news network FioS1 that competes with TWC's local news station NY1.
[247] Comcast-NBCUniversal Order, ¶34; News Corp.-Hughes Order, ¶76; Adelphia Order, ¶115.

NBC O&Os in these areas. Moreover, to the extent the access to all 10 NBC O&O stations are negotiated at one time with an MVPD (e.g., DirecTV), a foreclosure strategy would put all 10 stations at risk.

219. Denying access of the NBC broadcast network to competing MVPDs in order to advantage Comcast's MVPD service has become increasingly costly due to the changing market landscape of video programming over the past few years. As discussed at length in the Commission's proceeding regarding the Comcast-NBCUniversal transaction, Comcast would have to sacrifice retransmission fees and advertising revenues if it were to deny access of an NBC O&O to a rival MVPD, not to mention harm to the network's reputation among consumers. This cost has increased significantly because retransmission fees for NBCUniversal stations (and broadcast affiliates of the other three major networks) have been rising. For example, between 2012 and 2013, the average per sub retransmission consent fee for NBC and Telemundo O&Os increased from [[ ]] to [[ ]].[248] Because NBC O&O's have a higher fee than Telemundo O&O's, the average fee of NBC O&O's should be even higher than [[ ]]. Both Comcast/NBCUniversal and industry analysts also expect these fees to continue to grow.[249] Losing advertising revenue would be even more costly. The advertising revenue per customer per month from the four NBC O&O stations ranged from [[ ]] to [[ ]] in addition to [[ ]] from the NBC network.[250]

220. As retransmission and advertising revenues of NBC O&O stations and the NBC network grow, temporarily or permanently foreclosing other MVPDs' access to the stations would run an increasing risk of damaging the economic value of the stations and even the network. Additionally, if Comcast were to foreclose just one or a subset of MVPDs in an area at issue and some customers of the MVPD(s) were to leave, Comcast would likely only capture a limited

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[248] SNL Kagan, "Retrans per-subscriber fees increase 40.1% in Q3, 38.5% YTD," December 2013.

[249] According to Steve Burke, the CEO of NBCUniversal, "We will, as contracts come up, get those revenues the same way as CBS, ABC and Fox have. There may be a little bit of a lag, because our contracts may come up at a later date than some of the other broadcasters, but we have gone from essentially zero a couple of years ago to $200 million this year. I see no reason why we won't draft behind the other broadcasters and get paid in a similar fashion to the way they get paid in the future." (http://www.multichannel.com/cable-operators/burke-nbc-retrans-revenue-reach-200m-2013/145410) SNL Kagan projects an average annual growth rate of 12% - 30% for retransmission consent fees for all broadcast networks through 2017.

[250] SNL Kagan, "TV Station Database 2010-2016 & TV Networks 2010-2016."

share of those switchers since Comcast or TWC only has a limited share among customers in each area.

221. Moreover, the program access concern related to the vertical overlap between TWC customers and NBC O&Os in this transaction is essentially the same in nature as the program access concern related to the vertical overlap between Comcast customers and NBC O&O's in the NBCUniversal transaction. Since the close of that transaction, NBCUniversal has reached renewal agreements with multiple MVPDs (including those that compete directly with Comcast), suggesting that Comcast has neither the incentive nor the ability to withhold the NBC O&Os under existing market conditions. As discussed above, it will be even more costly to deny MVPDs access to NBC O&O going forward. Thus, the transaction does not raise any new competition issues regarding access to NBC O&Os.

b) Telemundo O&Os

222. Comcast also has 17 Telemundo O&O stations. Of these, only four are in DMAs where Comcast is acquiring a significant number of cable customers from TWC: New York, Los Angeles, Dallas, and San Antonio.[251] Comcast is unlikely to gain a substantial number of customers from rival MVPDs by withholding Telemundo O&O programming. First, the Telemundo network is much less widely viewed than the NBC network and other Big Four broadcast networks. Second, to the extent that the focus is limited to Spanish-language networks, Telemundo O&Os faces strong competition from Univision affiliates, the top Spanish language network in the nation, as well as from stations affiliated with other networks such as MundoFox and Azteca.[252] With such competition, foreclosing access to Telemundo O&Os in these markets would hurt the value of the Telemundo O&O and Telemundo network without necessarily gaining many (or any) customers.

[251] TWC also owns a local Spanish language news network (NY1 Noticias) in New York.
[252] For example, according to SNL Kagan, Telemundo's average 24 hour viewership in 2012 was 372,000 households, less than half of Univision's 782,000 households. Univision also owns UniMás.

c) NBCUniversal National Cable Networks

223. Comcast currently has an attributable ownership interest in 24 national cable networks and a pay-per-view programming service (iN Demand), including a majority interest in 16 networks such as USA, CNBC, MSNBC, Bravo, and the Golf Channel. NBCUniversal national cable networks mostly offer general entertainment and news programming. These networks face strong competition from programming of other content providers. For example, NBCUniversal's USA network faces vigorous competition from a variety of networks like TNT, TBS, and FX. Thus, foreclosing other MVPDs' access to Comcast's national cable networks would not benefit Comcast's MVPD service as it would not only cause the networks to lose revenues but also would likely not lead to many customers of other MVPDs switching to Comcast. Additionally, if Comcast were to foreclose just one or a subset of MVPD competitors and some customers of the MVPD(s) were to leave, Comcast would likely only capture a limited share of those switchers since Comcast will only have a less than 30% share nationally post-transaction.

224. Again, the potential program access concern related to NBCUniversal national cable networks are analogous to those examined and addressed by the Commission in the NBCUniversal transaction. Since the close of the NBCUniversal transaction, NBCUniversal has reached renewal agreements with multiple MVPDs (including those that compete directly with Comcast), suggesting that Comcast has neither the incentive nor the ability to withhold these national cable networks under the existing market conditions. The transaction will not change the market conditions so there will not be any program access concerns regarding these national cable networks going forward either.

d) Comcast and TWC RSNs

225. We now consider potential program access concerns associated with Comcast and TWC RSNs. In theory, the vertical overlap between Comcast RSNs and TWC customers (or between TWC RSNs and Comcast customers) potentially could lead to a program access competitive concern. However, the incremental vertical overlap between cable systems and RSNs that arises in this transaction is limited and does not lead to program access concerns. In addition, broad distribution is critical for RSNs as affiliate fees account for most of the RSNs' revenues, so

denying other MVPDs' access to Comcast or TWC RSNs would damage the value of those RSNs.[253]

226. We start by considering vertical overlap between Comcast RSNs and TWC cable systems. Comcast will acquire TWC cable systems in the footprint of four Comcast affiliated RSNs that carry major league professional sports: CSN Mid-Atlantic, CSN Chicago, SportsNet New York, and CSN New England.[254] Comcast will only gain a small number of TWC customers in most of these RSNs' footprints, particularly in the DMAs that are home to the major league team(s) carried by the RSNs ("home DMAs").[255]

227. CSN Mid-Atlantic is distributed throughout Maryland, Virginia, the District of Columbia, as well as parts of Delaware, Pennsylvania, and West Virginia. Across CSN Mid-Atlantic's footprint, Comcast will acquire less than {{ }}% of the customers that currently receive CSN Mid-Atlantic, all of which are in the outer market of its footprint.[256] Comcast will not acquire any systems from TWC in the Washington, DC DMA, home to the teams carried by CSN Mid-Atlantic (Washington Wizards and Washington Capitals). Thus, the transaction does not raise any new program access concern regarding CSN Mid-Atlantic.

228. CSN Chicago is distributed throughout most of Illinois, and parts of Indiana and Iowa. Comcast only owns 30% of CSN Chicago,[257] so it is not in a position to sacrifice the RSN's interest by denying other MVPDs' access to the RSN. Comcast also will not acquire any systems from TWC in the Chicago DMA, home to the teams carried by the CSN Chicago (Chicago Bulls, Chicago Blackhawk, Chicago White Sox and Chicago Cubs). In addition, across CSN Chicago's footprint, Comcast will acquire less than {{ }}% of the customers that currently

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[253] Interview with John Ruth (CFO, Comcast SportsNet).

[254] We focus on the four Comcast RSNs that carry major league professional sports and currently have a contract with TWC. For other Comcast RSNs, the lack of carriage by TWC suggests either TWC has no or very few subscribers in the RSNs' footprint or the programming on these RSNs is not essential to TWC subscribers in the footprint. In any of these scenarios, the transaction does not raise any program access concerns.

[255] In the Adelphia order, the Commission stated "we find it reasonable to define the relevant geographic market for the analysis of harms concerning access to RSNs as any DMA that is home to a sports team." See *In re Applications for Consent to the Assignment and/or Transfer of Control of Licenses Adelphia Communications Corporation (and Subsidiaries, Debtors-In-Possession), Assignors, to Time Warner Cable Inc. (Subsidiaries), Assignees, Adelphia Communications Corporation, (and Subsidiaries, Debtors-In-Possession), Assignors and Transferors, to Comcast Corporation (Subsidiaries), Assignees and Transferees*, Memorandum Opinion and Order (*"Adelphia Order"*), 21 FCC Rcd, ¶125 (2006).

[256] Interview with John Ruth (CFO, Comcast SportsNet).

[257] In addition to Comcast, CSN Chicago is owned by four Chicago professional sports teams including the Chicago Bulls, Cubs, White Sox and Blackhawks.

receive CSN Chicago, all of which are in the outer market of its footprint.[258] Thus, the transaction does not raise any new program access concern regarding CSN Chicago.

229. CSN New England is distributed throughout New England. Across CSN New England's footprint, Comcast will acquire less than {{ }}% of the customers that currently receive CSN New England, almost all of which are with TWC systems outside Boston, the home DMA of the major league team carried by the RSN (Celtics).[259] Thus, the transaction does not raise any new program access concern regarding CSN New England.

230. SportsNet New York is distributed in most parts of New York State, and in parts of Connecticut, New Jersey, and Pennsylvania. Comcast will remain a minority owner of SportsNet New York after the transaction so it cannot sacrifice SportsNet New York's interest by denying other MVPDs' access to the RSN. Moreover, both TWC and Comcast are minority owners of the RSN now and both have systems in the footprint of the RSN, so the transaction does not give them an incremental incentive or ability to undertake any anticompetitive program access strategy.

231. We now consider vertical overlap between Comcast cable systems and TWC RSNs that Comcast will own post-transaction. For the TWC RSN that carries major-league professional sports teams in English, such overlap only happens in the fringe area of the footprint of TWC SportsNet (Lakers). In Los Angeles, home to the LA Lakers, Comcast does not have any customers currently, though it will acquire TWC customers in the transaction.[260] Thus, the transaction will not increase the number of customers managed by the combined company in the area where the TWC RSNs likely matter the most to MVPD customers. Thus, relative to TWC today, the combined company will not gain additional incentive or ability to foreclose competing MVPDs post-transaction, and there is not any transaction-specific program access concern.[261]

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[258] Interview with John Ruth (CFO, Comcast SportsNet).
[259] Interview with John Ruth (CFO, Comcast SportsNet). According to SNL Kagan, TWC only has approximately [[ ]] subscribers in the Boston DMA, which is less than [[ ]]% of MVPD subscribers in the DMA.
[260] Comcast has some MVPD customers in the Santa Barbara DMA, where TWC SportsNet is carried.
[261] Some public press also suggests that MVPDs operating in the core of these RSNs' footprint may be able to compete and be viable without carrying these RSNs. See Matthew Futterman, "Pay TV Balks at Price of the Dodgers," Wall Street Journal, March 12, 2014, available at < http://online.wsj.com/news/articles/SB10001424052702303546204579435602453033552>. According to the article, Dish decided not to carry the TWC's RSNs carrying the LA Lakers in the Los Angeles area despite the team being "the city's most heralded team" and "has gained about 1,300 subscribers during the period it hasn't carried the Lakers

e) The Transaction Will Not Lead to Any Program Access Concerns for OVDs

232. The analysis above regarding program access for MVPDs applies to OVDs as well – Comcast will not gain either the incentive or ability to undertake a national foreclosure strategy against OVDs as a result of its minimal gains in programming or incremental gains in distribution from the transaction. In addition, although some OVDs are positioning themselves as competitors to MVPDs through OTT linear streaming services, OVDs are not generally considered to be full competitive substitutes for MVPD service today. To the extent a customer already "cut the cord" on MVPD service and relies exclusively on OVD service, it is unlikely that such a customer would switch back to MVPD service based on the absence of specific programming on a single OVD.[262] Indeed, to be effective, a foreclosure strategy would likely have to deny *all* OVDs access to valuable programming because the same content is often made available on a non-exclusive basis to numerous OVDs (i.e., Amazon has many of the same NBCUniversal movies and television shows as iTunes and Netflix, etc.).

233. In any event, if Comcast were to deny an OVD's access to NBCUniversal's national programming and some cord cutters were to switch back to MVPDs with access to such programming, Comcast would likely only gain a limited share of the switchers (since Comcast's nationwide share of MVPD customers will be less than 30%), while bearing 100% of the lost revenues associated with the programming that is withheld – revenues that are increasing as OVDs have increased their purchases of programming.[263] Moreover, reducing the attractiveness of OVDs by denying NBCUniversal content would also adversely affect Comcast's profitable broadband business. In the three years since the NBCUniversal transaction, NBCUniversal has

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network." There are other examples where MVPDs have chosen not to carry RSNs of professional and college sports with apparently minimal adverse effect or concern. For example, "DirecTV has passed on carrying the Pac-12 Network, which features the sports of the dominant college conference in the Western U.S. . . . [and] . . . subscriber losses have been 'de minimus.'" DirecTV, as well as AT&T and other pay-TV providers, also have passed on carrying Comcast SportsNet Houston, which broadcasts games of Houston Rockets and Houston Astros. Similarly, "subscriber outcry and action has been minimal."

[262] Since the analysis would involve marginal customers, the customer on the fringe of deciding to "cut the cord" would be making essentially the same decision.

[263] See Amol Sharma, How Netflix Is Shaking Up Hollywood," Wall St. Journal, July 7, 2013, available at http://online.wsj.com/news/articles/SB10001424127887324251504578581330740965110: "Netflix, along with other digital-video rivals, has become a significant driver of media-industry profit growth. Big media companies generated about $1.6 billion of revenue last year from licensing their content to such services. Though that represents just 1% of their aggregate revenue, it accounts for a large percentage of operating-income growth, according to Bernstein Research."

continued to license its valuable programming to multiple OVDs, including Amazon, Netflix, YouTube, and many others.[264]

3. Market Dynamics between Comcast/NBCUniversal and Video Distributors Will Continue After the Transaction

234. In recent years, Comcast/NBCUniversal has successfully negotiated comprehensive renewal for its programming, including O&Os, RSNs, national programming networks, and associated content rights, with a number of MVPDs such as Verizon, Cablevision, Suddenlink, Mediacom, and NCTC without resort to arbitration. In addition, no MVPD has submitted any program access dispute to commercial arbitration since the completion of the Comcast-NBCUniversal transaction. As noted, it has also successfully licensed or renewed licenses to programming with dozens of OVDs, including Amazon, Netflix, and YouTube.

235. The outcomes of those recent negotiations show that Comcast/NBCUniversal can work with video distributors under current market conditions. Such dynamics will continue as the transaction will not change the competitive conditions in the marketplace. In addition, the Commission's program access rules from the NBCUniversal transaction are in place to mitigate any possible competitive concerns.

VI. No Competitive Concerns in the Sale of Video Advertising

236. Another potential competitive concern in media industry mergers is that the transaction could give an MVPD, broadcaster, or cable network the incentive and ability to exercise market power in the sale of advertising. The proposed transaction raises no competitive concerns in the sale of video advertising, including television advertising.

237. Competition in the advertising industry is robust, and the current advertising services offered by Comcast and TWC compete with many other media.[265] Moreover, the lack of overlap

[264] 2011–2013 Comcast annual reports of compliance with transaction conditions to the FCC, Section II.

[265] While both the Department of Justice and the Commission have concluded that spot cable advertising and local broadcast advertising are not sufficiently close substitutes to be in the same product market, in the event they were in the same market, it would also encompass online, radio, print, outdoor and other forms of advertising. See Complaint, United States Department of Justice Antitrust Division v. Gannett Co., Inc, Belo Corp., and Sander Media LLC, December 16, 2013. See also Complaint, U.S. v. Raycom Media, Inc., August 28, 2008. See also FCC Memorandum Opinion and Order in the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, January 20, 2011

between Comcast and TWC systems and the limited programming assets owned by TWC mean that the transaction will not reduce the advertising options available to national, regional, or local advertisers. As described above in Section IV.D, the transaction will yield benefits for advertisers by speeding up the deployment and measurement of advanced advertising services in a combined footprint with greater scale, geographic reach, and content rights.

A. Sale of National Video Advertising

238. Since the proposed transaction does not change the ownership of any national broadcast and cable networks that compete for advertising expenditures today, buyers of network advertising will continue to be able to choose from all of the competing suppliers that they have today. Even considering only national cable and broadcast television networks and excluding all other media, Comcast's share of net advertising revenue was **[[ ]]**% in 2013.[266] Because Comcast will not acquire any national network programming assets from TWC, the transaction will have no impact on Comcast's share of network advertising revenue.

239. Moreover, television advertising competes with other forms of video advertising like online video advertising, a rapidly growing segment of digital/online advertising. TWC notes that it faces "intense competition" for advertising revenue from a range of different media and advertising platforms.[267]

B. Sale of Local or Regional Video Advertising

240. The combination of Comcast and TWC's cable systems will not reduce competition in the sale of local or regional advertising because the companies operate in distinct footprints. Even in the handful of DMAs in which both have a non-negligible presence, Comcast and TWC operate in different geographic areas and do not serve or compete for the same households. Because they do not represent competing choices for an advertiser seeking to reach a given cable household, combining their complementary systems will not reduce the array of choices by which an advertiser can reach a given household today.

[266] SNL Kagan, "Television Network Ranking by Metric"; SNL Kagan, "Cable Network Ownership as of Dec-2013".
[267] TWC Form 10-K Filed February 18, 2014.

241. Nor will the combination of TWC's regional or local programming assets with Comcast's cable systems or regional programming assets reduce competition in the sale of advertising.[268] First, TWC's affiliated RSNs are generally located in areas in which Comcast does not have a cable system or RSN presence, other than TWC SportsNet New York. Comcast does not have a meaningful customer base in the home markets for TWC RSNs, and TWC does not have a meaningful customer base in the home markets for Comcast RSNs. Second, these TWC RSNs compete with a wide variety of other programming networks and other media for advertising dollars. Finally, even in a narrow calculation that includes only local television advertising and excludes all other media, both TWC's Los Angeles RSNs and SportsNet New York comprised only about **[[ ]]**% of total local television advertising revenue in their home DMAs in 2013.[269] Therefore, the acquisition of TWC RSNs will result in only a small increase in Comcast's share of local advertising sales, and will not provide Comcast with market power.

242. Finally, the combination of TWC cable systems or RSNs with NBC or Telemundo O&Os does not raise competitive concerns about local advertising, for several reasons. First, the scope of any potential overlap is limited. There are a total of four DMAs with a TWC-affiliated RSN and/or non-negligible number of TWC customers and an NBC O&O: New York, Los Angeles, Dallas, and San Diego. Telemundo O&O stations are present in three DMAs with a Spanish language TWC RSN: Los Angeles, Dallas, and San Antonio.[270]

243. Second, TWC's cable systems have a limited advertising inventory in comparison with the broadcast stations in these markets. The multiple MVPD systems within a given DMA control in aggregate a small fraction (approximately 15%) of the total inventory of television advertising impressions available for local advertising.

244. Third, the potential advertising competition issues raised by the combination of cable systems and/or RSNs with an NBC or Telemundo O&O broadcast station are essentially

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[268] The principal programming assets for which TWC sells advertising comprise a handful of RSNs that carry major league sports teams in Los Angeles (TWC SportsNet, TWC Deportes, SportsNet LA, and Channel 858), New York (SportsNet New York), and Texas (Canal de Tejas).

[269] SNL Kagan (SNLKagan_TelevisionNetworkRankingbyMetric_v1.xls); BIA Kelsey Media Ad View Plus. Because the RSN advertising revenues are derived from advertising spanning multiple DMAs, these shares overstate the significance of these RSNs in Los Angeles and New York.

[270] New York has both a TWC cable system with a non-negligible presence and a Telemundo O&O stations, but TWC Media sells a minimal amount of Spanish language cable advertising.

identical to those that the Commission and DOJ considered in the NBCUniversal transaction where they did not see any likely effect on competition.[271] In fact, the advertising markets at issue in the NBCUniversal transaction have been operating with a combined NBC O&O and Comcast cable system and RSN for several years now, and we are not aware of any competitive concerns being raised by advertisers.

245. Fourth, given the differences between the spot advertising sold by broadcast stations and cable companies that limit substitution between the two for some advertisers, it would not be appropriate to measure the impact of this transaction in a spot television advertising market that includes broadcast and cable and excludes all other media. In particular, cable companies place a much greater emphasis on precise targeting within a DMA and selling local-zoned advertising, whereas broadcast advertising, by its very nature, has broad reach and blankets an entire DMA. These services tend to appeal to different types of advertisers.[272] And RSN programming has a different focus and audience than NBC and Telemundo O&Os. The transaction does not reduce the set of other local broadcast affiliates with which the NBC and Telemundo O&Os compete most closely. The NBC O&O stations face competition from at least 6 other local broadcasters in each of these four DMAs, and their share of local broadcast advertising revenue varies from **[[ ]]**% to **[[ ]]**%.[273]

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[271] In the NBCUniversal transaction, the potential competitive concern involved the combination of an NBC O&O station with a Comcast cable system or RSN in a given DMA, whereas here, the potential concern involves the combination of a Comcast-owned NBC O&O station with a TWC cable system or RSN. See FCC Memorandum Opinion and Order in the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, January 20, 2011: "We find that the proposed transaction is unlikely to harm competition in advertising. Broadcast and cable programming advertising are not sufficiently close substitutes to advertisers to warrant defining a product market that would include both….Our view is consistent with the DOJ's conclusion that cable and broadcast advertising are in separate product markets because there are many advertisers for which there is no substitute for broadcast television."

[272] Complaint, United States Department of Justice Antitrust Division v. Gannett Co., Inc., Belo Corp., and Sander Media LLC, December 16, 2013: "Like broadcast television, cable television and satellite television channels combine elements of sight, sound, and motion, but they are not a desirable substitute for broadcast television spot advertising for two important reasons. First, satellite, cable, and other landline content delivery systems do not have the "reach" of broadcast television. Typically, broadcast television can reach well-over 90% of homes in a DMA, while cable television often reaches much less, e.g., 50% or fewer of the homes in the St. Louis DMA….Second, because cable and satellite television may offer more than 100 channels, they fragment the audience into small demographic segments….Media buyers often buy cable television and satellite television not so much as a substitute for broadcast television, but rather to supplement a broadcast television message, to reach a narrow demographic with greater frequency (e.g., 18–24 year olds) or to target narrow geographic areas within a DMA."

[273] SNLKagan Broadcast Station Database. The Telemundo O&O stations face at least four other Spanish language broadcast stations in each of these three DMAs, and their share of local Spanish language broadcast advertising revenue varies from **[[ ]]**% to **[[ ]]**%.

246. Moreover, an analysis of local advertising competition that included broadcast and cable and excluded all other media would be artificially narrow and exaggerate the competitive impact of the proposed merger on local advertising by failing to consider the intense competition that local broadcast affiliates and cable systems face from other local advertising media in general and from online advertising in particular. Strong, technologically advanced competitors such as Google and Facebook offer targeted digital advertising that serves as a cost-effective alternative to local television advertising.

I, Gregory L. Rosston, declare under penalty of perjury that the foregoing declaration is true and correct to the best of my knowledge, information, and belief.

Executed on April 4, 2014.

Gregory L. Rosston

I, Michael D. Topper, declare under penalty of perjury that the foregoing declaration is true and correct to the best of my knowledge, information, and belief.

Executed on April 4, 2014.

Michael D. Topper

APPENDIX 1

Gregory L. Rosston

Stanford Institute for Economic Policy Research
Stanford University
Stanford, CA 94305-6072
Phone (650) 566-9211
e-mail: grosston@stanford.edu
greg@rosston.com

Employment

Stanford University, Stanford, CA 1997-present
- Stanford Institute for Economic Policy Research
  - Deputy Director, 1999-present
  - Senior Fellow, 2012-present
  - Senior Research Scholar, 2004-2012, Research Scholar, 1997-2004
- Public Policy Program
  - Co-Director, 2013-present
  - Deputy Director, 2006-2013
- Professor of Economics, by courtesy, 2012-present
- Lecturer in Economics and Public Policy, 1997- 2012

Federal Communications Commission, Washington, DC
- Senior Economist for Transactions, 2011 (part-time while at Stanford)
- Deputy Chief Economist, 1995-1997
- Acting Chief Economist, Common Carrier Bureau, 1996
- Senior Economist, Office of Plans and Policy, 1994-1995

Law and Economics Consulting Group, Berkeley, CA
- Senior Economist, 1990-1994

Economists Incorporated, Washington, DC
- Economist/Research Associate, 1986-1988

Education

Stanford University, M.A., Ph.D., in Economics, Specialized in the fields of Industrial Organization and Public Finance. 1986, 1994.

University of California, Berkeley, A.B. in Economics with Honors. 1984.

Papers and Publications

"An Economic Analysis of the Effects of FCC Regulation on Land Mobile Radio," unpublished Ph.D. dissertation, Stanford University. 1994.

"Competition in Local Telecommunications: Implications of Unbundling for Antitrust Policy" in Brock, G., (ed.) Toward a Competitive Telecommunication Industry: Selected Papers from the 1994 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1995 (with Harris, R. and Teece, D.).

"Competition and 'Local' Communications: Innovation, Entry and Integration," *Journal of Industrial and Corporate Change*. 1995 (with Teece, D.).

"Spectrum Flexibility will Promote Competition and the Public Interest," *IEEE Communications Magazine*, December, 1995 pp 2-5. (with Hundt, R.).

"Interconnecting Interoperable Systems: The Regulators' Perspective." *Information, Infrastructure and Policy*. 1995 (with Katz, M., and Anspacher, J.).

"Everything You Need To Know About Spectrum Auctions, But Didn't Think To Ask," *Washington Telecom News*, Vol. 4, No. 5. February 5, 1996 p-5. (with Hundt, R.).

The Internet and Telecommunications Policy: Selected Papers from the 1995 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1996 (ed. with Brock, G.).

"Introduction," in Brock, G., and Rosston, G., (ed.s) (1996) The Internet and Telecommunications Policy: Selected Papers from the 1995 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1996 (with Brock, G.).

"Competition and 'Local' Communications: Innovation, Entry and Integration," in Noam, E., (ed.) The End of Territoriality in Communications: Globalism and Localism, Elsevier. 1997 (with Teece, D.).

"Using Market-Based Spectrum Policy to Promote the Public Interest," FCC Staff Paper, 1997. Also published in *Federal Communications Law Journal*, Vol. 50, No. 1. 1997 (with Steinberg, J.).

"A New Spectrum Policy: Letting the Market Work" *Radio Communication Reports*, March 3, 1997, pp 59-64.

"The Telecommunications Act Trilogy," *Media Law and Policy* . Vol V, No. 2, Winter 1997, pp 1-12.

"Interconnection and Competition Policy," *Cable TV and New Media.* Vol XV, No. 3 May, 1997, pp 1-4.

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Interconnection and The Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1997 (ed. with Waterman, D.).

"Introduction," in Waterman, D., and Rosston, G., (ed.s) (1997) Interconnection and The Internet: Selected Papers from the 1996 Telecommunications Policy Research Conference, LEA Associates, Mahwah, NJ. 1997 (with Waterman, D.).

"Comment on the Value of New Services in Telecommunications" *Brookings Papers on Microeconomic Activity--Microeconomics*, 1997.

"Universal Service Reform: An Economist's Perspective," *Cable TV and New Media.* Vol XV No. 11, January, 1998, pp 1-4.

"Alternative Paths to Broadband Deployment," *IEEE Communications Magazine*, July, 1998 pp 2-4. (with Hundt, R.).

"The High Cost of Universal Service," *CCH Power and Telecom Law*, January-February 1999 (with Wimmer, B.).

"Effects of Unbundling Proposals on Cable Investment Incentives," *The Party Line, Newsletter of the Communications Industry Committee, American Bar Association Section of Antitrust Law*, March 1999 (with Owen. B.)

"The ABC's of Universal Service: Arbitrage, Big Bucks and Competition," *Hastings Law Journal*, Vol. 50, No. 6, August 1999 (with Wimmer, B.).

"An Insiders' View of FCC Spectrum Auctions," *Journal of Regulatory Economics*, Vol 17, No. 3, 253-289, 2000 (with Kwerel, E.).

"Winners and Losers from the Universal Service Subsidy Battle," in Vogelsang, I. and Compaine, B. (ed.s) The Internet Upheaval: Raising Questions, Seeking Answers in Communications Policy, Cambridge, MA: MIT Press, 2000 (with Wimmer, B.).

"The Telecommunications Sector" in Kessides, I. (ed.) Hungary: A Regulatory and Structural Review of Selected Infrastructure Sectors, World Bank Technical Paper No. 474, Washington, DC, June 2000.

"The 'State' of Universal Service," *Information, Economics and Policy*, Vol. 12, No. 3. 261-283, September 2000 (with Wimmer, B.).

"From C to Shining C: Competition and Cross-Subsidy in Communications," in Compaine, B. and Greenstein, S. (ed.s) Communications Policy in Transition: The Internet and Beyond. Selected Papers from the 2000 Telecommunications Policy Research Conference, Cambridge, MA: MIT Press, 2001 (with Wimmer, B.).

"Universal Service, Competition and Economic Growth: The Case of the Hidden Subsidy," April 2001 in Dossani, R. (ed.) Reforms in the Telecommunications Sector in India, Greenwood Press (with Wimmer, B.).

"The Digital Divide: Definitions, Measurement, and Policy Issues," in Bridging the Digital Divide, California Council on Science and Technology, May 2001 (with Noll, R., Older-Aguilar, D. and Ross, R.).

"The Long and Winding Road: The FCC Paves the Path with Good Intentions," *Telecommunications Policy*, Vol. 27, No. 7. 501-515, August 2003.

"Spectrum Allocation and the Internet," Cyber Policy and Economics in an Internet Age, Lehr W. and Pupillo, L. (ed.s) , Kluwer Academic Publishers, New York, 2002. (with Owen. B.).

"The Economics of the Supreme Court's Decision On Forward Looking Costs," *Review of Network Economics*, September, 2002 Vol. 1, No. 2, September 2002 (with Noll, R.)

"Local Broadband Access: Primum Non Nocere or Primum Processi? A Property Rights Approach," in Net Neutrality or Net Neutering: Should Broadband Internet Services be Regulated, Lenard, T. and May, R. (ed.s) Springer: New York, 2006 (with Owen, B.)

"A Losing Battle for All Sides: The Sad State of Spectrum Management" *Federal Communications Law Journal*, Vol. 56 No. 2, March 2004.

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"Local Telephone Rate Structures Before and After the Act," *Information, Economics and Policy* , Vol. 17, No. 1. pp 13-34, January 2005 (with Wimmer, B.).

"Communications Policy for 2006 and Beyond" *Federal Communications Law Journal*, Vol. 58 No. 1, 2006 (with Hundt, R.).

"The Effect of Private Interests on Regulated Retail and Wholesale Prices," *Journal of Law and Economics*, Vol. 51, No 3. August 2008 (with Savage, S. and Wimmer, B).

"The Rise and Fall of Third-party High-speed Access," *Information, Economics and Policy* Vol. 21 No. 1 February 2009 pp 21-33.

"Low-Income Demand for Local Telephone Service: Effects of Lifeline and Linkup," Stanford Institute for Economic Policy Research Discussion Paper No. 07-32 (with Ackerberg, D., Riordan, M. and Wimmer, B.)

"An Antitrust Analysis of the Case for Wireless Net Neutrality," (with Topper, M.) *Information, Economics and Policy* Vol. 22 No. 1, March 2010 pp 103-119.

"Household Demand for Broadband Internet Service in 2010," *B. E. Journal of Economic Analysis & Policy: Advances,* Vol 10, No 1. August 2010. (with Savage, S. and Waldman, D.).

"The Path to Universal Broadband: Why We Should Grant Low-Income Subsidies and Use Experiments and Auctions to Determine the Specifics," *The Economists' Voice*, Vol 8, Iss. 1. 2011. (with Wallsten, S.).

"Using Spectrum Auctions to Enhance Competition in Wireless Services" *Journal of Law and Economics*, November 2011. (with Cramton, P., Kwerel, E. and Skrzypacz, A.).

"Economic Principles for *Ex Ante* Rules for Radio" *Journal on Telecommunications and High Technology Law Vol 9. No 2.* Spring 2011. (with Wallsten, S.).

"The Effect of Network Unbundling on Retail Prices: Evidence from the Telecommunications Act of 1996," *Journal of Law and Economics,* Vol 56, No. 2. May 2013. (with Savage, S. and Wimmer, B).

"The Proposed Merger of AT&T and T-Mobile: Rethinking Possible (2011)," in Kwoka, J. and White, L (eds.) The Antitrust Revolution, Sixth Edition, Oxford University Press. (with DeGraba, P.)

"Articulating A Modern Approach to FCC Competition Policy," *Federal Communications Law Journal,* Vol 66, No. 1. December 2013. (with Hundt, R.).

"Increasing Wireless Value: Technology, Spectrum, and Incentives," forthcoming, *Journal on Telecommunications and High Technology Law.*

"The Broadband Stimulus: A Rural Boondoggle and Missed Opportunity," *I/S Journal: A Journal of Law and Policy for the Information Society.* Vol 9, No. 3 Winter 2014. (with Wallsten, S.).

"Technological and Regulatory Change in the Communications Industry," forthcoming in Payson, S. (ed.) Public Economics in the United States: How the Federal Government Analyzes and Influences the Economy, ABC-LIO Press.

Policy Briefs and Opinion Pieces

"On the Record: Former FCC Economist Backs Universal Service Alternative," *Telecommunications Reports*, Vol. 63, No. 51. December 22, 1997, pp 51-53.

"The Future of Wireless," Stanford Institute for Economic Policy Research *Policy Brief*, May 2001.

"Politics Lands Bush in High Price Lane," *Los Angeles Times*, June 15, 2001.

"Antitrust Implications of EchoStar-DirecTV Proposed Merger," Stanford Institute for Economic Policy Research *Policy Brief*, November 2001.

"Supreme Court Decision Regarding the FCC Implementation of the Telecommunications Act of 1996," Stanford Institute for Economic Policy Research *Policy Brief*, May 2002 (with Noll, R.).

"The FCC Spectrum Policy Task Force Report: A Very Small Step,"

"The FCC and Local Competition," Stanford Institute for Economic Policy Research *Policy Brief*, April 2003.

"Why Airwaves Should be Deregulated," *CNET.com*, February 11, 2004 (with T. Hazlett).

"Broadband Users, Watch your Wallets," *CNET.com*, April 27, 2004.

"The Next Phase of the Electronic Highway: Universal Broadband -- Big bucks beyond the vision" *San Francisco Chronicle*, April 30, 2004.

"Cheap Net Phones Face the Threat of a Tax Hangup," *San Jose Mercury News*, June 17, 2004. (with Hahn, R. and Wallsten, S.)

"Judging the Google IPO," *CNET.com* August 17, 2004.

"For Whom the Bridge Tolls" *San Francisco Chronicle*, August 27, 2004.

"Writing the Right Ending to the MCI Saga," *CNET.com* April 5, 2005.

"Traffic Congestion, Congestion Pricing and the Price of Using California's Freeways," Stanford Institute for Economic Policy Research *Policy Brief*, April 2005 (with Flamm, B.).

"Humpty-Dumpty? Competitive Effects of the AT&T – BellSouth Merger," Stanford Institute for Economic Policy Research *Policy Brief*, March 2006.

"Free Internet access in S.F. not the best deal for consumers," *San Jose Mercury News*, March 12, 2006.

"Quit fooling with wireless-spectrum auction," *CNET.com*, January 23, 2008

"Testimony of Gregory L. Rosston" at the Federal Communications Commission En Banc Hearing on Broadband Network Management Practices, Stanford University, April 17, 2008

"Saving the digital transition," *CNET.com*, January 24, 2009 (with Scott Wallsten).

"Using Procurement Auctions to Allocate Broadband Stimulus Grants" Stanford Institute for Economic Policy Research *Policy Brief*, May 2009 (with Paul Milgrom and Andrzej Skrzypacz)

"Fixing Detroit's Bailout Blues" CBSNews.com, May 29, 2009

"The National Broadband Plan," Stanford Institute for Economic Policy Research *Policy Brief*, February, 2010.

"Household Demand for Broadband Internet Service," *Communications of the ACM*, February, 2011 Vol. 54, No. 2. (with Scott Savage and Donald Waldman).

"Competitive Implications of the Proposed Acquisition of T-Mobile by AT&T Mobility" Stanford Institute for Economic Policy Research *Policy Brief*, March 2011 (with Roger Noll).

"Economic and Business Dimensions: Incentive Auctions," *Communications of the ACM*, February 2012, Vol. 55, No. 2.

Other Activities

Editorial/Committees

President's Council of Advisors on Science and Technology Working Group on Spectrum, 2011-2012.
Department of Commerce Spectrum Management Advisory Committee, Co-Chair, 2011-2014
Department of Commerce Spectrum Management Advisory Committee, Member, 2010-2014
Telecommunications Policy Research Conference Board, 2009-2012
Member, Obama Presidential Transition Team, 2008
Co-chair, Obama for President, Economy, Globalization, and Trade Committee, 2008
Associate Editor, *Information, Economics and Policy*, 2008-present
Referee for various academic journals.
Telecommunications Policy Research Conference, Program Committee 2002-2004.
Bay Area Economic Profile Academic Review Panel, 2003-2004.
National Research Council Committee on *Wireless Technology Prospects and Policy*, 2003-2011

Testimony and Submissions

FCC Economist Panel on the Economics of Interconnection, May, 1996.
FCC Economist Panel on the Economics of RBOC Entry under §271, July, 1996.
FCC Economist Panel on Competitive Bidding for USF, March, 1997.
Consultant for the World Bank on Telecommunications Policy in Hungary, 1998.
FCC Academic Expert Panel on "A New FCC for the 21st Century," June 1999.
FCC Academic Expert Panel on AT&T—MediaOne Merger, February, 2000.
Principal co-author of 37 Concerned Economists submission on "Promoting Efficient use of

Spectrum Through Elimination of Barriers to the Development of Secondary Markets," February 2001
FCC Panel on Wireless Competition, February 2002.
FCC Workshop on Spectrum Policy, July 2002.
San Francisco Telecom Commission on Cable Competition, January 2003.
U.S. Senate Commerce Committee on Spectrum Policy, March 2003.
California State Senate Committee on Banking, Commerce and International Trade on the Economic Effects of Media Consolidation, March 2003.
San Francisco City Board of Supervisors Land Use Committee on Cable Competition, July 2004.
GAO Panel on Spectrum Allocation and Assignment, August, 2005.
Comments and Reply Comments (with Paul Milgrom) on Auction Rules for Advanced Wireless Services, February 2006
FTC Panel on Network Neutrality, February 2007.
FCC *En Banc* Hearing on Network Management, April 2008.
Principal co-author of 71 Concerned Economists submission on "Using Procurement Auctions to Allocate Broadband Stimulus Grants" Submitted to the National Telecommunications Information Agency (NTIA) and Rural Utilities Service (RUS), April, 2009
FCC Broadband Task Force, Workshop on "Benchmarks" September 2009
U.S. House Commerce Subcommittee on Communications, Technology and the Internet, Universal Service hearings, November 2009
FCC Video Relay Service Reform Workshop, December, 2009
FCC Roundtable on Experiments for Universal Service, 2010
Principal co-author of Letter from 112 Economists to President Obama on Spectrum Auctions and Repurposing Spectrum, April, 2011
FCC Universal Service Reform Workshop, April, 2011

Other
Stanford Federal Credit Union, Advisory Board, 2012-present
Sustainable Conservation, Advisory Board, 2007-present
Nepalese Youth Opportunity Fund, Board, 2012-present, Advisory Board, 2007-2012
Boards and Advisory Boards for private companies

Awards
Chairman's Distinguished Service Award, FCC, 1997.
University of California, Brad King Award for Young Alumni Service, 1994.
National Performance Review Hammer Award for Reinventing Government, 1994.

APPENDIX 2

MICHAEL D. TOPPER
Senior Vice President

Cornerstone Research
1000 El Camino Real • Menlo Park, CA 94025
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mtopper@cornerstone.com

ACADEMIC BACKGROUND

1991 **Stanford University** Stanford, California
Ph.D., Economics, 1991; M.A., Economics, 1989
Specialized in labor economics, public finance, industrial organization and econometrics.

1982 **Stanford University** Stanford, California
M.S., Engineering-Economic Systems

1981 **University of Virginia** Charlottesville, Virginia
B.S., Systems Engineering, with Highest Distinction
Member, Tau Beta Pi

PROFESSIONAL EXPERIENCE

1994 – Present **Cornerstone Research, Inc.** Menlo Park, California
Senior Vice President (Partner)
Head, Menlo Park Office
Co-Head, Antitrust & Competition Practice
Member, Executive Committee
Member, Board of Directors

Manage and conduct economic analysis for complex business litigation, regulatory and public policy matters, with specialization in antitrust, intellectual property, product misrepresentation, class certification and breach of contract.

Industry expertise includes telecommunications, media, Internet, information technology, energy, transportation, and financial services.

Expertise includes econometrics, analysis of large datasets and consumer survey design and analysis.

Services to clients include expert testimony, identifying experts, outlining economic and financial issues, researching and analyzing data, managing project teams, supporting experts in the preparation of expert reports and testimony, and analyzing opposing expert reports and testimony.

Selected Antitrust and Competition Experience

DOJ, FTC, FCC and EC regulatory review of mergers, acquisitions and joint ventures, including Comcast – NBC Universal, Google – ITA Software, Google – DoubleClick, InBev – Anheuser Busch, Cingular – AT&T Wireless, and EchoStar – DirecTV.

PROFESSIONAL EXPERIENCE (CONT.)

Allegations of price fixing and collusion in various industries, including airlines, automobiles, chemicals, gasoline, media, consumer products and industrial products. Analysis includes responding to DOJ investigations, class certification, liability and damages.

Allegations of monopolization and attempted monopolization in various industries, including telecommunications, food products, consumer products, and industrial products. Analysis includes class certification, liability and damages.

Matters involving allegations of unfair competition and unfair trade practices.

Regulatory matters, including matters before the Federal Communications Commission related to network neutrality, special access, wireless competition, and spectrum policy, and matters before the Copyright Royalty Board.

Selected IP Experience

Patent infringement matters, including work on patent validity, damages, patent misuse and antitrust counterclaims.

Copyright infringement matters, including matters involving digital media, computer software, and store design.

Trademark infringement matters, including matters involving information technology, Internet domain names, and consumer products.

Analysis of licensing practices, licensing terms and royalty rates in various industries.

Other Selected Case Experience

Allegations of product liability, product misrepresentation and fraud in various industries, including automobiles, computer hardware, computer software, and home products. Analysis includes class certification, liability and damages.

Breach of contract, breach of fiduciary duty, and false advertising matters.

Allegations of discrimination, breach of contract, and other causes of action in the mortgage lending industry.

Economic analysis of industry practices on behalf of defendant in False Claims Act case.

Economic analysis of settlement allocations in environmental litigation.

Analysis of terms and conditions in merger agreements.

1993 – 2003 **Stanford University** Stanford, California

Lecturer in Economics

Taught courses in microeconomics and antitrust policy for the Department of Economics.

1991 – 1994 **College of William and Mary** Williamsburg, Virginia

Assistant Professor of Economics

Conducted academic research on the economics of education and training programs. Developed new courses in labor and development economics. Helped launch the new graduate program in public policy. Taught core courses in economics and statistics.

Supervised graduate and undergraduate students.

PROFESSIONAL EXPERIENCE (CONT.)

Summer 1986 **Rand Corporation** Santa Monica, California
Summer Research Intern, Telecommunications Policy Group
Developed models for estimating the demand for telecommunications services.

Summer 1985 **International Institute for Applied Systems Analysis (IIASA)** Vienna, Austria
Summer Research Intern, Systems Modeling Group
Programming and analysis for dynamic simulation models.

1981 – 1984 **Bell Laboratories/Bell Communications Research** Holmdel, New Jersey
Systems Engineer
Conducted cost/benefit, technical feasibility and economic cost analyses for advanced switching services based on caller ID.

PUBLICATIONS

"Google-ITA: Creating a New Flight Search Competitor (2011)," With Stanley Watt and Jingming Marshall Yan, In John E. Kwoka and Lawrence J. White, *The Antitrust Revolution: Economics, Competition and Policy (Sixth Edition)*, Oxford University Press, 2013.

"An Antitrust Analysis of the Case for Wireless Network Neutrality," with Gregory L. Rosston, *Information Economics and Policy*, 22 (1), pp. 103-119, 2010.

"3G Standards Policy: Government Shouldn't Intervene in Debate," *Wireless Week*, December 21, 1998.

"Student Loans, Debt Burdens, and Choice of Major," *New Directions for Higher Education*, 85, pp. 115–124, 1994.

"The Impact of the Demographic Transition on Government Spending," with John Shoven and David Wise, In David Wise, ed., *Economics of Aging*, University of Chicago Press, 1994.

"The Cost of Capital in Canada, the U.S. and Japan," with John Shoven, In John Shoven and John Whalley, eds. *Canada-U.S. Tax Policy Issues*, University of Chicago Press, 1992.

WORKING PAPERS

"Economic White Paper on National Third Generation Wireless Standards," with Joseph Farrell, *Mimeo*, November, 1998.

CONFERENCE PARTICIPATION, PANEL PARTICIPATION AND INVITED TALKS

"Modernization of Antitrust Law," Stanford University Conference, May 29–30, 2008, Panelist/Discussant.

"Third Generation Wireless Standards Policy," Presentations in Washington D.C., December 1998.

"Higher Education and the American Worker," Christopher Wren Society, Williamsburg, VA, April 1993.

"The Impact of the Demographic Transition on Government Spending on Individuals," with John Shoven and David Wise, NBER Conference on the Economics of Aging, July 1992.

CONFERENCE PARTICIPATION, PANEL PARTICIPATION AND INVITED TALKS (CONT.)

"Ethnic Differences in Schooling Attainment in Malaysia—A Difference in Differences Approach," Paper presented at Southeast Asian Educators Workshop, Stanford University, July 1991.

"The Cost of Capital in Canada, the U.S. and Japan," with John Shoven, NBER Conference on Canada–U.S. Tax Comparisons, July 1990.

EXPERT TESTIMONY

In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses or Transfer Control of Licensees, Federal Communications Commission, MB Docket No. 10-56, Expert Report on behalf of Comcast Corporation and General Electric Company, with Gregory L. Rosston, July 2010.

In the Matter of Preserving the Open Internet, Federal Communications Commission, GN Docket 09-191, Reply Declaration on behalf of Verizon and Verizon Wireless, April 2010.

In the Matter of Special Access Rates for Price Cap Local Exchange Carrier, Federal Communications Commission, WC Docket No. 05-25, RM 10593, Reply Declaration on behalf of Verizon, February 2010.

In the Matter of Special Access Rates for Price Cap Local Exchange Carrier, Federal Communications Commission, WC Docket No. 05-25, RM 10593, Declaration on behalf of Verizon, January 2010.

In the Matter of Preserving the Open Internet, Federal Communications Commission, GN Docket 09-191, Declaration on behalf of Verizon and Verizon Wireless, January 2010.

In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds, Copyright Royalty Board, Docket No. 2007-3 CRB CD 2004-2005. Filed Testimony on behalf of National Association of Broadcasters, December 2009.

Mobile Wireless Competition Notice of Inquiry, Federal Communications Commission, WT Docket No. 09-66, Declaration on behalf of Verizon Wireless, September 2009.

FELLOWSHIP AND AWARDS

Center for Economic Policy Research, Stanford University
Visiting Scholar, 1993–1994

Department of Economics, Stanford University
Distinguished Teaching Award, 1989

Rand Corporation
Graduate Student Summer Fellowship, 1986

International Institute for Applied Systems Analysis
American Academy of Sciences Young Scientists' Summer Program Fellowship, 1985

Bell Laboratories
Graduate Fellowship, 1981–1982

EXHIBIT 6

IMPLICATIONS OF THE COMCAST/TIME WARNER CABLE TRANSACTION FOR BROADBAND COMPETITION

Mark A. Israel

April 8, 2014

CONTENTS

I. INTRODUCTION

A. QUALIFICATIONS

1. I am Mark A. Israel. I am an Executive Vice President at Compass Lexecon, an economic consulting firm, as well as Managing Director of Compass Lexecon's Washington, D.C. office. From August 2000 to June 2006, I served as a full-time member of the faculty at Kellogg School of Management, Northwestern University. I received my Ph.D. in economics from Stanford University in 2001.

2. I specialize in the economics of industrial organization—which is the study of markets and competition, including the study of antitrust and regulatory issues—as well as applied econometrics. At Kellogg and Stanford, I taught graduate-level courses covering topics including business strategy, industrial organization economics, microeconomic theory, and econometrics. My research has been published in leading economics journals including the *American Economic Review*, the *Rand Journal of Economics*, the *Review of Industrial Organization*, the *Review of Network Economics*, and *Information Economics and Policy*.

3. I have been a consultant at Compass Lexecon since 2006. My consulting work has focused on the application of theoretical models and econometric methods to the analysis of mergers, antitrust issues including a wide variety of single-firm and multi-firm conduct, class certification, and damages estimation.

4. My academic and consulting work has involved a range of industries, including broadcast and cable television, wired and wireless telecommunications, broadband services, airlines, railroads, consumer beverages, financial markets, insurance,

pharmaceuticals, and publishing. I have authored expert reports, declarations, and affidavits that have been submitted to and cited by government agencies and federal courts on behalf of various clients. Among these, I have submitted declarations to the Federal Communications Commission ("Commission" or "FCC") regarding competitive issues in broadband, video distribution, programming, and telecommunications and the Commission has cited to these declarations. I have also co-authored a peer-reviewed paper analyzing the evolution of peering and other Internet interconnection agreements.[1]

B. BRIEF OVERVIEW OF PARTIES AND TRANSACTION

1. Parties

5. Comcast Corporation ("Comcast") is a media and technology company with two primary businesses, Comcast Cable and NBCUniversal.[2] Comcast Cable offers video, broadband (or synonymously high-speed data ("HSD")), and digital voice services in 39 states and the District of Columbia. Comcast owns and operates a large fiber-based network. It serves approximately 21.7 million video and 20.7 million broadband

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[1] Stanley M. Besen and Mark A. Israel (2013), "The Evolution of Internet Interconnection from Hierarchy to 'Mesh': Implications for Government Regulation," *Information Economics and Policy*, 25: 235-245 (hereinafter *Besen and Israel (2013)*.)

[2] *See* Description of Transaction, Public Interest Showing, and Related Demonstrations, § II, for further details on Comcast's lines of business.

In 2011, Comcast formed a joint venture with General Electric consisting of NBCUniversal's businesses and Comcast's cable networks, regional sports networks, and certain digital properties. In 2013, Comcast acquired General Electric's entire 49 percent common equity state in the NBCUniversal joint venture.

customers, including both residential and business customers.[3] NBCUniversal owns and operates a portfolio of news and entertainment cable television networks, broadcast television stations, digital media properties, a motion picture company, and theme parks.

6. Time Warner Cable ("TWC") offers video, broadband, and digital voice services in 31 states.[4] It serves approximately 11.4 million video and 11.6 million broadband customers, including both residential and business customers.[5] In addition, TWC owns interests in certain regional sports networks ("RSNs"), local news channels, and two national programming networks.

2. Transaction

7. Comcast has entered into an agreement with TWC through which Comcast will acquire 100 percent of TWC's equity in a stock-for-stock deal (the "proposed transaction"). The proposed transaction is a straightforward acquisition of TWC, and Comcast plans to retain both its own and TWC's existing assets, subject to certain

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[3] 2013 Comcast Corp. SEC Form 10-K Annual Report (hereinafter *Comcast 2013 10-K*), 3.

[4] *See* Description of Transaction, Public Interest Showing, and Related Demonstrations, § II, for further details on TWC's lines of business.

[5] 2013 Time Warner Cable Inc. SEC Form 10-K Annual Report (hereinafter *TWC 2013 10-K*), 38.

divestitures.[6] In what follows, I refer to the newly created entity as "the combined firm" or, where the meaning is clear, simply as "Comcast."

C. ASSIGNMENT AND SUMMARY OF CONCLUSIONS

1. Assignment

8. I have been asked by counsel for Comcast to evaluate the effects of the proposed transaction on competition in the provision of broadband services to residential and business customers. I have also been asked to assess the extent to which the proposed transaction will generate consumer benefits, again focused on the broadband segment. Combining my findings from these two assignments, I have been asked to assess, whether, on balance, the effect of the transaction in the broadband segment is expected to be pro-competitive, pro-consumer, and in the public interest.

9. For ease of exposition, I do not qualify all of my conclusions about competitive effects and benefits from the transaction with the words "broadband' or "broadband-related," but unless otherwise explicitly noted, all conclusions should be taken as referring to effects on broadband-related services.

10. My ongoing investigation of the issues in this matter has included interviews with company personnel, and extensive analysis of data and documents from the two

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[6] Comcast Corporation, Press Release, "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, *site visited* March 27, 2014.

transacting parties and a variety of third-party and public sources. The conclusions in this Declaration are based on this evidence and reflect the status of my investigation to date.

11. My assessment of the transaction is complementary to the assessment contained in the report of Drs. Gregory Rosston and Michael Topper, which I understand is primarily focused on the overall efficiencies and associated consumer and competitive benefits flowing from the transaction in various product markets, including a specific focus on competitive effects and consumer benefits in the *video segment*. I leave evaluation of issues primarily related to Comcast's traditional video business to Drs. Rosston and Topper.

2. Summary of conclusions

12. Based on my analysis of the transaction, I have reached the following primary conclusion: *Given (i) the lack of any valid competitive concerns and (ii) the substantial consumer benefits, the proposed transaction—as it relates to the provision of broadband services in particular—is pro-consumer, pro-competitive, and in the public interest.*

13. This primary conclusion is based on two main supporting conclusions:

- *The proposed transaction will not harm broadband competition*. Comcast and TWC do not compete with one another for broadband customers. The proposed transaction is neither a horizontal nor a vertical transaction in the broadband segment. As such, theories of competitive harm raised by opponents of the transaction are likely to depend—implicitly or explicitly—on the *size* of the combined firm. However, simple calculations of size do not substitute for rigorous competitive analysis. Neither the facts of this case nor economic theory provides a basis to conclude that greater size—based on a combination of firms

that do not compete in the same local markets—leads to greater bargaining power or competitive harm.

- *The increased scale created by combining the distinct regional footprints of two broadband providers will generate substantial pro-competitive consumer benefits*. In a rapidly advancing industry with large fixed costs (or at least costs that do not increase proportionally with output)—particularly an industry with many current or potential business customers that operate regionally or nationally—greater scale incentivizes greater investment and innovation. The ability to generate revenues from an investment across the combined Comcast and TWC footprints increases the net present value of investment opportunities and thus incentivizes the combined firm to make investments that would not otherwise have been sufficiently profitable. Although the cable industry has a long history of attempting to achieve such scale benefits via partnerships and collaborations, these attempts have frequently failed or stalled, and thus the proposed transaction helps to overcome collaboration problems that have hampered industry initiatives for years.

14. These primary and supporting conclusions are based on several detailed findings, developed in the remainder of this Declaration.

- *The transaction leads to no horizontal competitive concerns for residential or business broadband customers:*
    - The transaction will not reduce the number of broadband options available to residential or business customers. The broadband services sold by Comcast and TWC are not substitutes and, thus, horizontal competitive concerns do not arise for either residential or business customers of broadband services.
    - Attempts to define a national market for broadband services do not change the conclusion of no horizontal harm. Comcast and TWC are not substitutes for consumers regardless of how the market is defined and thus, unlike in many

other transactions, alternative market definitions do not affect the conclusion of no competitive harm.

- *The transaction leads to no competitive concerns based on changes in bargaining power vis-à-vis edge providers or other content providers:*[7]
  - *The characteristics of the Internet substantially limit Internet Service Providers' ("ISPs") power vis-à-vis edge providers:*
    - The products and services offered by edge providers stimulate demand for broadband services, creating an incentive for Comcast to support the development of such services, and creating a source of benefit to Comcast from competition between edge providers to produce services that are more appealing to consumers.
    - Edge providers can access customers through many alternative broadband providers. The combined firm will in no way be a monopolist for broadband services. There are many other broadband alternatives, which already have a sizable share, and to which consumers could switch (perhaps having been incentivized to do so by other broadband providers and/or edge providers) if the combined firm sought to restrict access to competitively relevant edge services.
    - The array of Internet interconnection alternatives makes it infeasible for the combined firm (or any ISP) to restrict access to

[7] The term "edge provider" refers to a firm that uses the Internet to deliver content, services, and applications to end-consumers. Examples include Amazon, Wikipedia, Google, and Netflix, among many others.

edge providers without substantially degrading its own broadband service. To prevent a given edge provider from accessing its network, an ISP would likely have to restrict substantially its connectivity with the broader Internet. Such restrictions would ultimately result in substantial harm to the ISP's quality, reputation, and broadband profitability.

- *There is no economic basis to conclude that the transaction will shift bargaining power in a way that will prevent edge providers from competing effectively or harm consumers or reduce welfare:*

  - Given that Comcast and TWC do not provide substitute products or services, there is no economic basis to conclude that the transaction will increase the combined firm's bargaining power relative to edge providers. The economic bargaining models that apply to cases like this, with no horizontal substitution between the merging parties, yield no clear linkage between a merger on one side of the negotiation and a shift in bargaining power toward that side. To the contrary, the effect on bargaining power of a merger with no horizontal substitution can actually go either way. As one specific example, the established literature shows that if a buyer becomes "pivotal" for a supplier's survival, that buyer may end up with *less* incentive and ability to negotiate aggressively against that supplier. For example, a rational buyer will recognize that, given its pivotal role, aggressive negotiation may harm the supplier and thus lessen its ability to produce high-quality inputs to the buyer's own product. And this logic about the effect of mergers on bargaining power holds no matter which way the net payments flow in a particular negotiation (that is, regardless of whether Comcast acts as the "buyer" or "seller" in a particular deal).

  - Unlike situations involving monopoly or monopsony power, even if the transaction results in a change in relative *bargaining power*, this may simply result in a change in the division of surplus, with no corresponding reduction in output or total welfare and thus no harm to competition.

- *The increased scale created by the merger will incentivize the combined firm to undertake investments and to pursue innovations that would not otherwise be profitable enough to pursue.* Comcast's and TWC's ordinary-course-of-business plans and models reflect the fact that greater scale increases the profitability of investments involving fixed costs and thus that greater scale enables additional innovations to be brought to the marketplace profitably. Indeed, Comcast's history of innovations and its high-quality network are direct outcomes of these scale-based benefits. The transaction allows such scale-based benefits to be expanded and improved upon, by leveraging the combined footprints of Comcast and TWC to increase economies of scale and scope.

- *The long history of unsuccessful attempts at collaboration among cable operators illustrates: (i) recognition by cable operators that additional scale can support additional investment and innovation and (ii) the extreme difficulty in effectively achieving such scale via partnership.* The transaction helps to overcome the coordination difficulties that have long plagued efforts at collaboration among cable operators.

- *The combined firm will become a more effective competitor for business customers, thus more successfully penetrating a segment of the industry long dominated by the traditional telecom providers (the "incumbent local exchange carriers" or "incumbent telcos").* This conclusion follows both because the combined firm will be able to provide the more tightly integrated services that business customers demand and because the improved economics created by serving more of any given business customer's operations from within footprint (*e.g.*, eliminating the double-marginalization problem associated with outsourcing

out-of-footprint services) will enable the combined firm to bid more aggressively for and effectively service more business service opportunities.

- *The transaction will lead to improvements in broadband speed and reliability, resulting from both increased investment incentivized by greater scale and the integration of Comcast's and TWC's capabilities. These improvements will benefit several groups including: (i) the combined firm's broadband customers; (ii) edge providers, whose services benefit from a high-quality broadband network, and (iii) other ISPs' broadband customers, due to competitive reactions engendered by the improvement of the Comcast network and ISPs' efforts to take advantage of these improved edge services*. This "virtuous circle"—in which faster broadband speeds lead to improved edge services, which lead to increased broadband usage, and which motivate further investment in faster broadband speeds by all providers, and so on—has long been recognized by the Commission. And it is consistent with the economics of "two-sided" or "platform" markets, in which an improved platform benefits both sides of the market (end consumers and edge providers), and leads to mutually reinforcing changes in behavior by both sides to make full use of the improved platform.

- *The improvements in the quality and speed of the combined firm's broadband network flow from a variety of sources*:

  - TWC's customers will benefit from Comcast's proven track record of investment in broadband quality and its experience in implementing those investments. Comcast's track record is apparent in the substantial gap between the broadband speeds obtained by customers on the Comcast network relative to the TWC network.

  - Customers of the combined firm will benefit from Comcast's commitment, plans, and incentives to (i) upgrade all TWC systems to digital technology, (ii) facilitate the optimal use of DOCSIS 3.0, by making available more QAM channels for Internet service and deploying Converged Cable

Access Platform-enabled ("CCAP-enabled") Cable Modem Termination Systems (CMTS) and faster modems, and (iii) deploy DOCSIS 3.1 in the near future, each of which leads to improved broadband performance.

- With respect to *wired networks*, customers of the combined firm will benefit from increased investment in access networks, as well as metro, regional, and national core networks. Such investments are motivated by a combination of increased opportunities to serve business accounts, cross-regional economies of scope in regional core networks, and economies of scale in investing in the national core network. As one concrete example, incremental expansion of the combined firm's "plant" to serve more business customers—*e.g.*, expansion of the fiber backbone to reach more sites—will increase the overall capacity of the combined firm's network to the benefit of current and future business and residential customers. When Comcast or TWC build out to a new location, they generally do so with sufficient fiber capacity to serve future expansion opportunities because the cost of including extra fiber is low relative to the other costs associated with building out the network. All Comcast customers in the area can benefit from this additional capacity.

- With respect to *wireless access networks*, customers of the combined firm will benefit from a unified Wi-Fi strategy yielding expanded and improved Wi-Fi offerings, including expanded and accelerated rollout of new generations of Wi-Fi gateways and a denser grid of Wi-Fi hotspots. These expanded Wi-Fi offerings may potentially, over the longer term, be part of a strategy to use the combined firm's grid of Wi-Fi hotspots as a launching point for a national "Wi-Fi first" mobile wireless service.

- With respect to *home networks*, customers of the combined network will likely benefit from increased investments in home network technologies made profitable by the combined firm's increased scale, including tools to enable consumers to manage all devices on the household's broadband

network. TWC customers will also benefit from the faster rollout of Comcast's state-of-the-art routers and modems.

15. The remainder of this Declaration develops each of these points in more detail. Section II explains why the transaction will not result in competitive harm. Section III explains the economic logic for the pro-competitive consumer benefits from the transaction. Section IV presents specific examples of likely benefits to business and residential customers and edge providers. Section V concludes.

II. THE PROPOSED TRANSACTION WILL NOT HARM COMPETITION

16. In this section, I demonstrate that a fact-based review of the transaction, guided by fundamental economic principles, demonstrates that the proposed transaction will not harm competition.

A. THE PROPOSED TRANSACTION WILL LEAD TO NO HORIZONTAL HARMS TO COMPETITION

1. Overview

17. In some circumstances, particularly where customers view the products offered by merging firms as close substitutes for one another, a merger may raise horizontal competitive concerns. Such concerns arise when mergers combine close substitutes under common ownership because, in the event of a price increase (or reduction in quality), the combined firm would recapture the profits on sales lost to the merger partner's products,

whereas those sales would have been lost to a competitor prior to the merger. Absent mitigating factors such as cost efficiencies, such diversion generally creates at least some upward pricing pressure.[8]

18. Such horizontal concerns *do not* arise in this transaction. This conclusion follows for one simple reason: The products and services offered by Comcast and TWC are not substitutes for one another because Comcast and TWC do not operate in the same geographic areas.[9] The transaction will not reduce the number of broadband providers available to any individual customer. Consequently, traditional antitrust analysis of horizontal merger effects, which focuses on a reduction in the number of choices available to consumers within a well-defined antitrust market (or, more generally, an increase in the concentration within an antitrust market), does not apply to this transaction. No consumer facing a price increase or quality decrease by one merging

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[8] U.S. Department of Justice and Federal Trade Commission, "Horizontal Merger Guidelines," August 19, 2010 (hereinafter *Horizontal Merger Guidelines*), § 6.

The source of upward pricing pressure described in this paragraph is commonly referred to as "unilateral effects." An alternative theory, known as "coordinated effects," rests on the idea that eliminating one competitor may make it easier for the remaining firms to coordinate to set higher prices. Like unilateral effects, the coordinated effects theory rests on the effects of reducing the number of firms that compete in a given antitrust market. (*Horizontal Merger Guidelines*, § 7.)

[9] More precisely, I understand that a very small number of Comcast and TWC residential and business broadband customers reside in zip codes that are served by both cable operators. For ease of exposition, in the remainder of this Declaration, when I refer to the lack of competitive overlap, such references incorporate these negligible overlaps.

party could choose to divert to the other merging party (short of moving to a new area), meaning the proposed transaction raises none of the standard horizontal concerns.[10]

2. No competitive harm to residential broadband customers

19. The transaction will not reduce the number of choices available to residential broadband customers. Post-transaction, residential consumers will be able to choose from the exact same number of broadband providers as they can today.[11] Consequently, the transaction creates no horizontal incentives for the combined firm to raise prices or reduce quality to residential consumers relative to the stand-alone firms.

20. In an attempt to find harms to residential broadband customers, commenters may attempt to define a "national market" for residential broadband services and claim that the transaction increases concentration in such a "market," including claims that the combined firm will have a large share in this alleged national market.[12] Such claims are not grounded in any sound economic theory and provide no valid support for horizontal

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10 *Horizontal Merger Guidelines*, § 6.

11 In Section II.B.1(b), I quantify the state of broadband competition within the footprint of the combined firm.

12 *See, e.g.*, Craig Aaron, "Comcast + Time Warner Cable = Disaster," Free Press, February 13, 2014, *available at* http://www.freepress.net/blog/2014/02/13/comcast-time-warner-cable-disaster, *site visited* March 27, 2014; 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 27, 2014. *See also*, Memorandum Opinion and Order, *In the Matter of Applications for Consent to the Assignment and/or Transfer of Licenses*, MB Docket No. 05-192 (2006) (hereinafter *Adelphia Order*), ¶ 77.

harms from the proposed transaction.

21. As the Commission has long held, there is no national market for broadband services. In previous proceedings, the Commission has correctly concluded that broadband providers compete in a local rather than a broader regional or national market:[13]

> [T]he relevant geographic markets for residential high-speed Internet access services are local, because a consumer's choice of broadband Internet access provider is limited to those companies that offer high-speed Internet access services in his or her area.

Defining a national geographic market would suggest that Comcast and TWC are direct competitors despite the fact that they do not serve as substitutes for any consumers, but rather serve different, geographically distinct footprints. Put simply, the transaction will not change the number of broadband choices available to consumers.

22. Any attempted analogy to geographic market definition in recent mobile wireless

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[13] Memorandum Opinion and Order, *In the Matter of Applications for Consent to the Transfer of Control of Licenses from Comcast Corporation and AT&T Corp.*, MB Docket No. 02-70 (2002) (hereinafter *AT&T-Comcast Order*), ¶ 128. *See also*, *Adelphia Order*, ¶ 64 ("In the past, the Commission has concluded that the relevant geographic market for MVPD services is local because consumers make decisions based on the MVPD choices available to them at their residences and are unlikely to change residences to avoid a small but significant increase in the price of MVPD service.") and ¶ 81 ("Consistent with our precedent, we find that the relevant geographic unit for the analysis of competition in the retail distribution market is the household. Since the Applicants generally operate in non-overlapping territories and do not compete with each other in the distribution markets they serve, the proposed transactions would not reduce the number of competitive alternatives available to the vast majority of households.").

merger reviews is inapposite. For example, in challenging the proposed *AT&T/T-Mobile* merger, the United States Department of Justice ("DOJ") alleged:[14]

> Mobile wireless telecommunications services are sold to consumers in local markets that are *affected by nationwide competition among the dominant service providers*. It is therefore appropriate both to identify local markets in which consumers purchase mobile wireless telecommunications services and to identify the nature of the nationwide competition affecting those markets.

Specifically, DOJ focused on the fact that the mobile wireless providers made competitive decisions relating to technology, pricing, and product offerings at a national level and therefore calculated HHIs at both the local and national level.[15] Equally important in this argument was that competition among the mobile wireless providers at issue in the transaction (AT&T and T-Mobile USA) affected these national competitive decisions, because the mobile wireless providers sell to common sets of customers in many local areas, with the competitive decisions affecting consumer substitution between the providers.

23. A crucial difference between this case and *AT&T/T-Mobile* is that, unlike mobile wireless providers, Comcast and TWC do not compete directly with each other in *any* relevant local market and do not serve as substitutes for *any customers*. Indeed, the four major wireless providers generally hold licenses covering most of the country, meaning

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[14] *United States v. AT&T et al.*, Civil Action No. 11-cv-01560, Complaint, August 31, 2011, ¶ 14, *available at* http://www.justice.gov/atr/cases/f274600/274613.htm, *site visited* March 28, 2014. (emphasis added).

[15] *Id.*, ¶¶ 19, 25-26.

that their geographic coverage areas substantially overlap. By contrast, Comcast and TWC operate under cable franchises for distinct geographic areas, and their broadband services are similarly offered in distinct geographic areas. Hence, as a matter of fundamental economic principles, competition with one another for customers does not affect Comcast's or TWC's pricing or other strategies, whether made nationally or locally.

3. No competitive harm to business customers

24. The merging parties do not compete with one another for business customers, so the transaction does not reduce the number of options for any business customer.[16] To the contrary, as discussed below, in Section IV.A, the transaction will benefit businesses by creating a new competitor with the scale required to provide the high quality, unified, and cost-effective services demanded by business customers.

(a) Lack of overlap in sales to business customers implies absence of horizontal competitive harms

25. Because Comcast and TWC provide business services primarily within their service areas and thus do not overlap to any material degree, they are not direct

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[16] See note 9 regarding the negligible zip-code level overlaps associated with business customers. For ease of exposition, in the remainder of this Declaration, when I refer to the lack of competitive overlap in business services, such references incorporate the negligible overlaps described there.

competitors with one another in the provision of business services.[17] To the extent that Comcast and TWC supply the same business customers, they generally do so as complements—with Comcast providing services within its footprint and TWC providing services within its footprint—rather than substitutes. Hence, the transaction will not harm competition in business broadband services.[18]

(b) No harm to wireless backhaul customers in particular

26. One particular type of business service offered by some cable operators (including Comcast and TWC) is backhaul service to mobile wireless providers, through which data are carried from the wireless provider's cell towers to its core network.[19] Comcast and TWC are both relatively new entrants in the provision of backhaul services to wireless

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17 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews; Phil Meeks, Executive Vice President and Chief Operating Officer, Business Services, TWC, March 7, 2014, interview.

18 Moreover, as I discuss further in Section IV.A.1, both Comcast and TWC have only a small presence in the business services segment and compete against much larger incumbent telcos. Consequently, even if there were overlaps between Comcast and TWC, the economic evidence indicates that the transaction would not raise significant competitive concerns in the provision of business services (including broadband-related services).

19 Technologically, backhaul services are similar in nature to the data services offered to medium-sized businesses. However, backhaul agreements typically involve stringent service level agreements ("SLAs") and financial penalties for downtime. (Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews.)

providers and both face competition from much larger rivals.[20] Comcast began offering backhaul services to mobile wireless providers in approximately 2008 and currently provides backhaul to approximately {{ }} cell sites (about { }} percent of the cell towers in its footprint).[21] TWC serves approximately 14,000 cell towers (about 19 percent of the cell sites in its footprint).[22] Collectively Comcast and TWC provide backhaul services to only about]]]] percent of the cell sites within their footprints.[23] Comcast does not provide backhaul outside of its footprint,[24] and TWC provides backhaul services outside its footprint only in very limited circumstances]]

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20 Telecommunications providers, including AT&T and Verizon, are much larger providers of backhaul services than Comcast or TWC. (Greg King, Senior Vice President, Commercial Product & Strategy, TWC, March 7, 2014, interview.)

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

22 Greg King, Senior Vice President, Commercial Product & Strategy, TWC, March 7, 2014, interview.

TWC recently acquired DukeNet, including its 8,700-mile regional fiber-based network that provides wholesale wireless backhaul and other business services to customers in North Carolina, South Carolina, and five other states in the Southeast. About 85 percent of the DukeNet network overlaps with TWC's existing footprint. (*See* Ian Olgeirson, "Footprint, Service Expansion Pushes Higher Commercial Revenue Forecast for US Cable," SNL Kagan, February 27, 2014, *available at* http://www.snl.com/interactivex/article.aspx?id=27031371&KPLT=6, *site visited* March 28, 2014.)

23 Calculation based on the weighted average of Comcast's and TWC's percentage of cell sites within their respective footprints.

24 *See*]]]]. Note that while this document indicates more than {{ }} sites for Comcast, some of the sites have not yet been activated.

]].[25] As a result, Comcast and TWC do not compete with each other to any material degree in the provision of backhaul services and the transaction will not result in competitive harm in the provision of backhaul services.

(c) No harm to backbone service customers in particular

27. Comcast and TWC both provide some backbone transit services, through which they route a transit customer's traffic to some or all other networks connected to the Internet. However, each firm covers only its own footprint and each firm's share is quite small in the enormous backbone marketplace, where several major nationwide and global companies compete vigorously to provide transit services across the entire country.[26] Hence, as the Commission recently recognized in analyzing the *Level 3-Global Crossing*

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25 Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, February 28, 2014, interview.

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]]. (*See* Ian Olgeirson, "Footprint, Service Expansion Pushes Higher Commercial Revenue Forecast for US Cable," SNL Kagan, February 27, 2014, *available at* http://www.snl.com/interactivex/article.aspx?id=27031371&KPLT=6, *site visited* March 28, 2014.)

26 Comcast's revenue from wholesale IP transit and services in 2013 was approximately {{ }}. (Barry Tishgart, Vice President, Product Management & Wholesale Services, February 20, 2014, interview.) By comparison, Cogent's IP related revenue was $168 million, and Level 3's IP and data revenues were $1.5 billion in 2013 (2013 Cogent Communications Group, Inc. SEC Form 10-K Annual Report; 2013 Level 3 Communications, Inc. SEC Form 10-K Annual Report.)

transaction, the market for backbone services is very competitive.[27] In particular, the Commission recognized that barriers to entry are low; that there may be as many as 38 providers that sell transit services on a nationwide basis; and that consumers of transit services frequently purchase from several providers to reach the same network point (a practice I refer to as multi-homing).[28] Consequently, with regard to the *Level 3-Global Crossing* transaction, the Commission found that "if the combined entity were to engage in connection degradation or price increases, a large percentage of its customer base would be able to transition easily to another provider."[29] By the same logic, it is implausible that the present transaction would harm backbone customers, who could simply reroute their traffic over many other competitors offering transit, particularly given the small size of Comcast and TWC in the transit business.

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27 Memorandum Opinion and Order and Declaratory Ruling, *In the Matter of Applications filed by Global Crossing Limited and Level 3 Communications, Inc. for Consent to Transfer Control*, IB Docket No. 11-78 (2011) (hereinafter *Level 3-Global Crossing Order*), ¶¶ 25-29.

28 *Level 3-Global Crossing Order*, ¶¶ 27-29 (also noting that the number of Tier 1 backbone providers increased from eight to 12 between 2005 and 2011). I describe the economic implications of multi-homing in greater detail in Section II.B.1(c), below.

29 *Level 3-Global Crossing Order*, ¶ 27.

B. THE TRANSACTION WILL NOT SHIFT BARGAINING POWER IN A WAY THAT WILL PREVENT EDGE PROVIDERS FROM COMPETING EFFECTIVELY, HARM CONSUMERS, OR REDUCE WELFARE

28. Given the lack of horizontal overlap between Comcast and TWC, critics of the transaction have advanced the possibility that the transaction will increase Comcast's "bargaining power" vis-à-vis edge providers, or vis-à-vis the firms that assist edge providers in delivering their content over the Internet (*e.g.*, content delivery networks (CDNs), discussed below).[30] In some cases, these concerns are expressed by alleging that, post-transaction, the combined firm will be able to erect "tollbooths" or "gateways" on the Internet, thus harming edge providers and their customers.[31]

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[30] I note that the overwhelming majority of edge providers access (and all are free to access) Comcast's network without any direct negotiations, by distributing content to Comcast through third-party transit networks or CDNs, thus "pooling" their content with a range of other content. But Comcast still generally negotiates with agents of those edge providers (*e.g.*, the particular CDN or transit provider). As discussed below, the edge providers who work through CDNs or transit providers have the protection not only of the terms that a given CDN or transit provider is able to negotiate, but also of the ability to choose from many alternative CDNs or transit providers.

[31] *See, e.g.*, "Six Myths About the Comcast-Time Warner Cable Merger," Free Press, February 25, 2014, *available at* http://www.freepress.net/blog/2014/02/25/six-myths-about-comcast-time-warner-cable-merger, *site visited* March 27, 2014; 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 27, 2014.

29. Such bargaining power concerns are without basis for two main reasons.[32] First, as developed in more detail in Section II.B.1, the characteristics of the Internet—including the wide range of valuable services offered by edge providers, the range of ISP options, and the nature of Internet interconnection—substantially reduce ISP power vis-à-vis edge providers (or their agents). Second, as developed in more detail in Section II.B.2, there is no basis to conclude that the transaction will enhance the combined firm's bargaining power, particularly not in a way that would prevent edge providers from competing effectively or reduce consumer welfare.

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[32] Although the discussion in this section focuses on the interaction between Comcast and edge providers, I note that to the extent that commenters raise concerns about end-users' access to the Comcast network, conditions from the *Comcast-NBCUniversal* transaction already address such concerns. In particular, the Open Internet commitment ensures the enforceable protections of no-blocking and non-discrimination in the Commission's now-vacated Open Internet rules and extends these protections to TWC customers. (Memorandum Opinion and Order, *In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc., For Consent to Assign Licenses and Transfer Control of Licensees,* MB Docket No. 10-56 (2011) (hereinafter *Comcast-NBCUniversal Order*), ¶ 94.) Notably, the Commission has announced that it is considering generally applicable rules in this area that will be in place when (and likely before) Comcast's condition is due to expire. In addition, the stand-alone broadband Internet access commitment ensures that end-users will have access to Comcast's stand-alone broadband product at "reasonable market-based prices." (*Comcast-NBCUniversal Order,* Appendix A, § IV.D.)

1. The characteristics of the Internet—including the valuable services offered by edge providers, the range of ISP options, and the nature of Internet interconnection—substantially limit ISP power vis-à-vis edge providers

30. In this section, I discuss the argument that the combined firm (and ISPs in general) will have substantial bargaining power over edge providers through which they can dictate terms to those providers. I explain why several features of the Internet environment refute this claim.

31. **First,** edge providers offer services that drive the demand for Comcast's (and other ISP's) broadband service. Both specific popular edge providers and the overall set of edge providers—with many new apps and providers appearing regularly—are highly valuable to Comcast's customers, meaning that any attempt to limit edge providers' access to the combined firm's network would impose substantial costs on the combined firm. (See Section II.B.1(a).)

32. **Second**, the combined firm will not be a monopolist in the provision of broadband services. Customers (including those that currently subscribe to Comcast or TWC) have options regarding where to obtain their ISP service. And this means that edge providers and end customers have alternative "platforms" on which to interact. As described below, edge providers (or their CDN or transit provider agents) are able to provide better terms to particular ISPs if they wish to favor particular providers for competitive reasons. With or without such explicit actions by edge providers, a strategy that in any way restricts the ability of its customers to access edge providers would have the effect of harming Comcast's broadband offering and potentially causing it to lose subscribers to other providers. (See Section II.B.1(b).)

33. Notably, the combination of these two features—edge provider content that is directly valuable to broadband consumers and the presence of competition in broadband services—means that ISPs are not properly thought of as "terminating access monopolies." To the contrary, edge providers have important alternatives and they can use these alternatives to their competitive advantage.

34. **Third**, the wide range of Internet interconnection choices enhances the options open to edge providers and extends it to the full ecosystem of edge providers, large and small. Edge providers, or the CDNs and/or transit providers that many large and small edge providers rely on to distribute content, can rely on many alternative, cost-effective "back end" ways to get data onto the Comcast network and thus out to end-users who demand that content. The existence of this wide range of interconnection alternatives is central to how the Internet operates, and an attempt to hinder or choke off these interconnection points would substantially downgrade the quality of Comcast's Internet service. The fact that many edge providers can and do "multi-home," meaning make use of multiple alternative paths onto the Comcast network, only bolsters this reality, as attempts to degrade access to the Comcast network for a specific edge provider could end up requiring Comcast to degrade its *overall* connectivity with the broader Internet. (See Section II.B.1(c)).

35. In the remainder of this section, I develop each of these points in more detail.

(a) Products and services offered by edge providers drive demand for ISPs' broadband business, creating an incentive to support those providers

36. Edge providers sell services that stimulate demand for an ISP's broadband business. The value of an ISP's broadband service is largely defined by the quality of the edge services that are available when using the service and whether the speed and reliability of the broadband service permits full utilization of those services. Hence, attractive products from edge providers increase demand for broadband service. Indeed, this demand-stimulating effect from better edge services was at the heart of the Commission's *Open Internet Order*, which noted that "[n]ovel, improved, or lower-cost offerings introduced by content, application, service, and device providers *spur end-user demand and encourage broadband providers to expand their networks and invest in new broadband technologies.*"[33] Edge providers recognize the effect that their services have on demand for broadband services. For example, Netflix recently noted that "[c]onsumers purchase higher bandwidth packages mostly for one reason: high-quality streaming video."[34]

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[33] *See In the Matter of Preserving the Open Internet; Broadband Industry Practices*, Report and Order, GN Docket No. 09-191, WC Docket No. 07-52, 25 FCC Rcd 17905, December 23, 2010 (hereinafter *Open Internet Order*), ¶ 14 (emphasis added).

[34] Reed Hastings and David Wells, Shareholder Letter, January 22, 2014, 6,, *available at* http://files.shareholder.com/downloads/NFLX/2913488913x0x720306/119321bc-89c3-4306-93ac-93c02da2354f/Q4%2013%20Letter%20to%20shareholders.pdf, *site visited* March 31, 2014.

37. Given the importance of high-quality edge provider services to broadband demand, any action that the combined firm might undertake to harm edge providers would degrade the value of its broadband service to consumers and thus potentially reduce the profits it could earn. Any strategy that reduces the availability or attractiveness of edge services would reduce demand for the combined firm's broadband services, potentially causing customers to switch to rival broadband providers (discussed further in Section II.B.1(b)) or to reduce their overall consumption of broadband services, either of which would harm the combined firm's profits.[35]

38. Notably, harms to its broadband business would have a significantly negative effect on the combined company's bottom line. Broadband comprises an important part of both Comcast's and TWC's businesses. For example, residential broadband accounted for approximately 25 percent of Comcast Cable revenue in 2013.[36] Similarly, residential broadband accounted for approximately 32 percent of TWC's residential services revenue in 2013.[37] Moreover, in part because of the lack of programming costs associated with broadband, it accounts for an even higher percentage of Comcast's and TWC's operating cash flow. For example, programming costs accounted for approximately 37 percent of

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35 In Section II.B.1(b), I describe the array of competitive alternatives available to Comcast broadband customers.

36 *Comcast 2013 10-K*, 53.

37 *TWC 2013 10-K*, 39. Broadband accounts for an even higher percentage of TWC's business services revenue. (*Id.*, 41.)

Comcast Cable's total operating costs in 2013 and apply only to its video business.[38] Similarly, programming costs accounted for approximately 46 percent of TWC's operating costs.[39] Thus, any strategy that reduces demand for broadband services could be quite costly to the combined firm's profits.[40]

39. As a final point in this section, I note that some commentators may argue that, while edge providers that offer video content (so-called "over-the-top" or "OTT" providers) drive demand for Comcast's broadband product, those services are also potentially substitutes for Comcast's various video offerings. Thus, they may argue that Comcast has an incentive to harm such edge providers in order to advantage its video business at the expense of its broadband business. Although I understand that video-related competition issues are covered in the report of Drs. Rosston and Topper, I stress two basic points relating to video and broadband.[41]

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38 *Comcast 2013 10-K*, 53.

39 *TWC 2013 10-K*, 42.

40 Although certain commenters have asserted that Comcast recently degraded Netflix access to Comcast customers, even Netflix concedes that Comcast and other ISPs do not "throttle" Netflix traffic. (Peter Kafka, "Netflix Says Verizon Isn't Slowing Down Its Streams," *re/code*, February 11, 2014, *available at* http://recode.net/2014/02/11/netflix-says-verizon-isnt-slowing-down-its-streams/, *site visited* March 28, 2014.)

41 If commenters advance alternative versions of these theories, I will address those in subsequent filings.

- First, because Comcast and TWC each offer both broadband and video services today, and offer these services in non-overlapping footprints, this issue is not specific to the proposed transaction.
- Second, given the importance of broadband to the combined firm's bottom line, described above, a strategy of harming broadband to help video is likely less attractive than a pro-competitive alternative, in which Comcast invests to offer high quality video services (including online video services). Such efforts are pro-competitive, as they are likely to induce competitive responses from edge providers, which will have an incentive to improve their own online offerings. And because they stimulate demand for Comcast's broadband product, such improvements by other edge providers further benefit Comcast's broadband business. In contrast, the anti-competitive alternative of attempting to harm OTT edge providers by erecting "tollbooths" or otherwise foreclosing access to Comcast's broadband subscribers—were it even feasible (which it is not for the reasons developed below)—would harm Comcast's broadband business. Thus, such an approach is likely less economically attractive than the pro-competitive strategy though which Comcast both expands its video business *and* benefits its broadband business.

(b) Edge providers can access customers through many alternative broadband providers

40. As I describe below, broadband providers other than Comcast or TWC currently serve approximately 60 to 80 percent of broadband customers in the United States (and, using a lower speed cutoff to define broadband service, the share of other providers is

even higher).[42] The combination of this large share for providers other than the combined firm and the existence of a set of alternative broadband providers has at least two important implications:

- First, given current shares, any attempt by the combined firm to deny edge providers access to its customers would leave those edge providers with access to a substantial majority of broadband customers in the United States.
- Second, moving beyond a static view based on current shares, a key point is that many alternative broadband providers serve as viable competitors to Comcast and TWC in the provision of broadband services. These alternative providers offer broadband service using a range of technologies, including: fiber to the premises ("FTTP"); fiber to the node ("FTTN") and other DSL technologies; wireless (including both mobile and fixed wireless); and other types of broadband service (including cable overbuilders and satellite). These competitive alternatives provide consumers with other ways to receive an edge provider's content or service should Comcast limit its customers' access to that edge provider. Edge providers (or their agents) can negotiate advantageous deals with those alternative providers (or at least threaten to do so when negotiating with the combined firm) if useful. Hence, any attempt by the combined firm to impede or condition edge

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[42] Excluding divestitures, other broadband providers account for 69 percent of customers with at least a basic Internet connection (defined as 200 kbps for downloads), excluding mobile wireless, and 89 percent of customers with at least a basic Internet connection, including mobile wireless. As explained below, using a more current definition of broadband speed (3 Mbps download /768 kbps upload), which is what the FCC's reports use, after divestiture, other broadband providers will still account for more than 60 percent of broadband customers excluding mobile wireless and more than 80 percent of broadband customers including mobile wireless.

providers' access to its customers would risk loss of those customers to other broadband providers.

41. Below, I first characterize the overall state of broadband service in the United States. I then describe each of the pathways for reaching customers.

(1) The combined firm's moderate share of broadband customers demonstrates the existence of viable alternative providers through which edge providers can reach end consumers

42. As I discussed in Section II.A.2, it is inappropriate to assess broadband competition at the regional or national level because competition depends on the choices available to each household in each local area. Nonetheless, looking at national share data does reveal one important fact: Post-transaction, edge providers will have access to many broadband customers nationally without going through Comcast or TWC. Combined, the parties account for less than 40 percent (after divestitures) of fixed broadband customers in the U.S. and less than 20 percent of combined fixed and mobile wireless broadband customers.[43] As of December 2012 (the most recent period covered

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[43] I have estimated broadband shares at the national level using information from the most recent report of the Commission entitled "Internet Access Services: Status as of December 31, 2012," December 2013 (hereinafter *FCC IAS Report*), which contains data on the total number of U.S. broadband customers, and from FCC Form 477s for Comcast and TWC, which contain data on the number of broadband customers for each firm. I have calculated shares according to the Commission's definition of "broadband speed," 3 Mbps downstream and 768 kbps upstream (3Mb/768k). The *FCC IAS Report* provides broadband counts for customers with "fixed" broadband service (whether wireline or

by the FCC's Internet Access Report), Comcast's fixed broadband share was 29.8 percent and TWC's share was 13.0 percent in December 2012, even without including any mobile broadband customers in the calculations. (See Table 1.) After divestiture of three million customers, the post-transaction shares for the combined firm (again ignoring mobile broadband competition) will equal 39.5 percent.[44] If mobile wireless customers are included in the share calculation, the pre-transaction shares for Comcast and TWC are 15.0 percent and 6.5 percent, respectively, and the post-transaction share with the proposed divestitures is 19.9 percent.[45]

Table 1: Comcast and TWC Broadband Shares for at Least 3 Mbps Downstream and 768 Kbps Upstream, December 2012

	Subscriptions				Shares		
Subscriber Type	**Comcast**	**TWC**	**Combined**	**Total U.S.**	**Comcast**	**TWC**	**Combined**
Fixed Broadband Only	[[	]]	25,505,903	64,596,000	[[	]]	39.5%
Fixed and Mobile Broadband	[[	]]	25,505,903	128,472,000	[[	]]	19.9%

Notes: The combined figure includes proposed divestitures. The 3 million divestitures are scaled down to [[ ]] based on the ratio of TWC subscribers with at least 3 Mbps/down and 768 Kbps/up speed to all TWC HSD subscribers.

Sources: FCC Form 477 data (December 2012); FCC IAS Report (December 2013) (reporting data from December 2012).

wireless) and "mobile" wireless service. I have estimated shares both excluding and including mobile wireless in the universe of all broadband customers.

44 David L. Cohen, "Comcast and Time Warner Cable Announce Merger, Detail Public Interest Benefits and Undertakings," *Comcast Voices*, February 13, 2014, *available at* http://corporate.comcast.com/comcast-voices/comcast-and-time-warner-announce-merger-detail-public-interest-benefits-and-undertakings, *site visited* April 2, 2014 (indicating that Comcast is "prepared to divest systems serving approximately 3 million managed subscribers.")

45 I discuss competition between wireline and wireless broadband in Section II.B.1(b).

(2) Other broadband providers provide a set of alternative platforms on which edge providers can reach end consumers

43. The vast majority of consumers have access to multiple fixed broadband competitors. For example, as shown in Figure 1, the most recent *FCC IAS Report* indicates that approximately 97 percent of households are located in census tracts in which two or more fixed broadband providers report offering at least 3 Mbps downstream and 768 kbps upstream and approximately 70 percent are located in census tracts in which two or more providers report offering at least 10 Mbps downstream and at least 1.5 Mbps upstream.[46]

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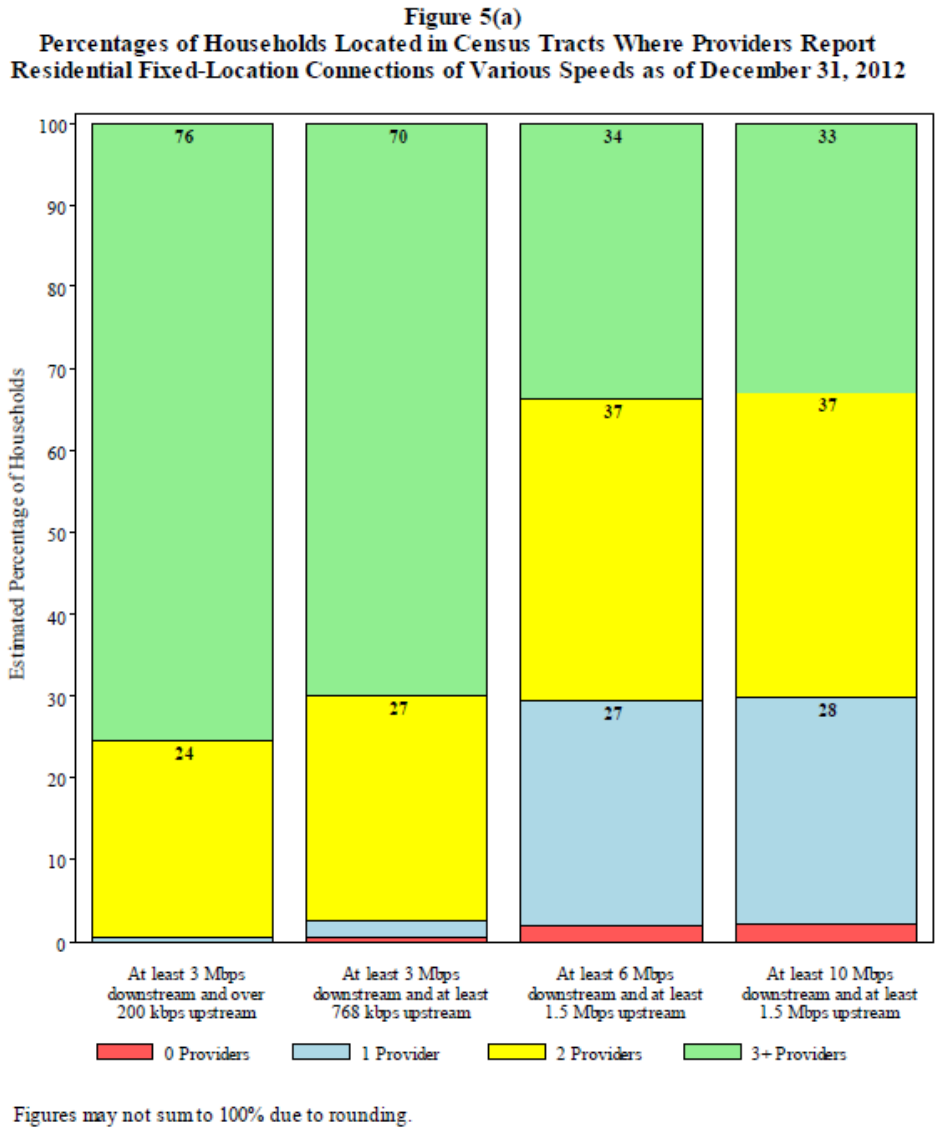
[46] *FCC IAS Report*, Figure 5(a). Recall that Comcast and TWC do not overlap anywhere. Although the *FCC IAS Report* indicates that "the number of providers shown in Figure 5(a) does not necessarily reflect the number of choices available to a particular household, and does not purport to measure competition," it nonetheless provides a sense of options available to consumers. In the following section, I provide more detail on the specific options available to residential consumers in Comcast's and TWC's footprints.

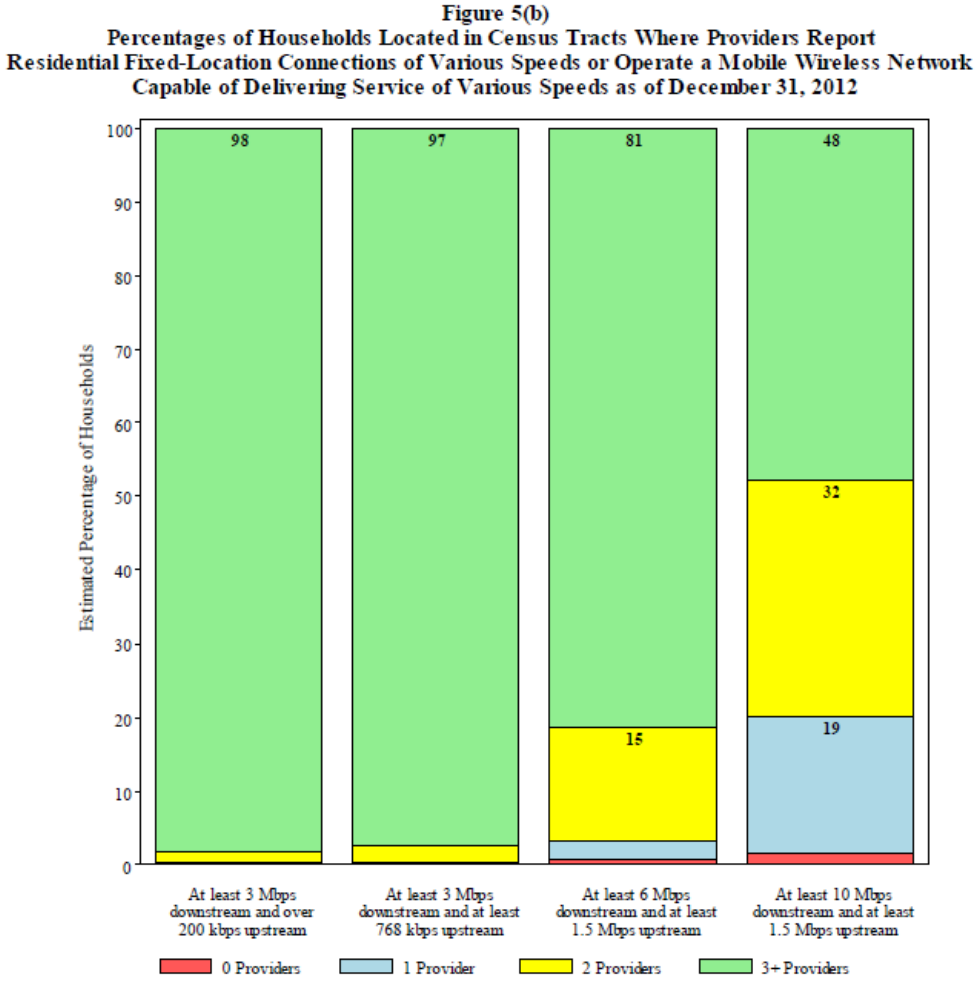
Figure 1: Fixed Broadband Options (Replicated from *FCC IAS Report*)



44. Taking into account mobile wireless broadband options, consumers have even more options. For example, as shown in Figure 2, approximately 97 percent of households are located in census tracts in which three or more broadband providers report offering at least 3 Mbps downstream and 768 kbps upstream or operate a mobile wireless network capable of delivering at least those speeds and approximately 80 percent are

located in census tracts in which two or more providers report offering at least 10 Mbps downstream and at least 1.5 Mbps upstream or operate a mobile wireless network capable of delivering at least those speeds.[47]

Figure 2: Fixed and Mobile Broadband Options (Replicated from *FCC IAS Report*)



47 *FCC IAS Report*, Figure 5(b).

45. Moreover, given the advances in fixed and mobile broadband speeds and coverage described in the following section, data from 2012 is likely to understate the options available to consumers.

46. In sum, the vast majority of customers in the footprint of the combined firm have multiple broadband providers from which to choose. Most importantly, the transaction does not change the number of broadband providers available to consumers and thus will have no impact on the competitive situation for any household.[48]

47. The availability of these alternative broadband providers means that any action that the combined firm takes to reduce the value of its broadband service may induce customers to switch to alternative providers and therefore be costly to Comcast. And this possibility is heightened by the fact that edge providers (or their agents) have an incentive to encourage consumers to switch ISPs if that is competitively advantageous to them.

48. Below, I provide more detail on each of the main technologies used by these broadband competitors.

(a) FTTP

49. In a portion of their footprints, Comcast and TWC face competition from firms providing broadband via "fiber to the premises" ("FTTP"), a very high-quality form of

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[48] *See* Section II.A.

broadband service. Ordinary-course documents indicate that Comcast and TWC consider broadband competition from FTTP providers to be an important competitive constraint.[49]

50. A leading example of FTTP service is Verizon's FiOS service, which is based on a 100 percent fiber-optic network. Verizon's FiOS network enables the provision of broadband that typically meets or exceeds the speed offered by cable operators today, offering speeds up to 500 Mbps downstream and 100 Mbps upstream.[50] Verizon FiOS overlaps approximately [[ ]] percent of Comcast's footprint and 13 percent of TWC's footprint.[51]

51. Competition from FTTP providers is likely to increase in the future. Google recently entered the broadband marketplace, relying on FTTP service that offers speeds of up to one Gbps in both directions.[52] Google Fiber is currently available in Kansas City,

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49 *See, e.g.*, [[
]].

50 *See* http://www.verizon.com/home/fios/, *site visited* March 28, 2014.

51 [[
]]; Arthur T. Minson, "Morgan Stanley Technology, Media & Telecom Conference (Transcript)," March 5, 2014.

I understand that Verizon has indicated that it does not intend to expand the FiOS footprint, but it is a strong competitor where it exists.

52 Carlos Kirjner and Ram Parameswaran, "Google Fiber: A Good Shot at Being Profitable and at (Very) Slowly Boiling the Incumbent Frog," Bernstein Research, May 28, 2013, 6. Google charges customers a $300 "construction fee" plus $120 per month for 1 Gbps Internet plus TV, $70 for 1 Gbps Internet, and no fee for 5 Mbps Internet. Jon Fingas, "Google Fiber Gets Formal Launch, Adds Google Fiber TV (Update: Event Video)," *Engadget*, July 26, 2012.

MO, Austin, TX, and Provo, UT, and Google is now in discussions with 34 cities in nine metro areas across the country to explore the rollout of a new fiber-optic network.[53] Comcast and/or TWC have a presence in eight of the nine metro areas being considered, and 31 of the 34 cities within those metro areas.[54] And ordinary-course decisions demonstrate the relevance of competition from Google, with both Comcast and TWC responding to Google's entry and expansion.[55]

52. Although it is unclear exactly how the expansion of Google Fiber will progress, Google has a vested interest in maintaining competitive broadband markets, because its products and services are complementary to broadband service, meaning that Google benefits directly from competition in broadband markets.[56]

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53 *See* https://fiber.google.com/newcities/, *site visited* March 10, 2014.

54 Calculations based on data provided by Comcast and TWC.

55 [[

]]. TWC recently increased the download speed in its highest tier from 50 Mbps to 300 Mbps in parts of Austin. (Brad Reed, "This Is What Happens When Time Warner Cable Is Forced to Compete," *BGR*, February 20, 2014, *available at* http://bgr.com/2014/02/20/time-warner-cable-internet-speeds-austin/, *site visited* March 28, 2014)

56 Executives at Google have stated that they "always have profitability as one of the key criteria" for Google Fiber. (*See* "Google Inc (GOOG) CEO Discusses Q2 2013 Results – Earnings Call Transcript," July 18, 2013, *available at* http://seekingalpha.com/article/1557292-google-inc-goog-ceo-discusses-q2-2013-results-earnings-call-transcript, *site visited* March 28, 2014.)

However, industry experts have argued that Google has "larger ambitions" than simply operating a standalone ISP. Goldman Sachs, for instance, has pointed out that "Fiber's vastly greater speeds have the potential to drive more processing to the cloud and accelerate HTML5 adoption, thereby potentially breaking down the current ecosystem of

53. Similarly, AT&T recently began deploying FTTP in certain cities. Specifically, AT&T introduced its GigaPower product in Austin, TX. GigaPower is based on a 100 percent fiber optic network and AT&T is promising speeds up to 1 Gbps in 2014.[57] Randall Stephenson, Chairman and CEO of AT&T, recently indicated that AT&T is in the process of expanding its deployment of GigaPower:[58]

> And the cost dynamics to this [GigaPower] deployment have been really, really encouraging...And in fact I would tell you, we are so encouraged that we want to begin taking this to other communities and what we're doing is in cities and municipalities, we can get the terms and conditions like we have in Austin. We are redirecting VIP investment to fiber to the home deployment, and in fact we are going to launch the service in Dallas this summer. And so you are going to see other communities as we begin to deploy this technology emerge around the United States.

54. Moreover, new FTTP deployment is not limited to Google and AT&T. As of May 2013, there were 135 municipal FTTP networks in the United States.[59]

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end-point devices and client-side [operating systems]. These last two moves could serve to cement Google's dominance as a provider of enhanced web-services on both mobile devices and PCs." Consequently, "Google is ultimately indifferent to whether it or incumbent broadband providers deliver fiber-optic internet speeds since either case supports the company's vision of an open, services-based web." (Heather Bellini, Jason Armstrong, Drew Borst, Brian Baytosh, and Dan Pelligrini, "Google Fiber – Build or Bluff," Goldman Sachs, June 28, 2013, 1.))

57 *See* http://www.att.com/shop/u-verse/gigapower.html, *site visited* March 28, 2014.

58 "AT&T's CEO Presents at Morgan Stanley Technology, Media & Telecom Conference (Transcript)", March 6, 2014, *available at* http://seekingalpha.com/article/2072813-at-and-ts-ceo-presents-at-morgan-stanley-technology-media-and-telecom-conference-transcript, *site visited* March 28, 2014.

59 Masha Zager, "Number of Municipal FTTP Networks Climbs to 135," *Broadband Communities*, May/June 2013, *available at*

(b) DSL

55. In many areas without FTTP service, telephone providers ("telcos") have built out partial fiber networks that utilize fiber in the core network, but not all the way to the home, and then use DSL technology that relies on copper wiring to connect homes to the network.[60] Advanced services like VDSL, which are based on "fiber-to-the-node" ("FTTN") architecture, offer speeds up to 100 Mbps.[61] Non-FTTN DSL technology can deliver speeds up to 45 Mbps, which is more than sufficient to download HD movies, to watch streaming HD video, and for gaming.[62]

56. With regard to FTTN technologies (including VDSL) in particular, the competitive threat to cable is well established. For example, international experience indicates that VDSL is an important high-speed broadband competitor to cable

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http://www.bbpmag.com/Features/0513feature-MuniCensus.php, *site visited* March 12, 2014.

60 DSL is a technology that facilitates the transmission of data over copper wires.

61 Karl Bode, "AT&T: 45 Mbps U-Verse Coming in 'Next Few Months'," *DSLReports.com*, July 24, 2013, *available at* http://www.dslreports.com/shownews/ATT-45-Mbps-UVerse-Coming-in-Next-Few-Months-125101, *site visited* April 2, 2014. ("'With our plant technology advancements, 90 percent of our U-verse customer locations will have the capability to receive what we project to be 75 Mbps -- and 75 percent will have the capability to receive up to 100 Mbps,' AT&T CEO John Donovan said back in January [2013]. 'Almost 80 percent of the IP DSLAM customer locations will have the capability to receive 45 Mbps, with about half of those having the capability to receive up to 75 Mbps.'")

62 *Id*. *See also*, Federal Communications Commission, "Broadband Speed Guide," *available at* https://www.fcc.gov/guides/broadband-speed-guide, *site visited* April 2, 2014 (indicating that 4 Mbps is the minimum download speed required for HD-quality streaming, HD video conferencing, and two-way online gaming in HD.)

broadband.[63] Domestically, AT&T and CenturyLink, among other telcos, offer FTTN service in Comcast's and TWC's footprints. For example, AT&T's FTTN service, U-Verse, overlaps approximately [[ ]] percent of Comcast's footprint and CenturyLink's FTTN service overlaps approximately [[ ]] percent of Comcast's footprint.[64] Similarly, AT&T's U-Verse service overlaps approximately 28 percent of TWC's footprint.[65]

57. The competitive pressure imposed by wired telco providers is likely to increase over time as telcos invest in new technologies, including FTTN and others, that improve the quality of their broadband services. In November 2012, AT&T announced plans to invest $6 billion over the next three years to expand and upgrade its wireline network to include 57 million customer locations, representing 75 percent of its footprint.[66] The investments will upgrade and expand the FTTN-based U-verse footprint to 33 million

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63 Tim Johnson, "VDSL in Europe's future," Point Topic, August 1, 2013.

64 [[ ]]. Both AT&T and CenturyLink also offer FTTP in limited geographic areas. AT&T and CenturyLink also offer non-FTTN DSL services. I do not count the latter in the overlap statistics described in this paragraph.

65 Arthur T. Minson, "Morgan Stanley Technology, Media & Telecom Conference (Transcript)," March 5, 2014.

66 AT&T, "Laying a Foundation for Future Growth," November 7, 2012, 10, 39, and 96, *available at* http://www.att.com/Common/about_us/files/pdf/analyst_presentation_c.pdf, *site visited* April 2, 2014.

customer locations with broadband download speeds up to 100 Mbps.[67] And the speeds achievable using DSL technologies are expected to continue to increase; for example, Comcast anticipates that providers such as [[ ]] may be able to use new DSL technologies to achieve speeds as high as [[ ]] by the end of [[ ]].[68]

58. Moreover, AT&T's chairman and CEO recently indicated that AT&T intends to accelerate its U-Verse expansion *in direct response to the proposed transaction*, demonstrating its pro-competitive nature (developed more fully in Section IV, below).[69]

59. The DSL advances are not limited to FTTN. For example, outside the U-Verse footprint, AT&T will also upgrade ATM-DSLAMs to IP-DSLAMS for another 24 million households, allowing it to achieve speeds as high as 45 Mbps.[70]

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67 AT&T, "Laying a Foundation for Future Growth," November 7, 2012, 39, *available at* http://www.att.com/Common/about_us/files/pdf/analyst_presentation_c.pdf, *site visited* April 2, 2014. *See also* note 61.

68 [[ ]].

69 "AT&T's CEO Presents at Morgan Stanley Technology, Media & Telecom Conference (Transcript)", March 6, 2014, *available at* http://seekingalpha.com/article/2072813-at-and-ts-ceo-presents-at-morgan-stanley-technology-media-and-telecom-conference-transcript, *site visited* March 28, 2014. ("...in light of a new competitor, a new structure in the industry where we are going to be a little more aggressive and assertive in deploying that technology around the country.")

70 AT&T, "Laying a Foundation for Future Growth," November 7, 2012, *available at* http://www.att.com/Common/about_us/files/pdf/analyst_presentation_c.pdf, *site visited* April 2, 2014), 39.

60. Overall, DSL is broadly deployed and the Commission considers it an effective broadband option.[71] For example, the Commission recently found that "while there are some differences between technologies, DSL, cable, and fiber-to-the-home all are delivering quality service generally consistent with the speeds advertised."[72] Similarly, the Commission's data indicate that, between December 2008 and December 2012, DSL-based broadband connections grew at an average annual rate of 25 percent, relative to cable broadband connections that grew at an average annual rate of only 18 percent.[73]

(c) Wireless providers

61. Wireless broadband is increasingly becoming a competitor to wireline broadband, particularly with the rollout of 4G LTE and associated dramatic improvement in wireless speeds over the last few years. Currently, the fastest mobile LTE networks in the United States achieve average speeds of close to 20 Mbps and peak realized speeds of more than

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71 *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 11-121, Eighth Broadband Progress Report, August 21, 2012, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-90A1.pdf, *site visited* March 31, 2014, ¶ 60. ("Overall, more than 94 percent of Americans have access to fixed broadband meeting the speed benchmark. Cable providers continue to report the largest coverage area (85 percent) followed by DSL providers (79 percent).")

72 *Id.*, ¶ 124.

73 *FCC IAS Report*, Table 7.

70 Mbps.[74] Next generation wireless networks are expected to offer even faster speeds. For example, providers in Finland recently demonstrated LTE Advanced ("LTE-A") technology that achieved data rates of 300 Mbps on a live commercial network.[75]

62. High-speed wireless broadband networks have expanded their footprints dramatically in recent years and are now nearly ubiquitous in the United States. For example, Verizon's 4G LTE network covers more than 97 percent of the population and Verizon continues to upgrade its LTE network by, among other things, adding additional spectrum.[76] According to NTIA data, the percentage of U.S. population with access to a mobile wireless provider offering broadband speed of 3 Mbps downstream and 768 kbps upstream or higher *increased from 46.9 percent to 99.3 percent between December 2010 and June 2013*. Similarly, the percentage of population with access to a mobile wireless provider offering downstream speed of at least 10 Mbps *increased from 7.9 percent in December 2010 to 97.3 percent in June 2013*. (See Figure 3 for a depiction of these

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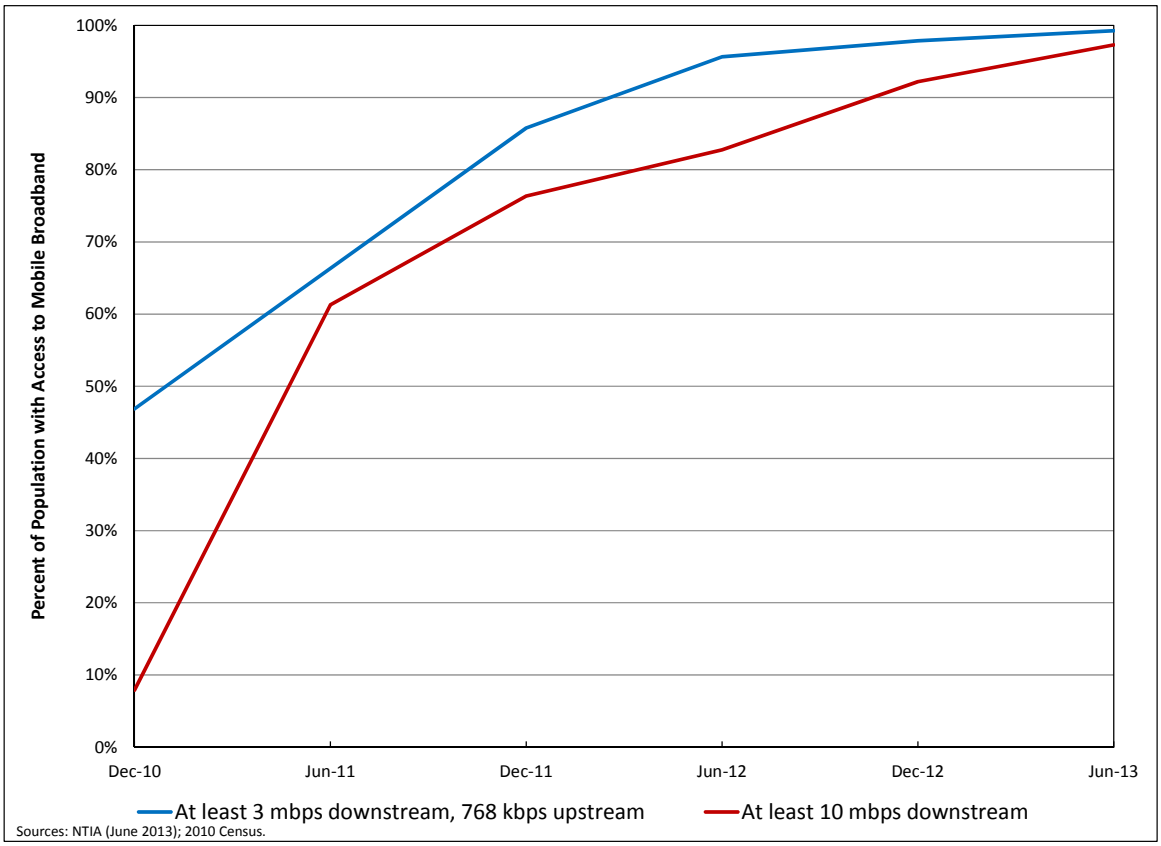
74 *See, e.g.*, T-Mobile USA, Press Release, "Customer Data Proves T-Mobile Network Now Fastest 4G LTE in the U.S.," January 8. 2014, *available at* http://newsroom.t-mobile.com/phoenix.zhtml?c=251624&p=irol-newsArticle&ID=1889173&highlight, *site visited* March 28, 2014.

75 Martha DeGrasse, "LTE-A in Finland Hits 300 Mbps on Live Network," *RCRWireless*, February 11, 2014, *available at* http://www.rcrwireless.com/article/20140211/carriers/lte-a-in-finland-hits-300-mbps-on-live-network/, *site visited* March 28, 2014.

76 *See* http://www.verizonwireless.com/wcms/consumer/4g-lte.html, *site visited* March 28, 2014. *See also*, Kevin Fitchard, "Verizon Quietly Unleashes Its LTE Monster, Tripling 4G Capacity in Major Cities," *GigaOm*, December 5, 2013, *available at* http://gigaom.com/2013/12/05/verizon-quietly-unleashes-its-lte-monster-tripling-4g-capacity-in-major-cities/, *site visited* March 28, 2014.

dramatic trends in access to high-speed wireless broadband service.) Data from SNL Kagan indicate that by the end of 2018 there will be 316 million primary 4G LTE subscriptions and 224 million pure 4G LTE subscriptions in the United States.[77]

Figure 3: Access to Mobile Broadband



77 SNL Kagan defines primary 4G LTE subscriptions as those where the customer has a 4G plan and drops back to 3G only when 4G LTE reception fails. It defines pure 4G LTE subscriptions as those where the customer uses 4G LTE networks exclusively, with no (or minimal) fallback to 3G networks. ("Covered Pops & Subscribers by Technology in U.S. Wireless," SNL Kagan, July 2013.)

63. A special type of wireless services is fixed wireless. Fixed wireless uses radio spectrum, typically licensed to providers of wireless telecommunications services, to communicate between two fixed points.[78] Although fixed wireless currently comprises less than one percent of residential broadband connections, recent announcements by wireless carriers and satellite companies indicate that it may become significantly more prominent in the future.[79] For example, DISH Network recently began trials in which it partners with wireless providers such as Sprint and Ntelos to provide fixed wireless services.[80] Sprint and DISH Network have announced plans to expand the service to additional markets beyond the initial test markets.[81] In recent trials, Sprint and DISH

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78 Federal Communications Commission, "Internet Access Services: Status as of December 31, 2012," (hereinafter *Internet Access Services Report*), 81, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-324884A1.pdf, *site visited* March 31, 2014.

79 As of December 2012, fixed wireless accounts for approximately 0.4 percent of fixed residential broadband connections and approximately 0.5 percent of wireless residential connections. (*See Internet Access Services Report*, 26.)

80 *See* Dan Jones, "Dish Taps Sprint for 4G Trial in Texas," *LightReading*, December 17, 2013, *available at* http://www.lightreading.com/mobile/4g-lte/dish-taps-sprint-for-4g-trial-in-texas/d/d-id/707023, *site visited* March 31, 2014; Sarah Reedy, "Son: Dish Could be Sprint's Great Ally," *LightReading*, March 27, 2014, *available at* http://www.lightreading.com/mobile/4g-lte/son-dish-could-be-sprints-great-ally/d/d-id/708408, *site visited* March 31, 2014.

81 Sprint, Press Release, "Sprint and DISH to Trial Fixed Wireless Broadband Service," December 17, 2013, *available at* http://newsroom.sprint.com/news-releases/sprint-and-dish-to-trial-fixed-wireless-broadband-service.htm, *site visited* March 31, 2014.

achieved download speeds of 200 Mbps.[82] Verizon also offers a HomeFusion fixed wireless product based on its LTE network, which offers average download speeds of five to 12 Mbps.[83]

64. Recent research undertaken by [[

]] highlights the growing competitive threat to cable broadband operators imposed by wireless LTE technology.[84] [[

[85]

]].[86]

65. Moreover, estimates of the degree of wireless substitution are increasing over time. {{

[87]

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82 Sarah Reedy, "Son: Dish Could be Sprint's Great Ally," *LightReading*, March 27, 2014. *available at* http://www.lightreading.com/mobile/4g-lte/son-dish-could-be-sprints-great-ally/d/d-id/708408, *site visited* March 31, 2014.

83 Verizon Wireless, "4G LTE HomeFusion Broadband," *available at* http://www.verizonwireless.com/b2c/homefusion/hf/main.do, *site visited* April 2, 2014.

84 [[ ]].

85 *Id.* at 3.

86 *Id.* at 3. [[ ]]

87 [[ ]].

}}.[88]

66. Industry participants back up the views expressed by [[ ]]. For example, TWC recently concluded that {{

}}.[89] And both AT&T and Verizon have stated that their strategy is to supplement their FTTP and FTTN networks with LTE outside of their fiber footprints.[90]

67. Making wireless networks more competitive over time is the rapid decline in the cost of sending data over such networks, which, as a matter of economics, puts corresponding downward pressure on wireless prices. As more spectrum is released (*e.g.*, through the upcoming 600 MHz incentive auction) and average spectral efficiency continues to improve through broader LTE deployment and advances in LTE

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88 [[ ]].

89 Kevin Leddy, Executive Vice President, Corporate Strategy, TWC, February 28, 2014, interview.

90 *See* AT&T, "Laying a Foundation for Future Growth," November 7, 2012, 13, 54, *available at* http://www.att.com/Common/about_us/files/pdf/analyst_presentation_c.pdf, *site visited* April 2, 2014; Fran Shammo (Verizon Communications Inc. Executive Vice President & Chief Financial Officer), 3Q11 Earnings Call, October 21, 2011. ("Now those lines that are outside that FiOS [area] and outside of any potential of passing ever with FiOS we will continue to be competitive in this area but I think it's going to be around LTE.")

technology,[91] the associated increase in the capacity of wireless networks will put downward pressure on the cost and price per gigabyte on wireless networks. Indeed, this trend can be seen in recent history, as the price per gigabyte paid by consumers fell roughly [[ ]].[92] Going forward, wireless providers' costs are expected to fall an additional [[ ]] over the next several years, which should in turn reduce consumer prices substantially.[93] Due to these declines in cost and thus price per gigabyte, wireless broadband will likely become an increasingly economical alternative in coming years, including higher usage levels as wireless networks progress.

(d) Other ISPs

68. Comcast and TWC also face competition from a variety of other ISPs within their footprints:[94]

- Satellite broadband also provides a broadband option, especially in more rural areas. For example, ViaSat currently offers download speeds of 12 Mbps and

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91 *See* FCC, "Incentive Auctions," *available at* http://www.fcc.gov/incentiveauctions, *site visited* March 28, 2014; [[ ]].

92 [[ ]].

93 *Id.*, 19.

94 *FCC IAS Report*, 26.

plans to launch a new, higher-capacity satellite in 2016.[95] Similarly, HughesNet recently launched a fourth generation satellite that offers download speeds of 15 Mbps.[96] The Commission recently recognized the improved quality of satellite broadband and found that "it will support many types of popular broadband services and applications."[97]

- Cable overbuilders such as RCN and WOW! are available to [[ ]] percent of households within Comcast's footprint.[98] Cable overbuilders typically offer broadband services with download speeds in excess of 100 Mbps.[99]

(c) Edge providers can access the customers of any particular broadband provider through an array of interconnection alternatives

69. The discussion in part *(b)* above illustrates that the existence of *multiple broadband providers* creates multiple ways for edge providers to reach end consumers. In this section, I explain that the nature of Internet interconnection means that edge

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95 ViaSat, "High-Capacity Satellite System," *available at* http://www.viasat.com/broadband-satellite-networks/high-capacity-satellite-system, *site visited* March 28, 2014.

96 HughesNet, "Gen4 Plans," *available at* http://www.hughesnet.com/index.cfm?page=Plans-Pricing, *site visited* March 31, 2014.

97 Federal Communications Commission, "2013 Measuring Broadband America February Report: A Report on Consumer Wireline Broadband Performance in the US," February 2013, 7, *available at* http://transition.fcc.gov/cgb/measuringbroadbandreport/2013/Measuring-Broadband-America-feb-2013.pdf, *site visited* March 28, 2014.

98 *See* [[ ]] Note that Frontier has been excluded from the share as it is not considered an overbuilder.

99 *See, e.g.*, http://www.rcn.com/dc-metro/high-speed-internet/services-and-pricing, *site visited* March 28, 2014.

providers have multiple, cost-effective ways to reach the customers of *a given broadband provider*, such as Comcast or TWC.

70. As explained above, the presence of these multiple paths into the combined firm's network has important implications for any claim that the combined firm could harm edge providers by limiting their access to its network. First, the fact that any edge provider can contract with one or more CDNs or transit providers—potentially even "multi-homing" to obtain several alternative access paths into the Comcast network—means that these access alternatives are open to all edge providers, whether large or small, with small edge providers effectively able to pool their content with other providers who use a given CDN or transit provider. As described below, large edge providers may also contract directly with Comcast to arrange interconnection terms, but this is simply a direct version of what other edge providers—which may not place enough content on the Comcast network to make such direct contracting cost-efficient—can accomplish via CDNs and transit providers. Second, to meaningfully hinder these alternative access paths, Comcast would have to downgrade substantially its connectivity with the broader Internet, thus harming its broadband offering.

71. In what follows, I begin with some background on the nature of Internet interconnection, then explain how the wide array of alternatives for interconnection creates multiple paths by which edge providers can reach the combined firm's customers,

and finally detail the ways in which this interconnection environment limits any power an ISP has over edge providers.[100]

(1) Background on Internet interconnection

72. The collection of networks that make up the Internet interconnect with one another through a variety of physical and financial arrangements.[101] Traditionally, two types of commercial arrangements to exchange traffic have been common:

- *Transit*: One network (*e.g.*, a local ISP)[102] or edge provider contracts with another network (*e.g.*, a national backbone provider)[103] to deliver its traffic to all other destinations on the Internet; and
- *Peering*: Two networks exchange traffic to be delivered to/from only one another and one another's direct customers. Peering may be either "paid" or "settlement-free," with settlement-free peering meaning that no money changes hands between connecting networks, but rather there is an exchange of roughly like "value" to

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100 The discussion in this section draws heavily on *Besen and Israel (2013)*. *See also*, Christopher S. Yoo (2010), "Innovations in the Internet's Architecture that Challenge the Status Quo," *J. on Telecomm. & High Tech. L.*, 8:79-99.

101 *Id.*

102 Examples of ISPs include Comcast, TWC, Verizon, and AT&T. (*Id.*)

103 Backbone ISPs are sometimes distinguished by tier. As a general matter, Tier 1 backbone providers are defined as those that can reach the entire Internet without interconnecting with other transit providers and include Deutsche Telekom, Level 3, AT&T, Verizon, CenturyLink, Intelliquent, Sprint, NTT, TeliaSonera, and Tata. Tier 2 and 3 providers must interconnect with other transit providers in some cases. However, these tier definitions are becomingly increasingly blurred over time. (*Id. See also, Level 3-Global Crossing Order*, ¶ 19.)

terminate one another's traffic.[104] Peering occurs not only between networks, but also is sometimes provided by a network to a CDN or large edge providers, typically on a paid basis.

73. Content delivery networks (CDNs) such as Akamai, Limelight, CDNetworks, Cloud Flare, EdgeCast, Amazon CloudFront, Level 3, and a host of others play a particularly important role in the evolving Internet architecture. Edge providers, whether large or small, can contract with CDNs, which effectively provide wholesale content distribution services. CDNs cache content across geographically diverse servers in order to reduce the costs of the delivery of content relative to the cost of traditional transit

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[104] Faratin and Clark (2008) note that: ''[i]n settlement free peering relationships with very large networks, there is frequently a requirement to keep traffic 'in ratio.' The traffic going from A to Z is measured, and the traffic going from Z to A is measured. If the two numbers are not close enough, peering will be denied. For very large networks, the traffic ratio requirement is usually 2:1, and sometimes 1.5:1.'' (Peyman Faratin, David Clark, Steven Bauer, William Lehr, Patrick Gilmore, and Arthur Berger (2008), "The Growing Complexity of Internet Interconnection," *Communications & Strategies*, 72: 51–71.) Dhamdhere *et. al* (2010) describe the traffic ratio rule as ''widely used.'' (Amogh Dhamdhere, Constantine Dovrolis, and Pierre Francois, ''A Value-Based Framework for Internet Peering Agreements,'' October 2010, *available at* http://www.caida.org/~amogh/depeering_itc10.pdf, *site visited* March 28, 2014.)

For examples of peering policies *see* Comcast's Settlement-Free Interconnection (SFI) Policy, *available at* http://www.comcast.com/peering/, *site visited* March 28, 2014; AT&T's Global IP Network Settlement-Free Peering Policy, *available at* http://www.corp.att.com/peering/, *site visited* March 28, 2014; Suddenlink Communications' Settlement-Free Interconnection (Peering) Policy, *available at* http://www.suddenlink.com/terms-policy/peering.php, *site visited* March 28, 2014; Verizon Business Policy for Settlement-Free Interconnection with Internet Networks, *available at* http://www.verizonbusiness.com/terms/peering, *site visited* March 28, 2014; and Qwest's North America IP Network Peering Policy, *available at* http://www.qwest.com/legal/peering_na.html, *site visited* March 28, 2014.

options. CDNs then negotiate interconnection arrangements with ISPs and/or buy transit to reach smaller ISPs.

74. Over time, the Internet has evolved from a "hierarchy"—in which interconnection was achieved by having ISPs purchase transit services from top-level backbones, with the top-level backbones engaging in settlement-free peering with one another—to a "mesh" in which peering occurs among a much larger number of participants and some peering arrangements involve payments from one peer to another. In this new environment, backbone providers, ISPs, CDNs, and suppliers of content have a far wider array of interconnection alternatives, both technical and financial, than they used to.

75. In this evolving Internet architecture, several interconnection arrangements have become more prominent, including:

- *Secondary peering*: Smaller IP networks directly interconnect, replacing traffic that otherwise would have flowed through transit connections.
- *Paid peering*: Technologically analogous to settlement-free peering, but compensation flows from one party to another (typically because of asymmetric traffic flows or network facilities). Such paid peering arrangements are more common in today's internet environment than previously, when settlement-free peering was more the norm.[105]

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[105] *Besen and Israel (2013)*, 239. I understand that some in the industry, such as Level 3 and Cogent, have questioned whether paid peering should be permitted at all. The Besen and Israel paper, cited above, explains why limitations on paid peering would lead to competitive and consumer harm. One issue highlighted in that paper is that it is

- *Partial transit*: An ISP, CDN, or content provider buys transit access to some Internet networks but not all (usually because the entity has direct peering, or alternative transit arrangements, with the excluded networks).

76. Edge providers or CDNs can (and often do) make transit arrangements with several backbone providers or several CDNs (or both), a process known as "multi-homing." Multi-homing allows a network to allocate traffic opportunistically and often in real-time in order to route around bottlenecks or otherwise optimize traffic flows. Multi-homing is quite common. For example, in its *Level 3-Global Crossing* Order, the Commission found that "86% to 88% of Level 3 and [Global Crossing] transit or direct Internet access (DIA) customers are 'multi-homed' with providers other than Level 3 and [Global Crossing]."[106]

(2) Range of interconnection alternatives

77. In this evolving Internet architecture, there are many ways for edge providers to ensure that their traffic reaches Comcast's network. Some large firms, including Netflix

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economically efficient for ISPs to charge edge providers for the marginal costs that they impose on the ISPs' networks: If edge providers do not fully internalize the costs they impose on the network, they will be incentivized to overprovide data relative to the socially optimal level. In particular, if edge providers do not internalize the costs they impose on data networks, they may not have the proper incentives to undertake costly, but efficiency-enhancing investments. As the Besen and Israel paper explains, "…it is important not to restrict through regulation the options for recovery of the costs of interconnection in order to encourage both efficient investment in, and efficient usage of, the Internet infrastructure." (*Besen and Israel (2013)*, 242.) In any case, this is an industry-wide issue that is not specific to the proposed transaction.

106 *Level 3-Global Crossing Order*, ¶ 27.

and Google, have invested in their own CDNs and negotiate direct access with ISPs such as Comcast. Other firms rely on third-party CDNs to deliver their content, thus acting as their agents in negotiations with ISPs.[107] Others rely on transit providers. And many rely on a combination of the above options.

78. In total, Comcast has over 40 settlement-free peering agreements, and thousands of commercial (*i.e.*, paid) connections, which include several dozen substantial peering and transit agreements (*e.g.*, with CDNs, ISPs, or larger edge providers).[108] Similarly, TWC has approximately [[ ]] settlement-free routes into its network through various providers, and more than [[ ]] paid connections with CDNs and others.[109]

79. Bottom line, as a result of this rich network of interconnection options, both small and large edge providers have many pathways into Comcast's network for delivery of their content to Comcast's customers, including working with multiple CDNs and/or transit providers. Additionally, by going through third-party routes, the overwhelming

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107 *See* Dan Rayburn, "Here's What the Current CDN Landscape Looks Like, with List of Vendors," *streamingmedia.com*, December 10, 2013, *available at* http://blog.streamingmedia.com/2013/12/heres-current-cdn-landscape-looks-like-list-vendors.html, *site visited* March 28, 2014 for a list of CDN vendors. Seven CDNs (Akamai, Amazon, EdgeCast, Highwinds, Level 3, Limelight Networks and Microsoft) account for the vast majority of paid, third-party CDN services.

108 Kevin McElearney, Senior Vice President, Network Engineering, Comcast Corporation, April 2, 2014, interview.

109 Mike Hayashi, Executive Vice President, Architecture, Development & Engineering, TWC, February 28th, 2014, interview.

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

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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

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[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

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[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]

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114 *Besen and Israel (2013)*, 243-244.

115 *See, e.g.*, Jon Brodkin, "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

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[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

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[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

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[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

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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

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[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

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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,

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[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

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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

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[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

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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

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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*

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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 ½ 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]

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[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

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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

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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

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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,

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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,

personalized recommendations, easy movement across channels, a remote application for mobile devices, and a cloud-based backend system that allows for more seamless upgrade cycles.[142] The X1 platform is characterized by high fixed costs and low variable costs. For example, Comcast invested {{ }} in developing the X1 platform.[143] Such a large, fixed-cost investment is profitable only with sufficient scale, a point that is consistent with Comcast's statement that it is trying to move video distribution from cable scale to consumer electronics scale.[144] Notably, TWC has not invested as heavily in a similar platform and is [[ ]], at least in part because its smaller scale does not justify the expenditure (in internal engineers to do the work, in work with third-party developers, or in the infrastructure needed to deliver an X1-like cloud-based experience).[145] Nor have smaller cable operators developed similar products to my knowledge.

113. More generally, Comcast employs over 1,000 engineers and developers and invests approximately $1 billion in software research, development, and deployment every year.[146] As a matter of economics, Comcast sees a sufficient return on this

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142 *See* http://www.comcast.com/x1, *site visited* March 28, 2014.

143 Declaration of Michael J. Angelakis, ¶ 14.

144 *See* Declaration of Michael J. Angelakis, ¶¶ 12-13.

145 Mike Angus, Senior Vice President, Programming, TWC, February 28, 2014, interview.

146 Declaration of Michael J. Angelakis, ¶ 13.

investment given its size. In contrast, this investment level would be less profitable at TWC given the smaller customer base from which associated revenues could be recovered.[147]

C. A MERGER IS REQUIRED TO OBTAIN ADDITIONAL SCALE BENEFITS, BY LEVERAGING SCALE BEYOND A SINGLE CABLE OPERATOR'S FOOTPRINT

114. In evaluating claims of scale-based benefits from a merger, a reasonable question may be whether the merging parties need to merge to capture the benefits from scale or whether alternatives exist. Below, I consider two such alternatives to merger: (i) organic growth and (ii) collaboration with other cable operators. I demonstrate that neither alternative provides the full benefits of scale that would be gained from the transaction.

1. Limited regional footprints inherently constrain the ability of cable operators to capture scale benefits

115. In some circumstances, an attractive alternative method to achieve scale is to invest and innovate and then use the innovation to compete for more customers, and thereby to capture additional scale "organically."[148] However, this alternative is not relevant for the scale-based benefits from the proposed transaction. Comcast and TWC each can and do compete for scale within their own footprint, but those footprints are

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147 Mike Angus, Senior Vice President, Programming, TWC, February 28, 2014, interview.

148 I note that my analysis here should not be taken to say that a merger between two horizontal competitors would always be desirable due to increased scale. That surely is not the case. In this transaction, however, additional scale is created with no reduction in horizontal competition.

inherently limited. I understand that neither Comcast nor TWC has any plans in either the short-term or the long-term to expand into one another's footprint, because such an expansion would not be sufficiently profitable to pursue.[149] Overbuilding (*i.e.*, building a network entirely from scratch) in one another's service area would be a significant expense made more difficult to recover by the competitive video and broadband marketplace that already exists. And entering the video marketplace as an over-the-top ("OTT") player would require entirely changing the companies' business models, acquiring entirely new programming rights (for pure OTT offerings), new marketing, a new user interface—all against a backdrop where other, well-capitalized companies, including Netflix, Amazon, Apple, Hulu, and Google, already have a national footing and better nationwide name recognition.[150]

116. In sum, there is no near term prospect that the scale-based benefits from the merger could be created "organically" via expansion into other geographic markets. In contrast, the proposed transaction immediately mitigates the companies' current

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149 *See, e.g.*, James Stewart, "A Vision Beyond Cable for Comcast After Merger," *New York Times*, March 28, 2014, *available at* http://www.nytimes.com/2014/03/29/business/a-vision-for-comcast-in-a-post-merger-world.html?_r=0, *site visited* April 2, 2014. ("But Mr. Roberts flatly ruled out that possibility [of Comcast entering the New York City market on a stand-alone basis], given the prohibitive costs of replicating Time Warner Cable's infrastructure.")

150 Declaration of Michael J. Angelakis, ¶ 12.

geographic limitations, allowing the combined firm to expand the benefits from scale via a larger footprint.

2. Attempting to increase scale via cross-cable operator collaboration faces significant limitations and drawbacks

117. Given that each individual cable operator is constrained by its geographic footprint, an obvious question is whether the cable operators could partner with one another or otherwise collaborate to obtain the benefits of scale without the need for a merger. Indeed, this is an ongoing strategic priority for the cable industry.[151] The large number of attempts to develop cross-cable operator initiatives (*e.g.*, attempts to collaborate to provide business services to large businesses, the TV Everywhere collaboration, and the Canoe advertising initiative) are examples of such attempts to achieve greater scale. However, as I discuss further in this section, the failure (or at best only modest success) of many of those efforts is consistent with the long-standing body of economic theory on why such arms-length arrangements often fail (or only partially succeed) and thus why a merger between Comcast and TWC is necessary to obtain the full benefits available from greater scale.

(a) Conflicting incentives, systems, and agendas across firms make coordination difficult

118. The economic logic explaining why arms-length collaborations often fail is

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[151] Declaration of Michael J. Angelakis, ¶¶ 12-17.

simple: Separate firms maintain separate incentives and thus separate agendas, which make collaboration difficult, especially for the high-cost investment opportunities for which scale benefits are critical. Economists use the term "hold-up" to describe the common situation in which two firms could each undertake surplus-enhancing relationship-specific investments, but refrain from doing so because of concerns that such investments may give the other firm increased bargaining leverage in future re-negotiations, which in turn might reduce their own profits.[152] Hold-up problems can prevent mutually beneficial partnerships from forming—and associated investments from being undertaken—or undermine the partnerships that do form. Hold-up problems can manifest themselves in a variety of ways and can lead to business relationships characterized by mistrust and lack of cooperation.

119. Attempts to avoid hold-up problems often require the parties to write very specific contracts to prevent the risks associated with re-negotiation. But writing "complete" contracts can be costly and time-consuming and in many cases may not be possible at all.[153] For example, *Besanko et al. (2003)* write:[154]

> When each side anticipates the possibility of holdup, the initial contract negotiations are likely to be time consuming and costly, as each party

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[152] For a general description of transaction costs and hold-up problems, *see Besanko et al. (2003)*, Chapter 3.

[153] *Besanko et al. (2003)*, 119-121.

[154] *Besanko et al. (2003)*, 134.

> attempts to protect itself against being held up later on. But if the relationship is sufficiently complex, the ability to write complete contracts that safeguard each party is limited, and as circumstances change in unanticipated ways, the temptation for a party to hold up its trading partner is likely to lead to frequent renegotiations of contracts.

120. Put simply, if firms were able to write contracts that could take into account every detail in all possible contingencies, future re-negotiation would not be necessary, and there would not be any hold-up problem. But transaction costs make such contracts costly or impossible and hold-up problems are common in practice.[155] This is particularly true when complex systems are involved, as the need to coordinate specific technical details may add to the complexity and transaction costs of forming arms-length contractual arrangements.

121. The related problem of double marginalization can also arise when contracts are incomplete. Double marginalization may arise when two vertically related firms collaborate to supply a good.[156] Each firm, to the extent that it has any market power, will

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155 *Besanko et al. (2003)*, Chapter 3; Benjamin Klein, Robert G. Crawford, and Armen A. Alchian (1978), "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," *Journal of Law and Economics*, 21: 297-326; Steven Shavell (2007), "Contractual Holdup and Legal Intervention," *Journal of Legal Studies,* 36: 325-354.

156 *See generally*, W. Kip Viscusi, John M. Vernon, and Joseph E. Harrington (2005), *Economics of Regulation and Antitrust*, 4th edition, Cambridge: MIT Press, 238. ("If an input supplier has market power, then it will charge in excess of marginal cost. This causes too little of the input to be used, which entails a welfare loss. If, in addition, the downstream firm purchasing the input has market power, then it too will charge a price in excess of its own marginal cost, incurring yet another welfare loss. Thus, the price of the

include a mark-up (above marginal cost) in the price it charges. Consequently, the price of the final good will reflect the mark-up of both the upstream and the downstream firm and, all else equal, will be higher than the price a vertically integrated firm (or two separate firms that could write complete contracts) would charge.

122. A specific example of double marginalization, to which I will return below, arises when a cable operator (*e.g.*, Comcast) serves as an aggregator for another cable operator (*e.g.*, TWC) to offer business services to a business that spans the footprints of the two firms.[157, 158] In this situation, Comcast could theoretically purchase business services on a wholesale basis from TWC, package those services with its own services, and then sell the package to the consumer. However, given that TWC includes a markup in its wholesale price, a double marginalization problem arises, raising prices to the ultimate customers, reducing Comcast's ability to win the contract, and thus reducing Comcast's incentives to offer the package in the first place.

123. In order to align business incentives, contracts must lay out, in sufficient detail,

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input is marked up twice: by the upstream firm and, in terms of the final product price, by the downstream firm. This is known as double marginalization.").

157 Aggregators combine services from multiple cable operators and telcos in order to serve customers with locations that span the footprints of the providers. In many cases, aggregators also provide additional services like firewall and security systems.

See further discussion in Section IV.A.2.

158 I note that in this situation the firms would still need to write a contract that, for example, spells out which firm is responsible for dealing with customer service calls and other aspects of the client relationship.

business terms in addition to the technical terms, something that may be difficult or impossible in practice. For example, the contract may need to make explicit what efforts each party must undertake with respect to acquiring customers, how revenue from those customers will be divided, and so on.[159] The absence of such terms in a contract raises concerns about who owns the relationships with customers and whether potential collaborators may funnel the best work back to their core businesses. Such uncertainty and associated distrust can lead firms to under-invest in relationship-specific assets, if they invest at all.[160]

124. The need to write highly detailed contracts may lessen or destroy the value of coordination for several reasons. First, because it is often impossible to write a fully complete contract, hold-up problems are likely to persist in nearly all attempts at collaboration. Second, attempts to write relatively complete contracts are likely to be costly and time-consuming, thus delaying the benefits (and increasing costs associated with delivering such benefits) if they occur at all. Third, costs and delays in reaching agreements may undermine the incentive to undertake the collaboration in the first place. Fourth, the need to write relatively complete contracts may substantially reduce the flexibility that is often required to react and adapt to dynamic marketplace conditions.

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159 The technical and business terms discussed here are examples of different terms that firms could attempt to exploit ex post if not specified with sufficient precision in the contract, illustrating the hold-up problem.

160 *Besanko et al. 2003*, 136.

125. In previous transactions, the Commission has recognized that the difficulties in coordination make Type I business services (provided by a single firm) more attractive than Type II services (involving partnership between two or more providers).[161] For example, in *SBC-AT&T*, the Commission concluded:[162]

> The record evidence suggests that many purchasers of wholesale special access services view Type I services as substantially superior to Type II services, *due to differences in performance, reliability, security, and price*, and that these differences are sufficiently large that Type I special access services fall into a separate relevant product market from Type II.

126. A merger provides a means to overcome the challenges in arms-length arrangements. Internal governance structures are often able to overcome the coordination and incentive problems discussed above, thus avoiding the costly problems associated with cross-firm collaboration via contract. And by relying on common incentives—rather than detailed contracts—to guide future decisions, a merged firm will be able to adapt to rapidly changing market conditions, rather than having its hands tied by detailed contractual terms that are unlikely to fully anticipate changing needs in rapidly evolving marketplace.

127. In the following section, I discuss examples of hold-up and coordination problems that have arisen in previous attempts by cable operators to collaborate with each other.

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161 Memorandum Opinion and Order, *In the Matter of SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control,* WC Docket No. 05-65 (2005), ¶ 26 [emphasis added].

162 *Id.*, ¶ 26 [emphasis added].

(b) Failed or stunted efforts at collaboration illustrate the difficulties of such an approach

128. The failure of certain historical partnership initiatives among cable operators provides an informative series of case studies demonstrating the validity of the economic theories regarding the difficulties in coordination.[163] For example, Comcast has attempted to partner with cable operators to enhance and/or license its technologies, but these efforts have often been met with substantial coordination problems.[164] In certain cases, cable operators have resisted coordination with Comcast, for example, [[

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129. The problems with partnering as a way to increase scale are well illustrated by Canoe Ventures, a joint venture launched by the six largest cable operators in 2008 to set

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163 [[

]]. (Greg King, Senior Vice President, Commercial Product & Strategy, TWC, March 7, 2014, interview.)

164 I do not mean to suggest that all attempts to partner across cable operators entirely fail. For example, I understand that Comcast has been pursuing an X1 licensing arrangement with another cable operator for several months now and has come close to reaching initial terms for a trial. However, even after the several months of negotiations, [[

]]. (*See, e.g.*, Jeff Baumgartner, "Comcast, Cox in X1 Licensing Talks," *Multichannel News*, January 28, 2014, *available at* http://www.multichannel.com/distribution/comcast-cox-x1-licensing-talks/147949, *site visited* April 2, 2014.)

165 Kevin Leddy, Executive Vice President, Corporate Strategy, TWC, February 28, 2014, interview.

up a jointly owned company that would develop and deploy a common advanced advertising system to enable the planning, sale, delivery, reporting, and accounting, on a national and regional basis, of various types of advanced advertising products and services.[166] The varying technical standards and technologies across the cable operators made it difficult to develop a simple platform on which to launch a unified service, and differences in priorities, approaches, and strategies among the cable operators presented insurmountable hurdles for Canoe's effective operation.[167] As a result, Canoe was not able to reach its original goals as quickly as hoped or at the scale contemplated, and Canoe was scaled back in 2012 to focus primarily on the VOD insertions business in the short term.[168]

130. Another example relates to the companies' effort to collaborate on a shared TV Everywhere site or application that would have provided a common portal for customers to access their respective provider's TV Everywhere content. The initiative was also designed to work with third-party manufacturers to implement this application on their

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166 Tim Arango, "Cable Firms Join Forces to Attract Focused Ads," *New York Times*, March 10, 2008, *available at* http://www.nytimes.com/2008/03/10/business/media/10cable.html, *site visited* March 31, 2014.

167 Jeanine Poggi, "Canoe Ventures Pulls Plug on Interactive TV Commercials Business," *Advertising Age*, February 22, 2012, *available at* http://adage.com/article/media/canoe-ventures-ends-interactive-tv-commercials-business/232874/, *site visited* March 31, 2014.

168 Todd Spangler, "Exclusive: Canoe to Shutter Interactive TV Ad Business, Lay Off 120," *Multichannel News*, February 22, 2012.

devices.[169] The idea behind the project was to create a common "front-door" that would provide a common user experience regardless of which cable subscription was used. However, this attempt at collaboration failed because the cable operators could not agree on the technical specifications, among other differences.[170]

131. In sum, rather than suggest a way that the benefits from the proposed transaction may not be specific to the merger, the history of attempted-but-failed cable operator collaborations illustrates both the importance of scale—motivating cable operators' ongoing attempts to achieve this scale via partnership—*and* the insufficiency of arms-length agreements for obtaining that scale and the need for a merger to fully achieve scale-based benefits.

IV. BROADBAND-RELATED BENEFITS FROM THE TRANSACTION

132. Applying the economic principles articulated in Section III leads to the conclusion that the transaction will generate significant broadband-related benefits. In this section, I provide examples of the types of benefits that business customers, residential customers, and edge providers are likely to realize from the proposed transaction. I begin with benefits to business customers, and I then turn to benefits to residential customers and

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169 *See* Declaration of Michael J. Angelakis, ¶ 17.

170 *See* Declaration of Michael J. Angelakis, ¶ 17.

edge providers, including a discussion of how the network build-outs associated with the benefits to business customers will also benefit residential customers and edge providers.

A. THE PROPOSED TRANSACTION WILL GENERATE SIGNIFICANT, PRO-COMPETITIVE BENEFITS TO BUSINESS CUSTOMERS

133. As discussed below, Comcast and TWC are both recent entrants into business services (relative to incumbent telcos)[171] and those services comprise a relatively small portion of each firm's current revenue. As such, the opportunities to compete more effectively and thus capture a larger share of the potential business in this segment are enormous. Indeed, the ability to compete more effectively for business customers is a core motivation for the transaction. Both Comcast and TWC believe that the transaction will allow them to provide more valuable business services than can either firm standing alone.[172]

134. Independent, third-party analysts have also concluded that the enterprise and wholesale segments represent an important opportunity for the combined firm. For example, MoffettNathanson, noting that "the Balkanization of the nation's cable footprint means not all customers are viable targets," concluded that enterprise represents a

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171 Incumbent telcos (or alternatively incumbent local exchange carriers) are those local telephone companies that were in existence at the time of the AT&T breakup.

172 Public Interest Benefits Summary Statement accompanying the announcement of the transaction on February 13, 2014.

"profound opportunity."[173] And, for the reasons described below, the combined firm will, in fact, become a substantially more effective competitor for business customers, creating greater competition in a segment long dominated by the incumbent telcos.

135. By increasing the scale and scope of the combined firm, the transaction strengthens the combined firm's ability to serve business customers, thus benefiting those customers in at least three ways. First, in the case of businesses whose locations span the footprints of multiple cable operators ("super-regional" businesses), the transaction helps to alleviate the coordination problems (described in Section III.C.2) that currently plague efforts by cable operators to serve those businesses. Second, the transaction combines the complementary skills and products of the two companies and facilitates the provision of higher quality business services. Third, as explained above, the combined firm can spread fixed cost investments over a larger group of current and potential business customers, thereby incentivizing new investment and innovation that benefits those business customers.

136. The discussion in the remainder of this section describes many ways in which the transaction is likely to benefit business customers. I understand that the report of Drs. Rosston and Topper also addresses benefits of the transaction for business customers. However, while Drs. Rosston and Topper include a discussion of enhanced video and

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[173] Craig Moffett, "Comcast and Time Warner Cable: Is Bigger Better?" *MoffettNathanson*, Conference Call, March 31, 2014, 18.

telephony services for business customers, I focus attention entirely on broadband, as part of a unified discussion of the broadband benefits for business customers, residential customers, and edge providers, developed throughout the remainder of this declaration.

1. Comcast and TWC each have only a small presence in business services

137. By way of background, both Comcast and TWC are relatively recent entrants into business services and have achieved only modest success so far. Comcast estimates the total size of the business segment in the combined footprint (including data, voice, and video services to small, medium, and large business (enterprise) customers) to be {{ }} per year, relative to combined revenue for the two firms of only $5.5 billion, yielding a combined a share of less than {{ }} percent.[174] Breaking out the segments in more detail, Comcast and TWC together account for only approximately 10 to 15 percent of the small and medium-sized business segment in their combined footprint, and their

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[174] *See* [[ ]].

As a rule of thumb, Comcast defines small businesses to be those with 20 or fewer employees, medium-sized businesses to be those with between 20 and 500 employees, and large (or "enterprise") businesses to be those with greater than 500 employees. However, I understand that these definitions are not hard-and-fast rules.

Comcast and TWC business services generated $3.2 and $2.3 billion in revenues in 2013, respectively. Thus, the combined share of revenues in the footprint is approximately 9.5 percent (*i.e.*, $5.5 billion/$58 billion.) ([[ ]]; *Comcast 2013 10-K*, 53; *TWC 2013 10-K*, 37.)

share of the enterprise segment is negligible.[175] Accounting for their limited footprint, Comcast and TWC together account for only approximately 6.4 percent of the overall business services segment in the entire United States.[176] The incumbent telcos, which have been active in the business services segment for a much longer period of time than Comcast or TWC, account for the vast majority of revenue in the segment, both within Comcast and TWC's combined footprint and more broadly across the country.[177]

138. Comcast entered the business services segment in earnest in 2006 by supplementing its residential offerings with new services (offering products such as website hosting service; an interactive tool that allows customers to share, coordinate, and store documents online; IP services and firewall/router capability; and other services) and

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175 Liana B. Baker, "Comcast: Business services is sweet spot in Time Warner Cable deal," *Wall Street Journal*, April 1, 2014, *available at* http://www.reuters.com/article/2014/04/01/us-comcast-twc-business-analysis-idUSBREA3022F20140401, *site visited* April 6, 2014. ("'The higher you move upmarket, the tougher it's going to be. The combined company will have a bigger regional footprint than AT&T and Verizon but AT&T and Verizon have developed a national structure that'll be hard to crack . . . .'"). *See also* Declaration of Michael J. Angelakis, ¶ 32.

176 Charlie Reed, "Comcast-TWC Merger to Create Fourth Largest Business Services Player," *Telecom Reseller*, Feb. 13, 2014, *available at* http://www.telecomreseller.com/2014/02/13/comcast-time-warner-cable-merger-to-create-fourth-largest-business-services-player/, *site visited* March 27, 2014.

177 For example, MoffettNathanson estimates that AT&T, Verizon, and CenturyLink account for approximately $60 billion (84 percent) of "Enterprise and Wholesale" revenue (with Level 3, Sprint, tw telecom, and Cogent accounting for much of the remainder). Although this figure is not directly comparable to Comcast's revenue estimates, it nonetheless illustrates that the incumbent telcos are likely more than ten times as large as Comcast and TWC in terms of business services revenue. (*See* Craig Moffett, "Comcast and Time Warner Cable: Is Bigger Better?" *MoffettNathanson*, Conference Call, March 31, 2014, 18.)

targeting small businesses, many of which are operated in the home. As of 2013, revenue from commercial products and services accounted for less than ten percent of total revenue for Comcast Cable.[178]

139. In 2010, Comcast began offering more advanced services, including Ethernet-based services built on its fiber network, to medium-sized businesses. Comcast is just starting to compete to provide services to larger enterprise businesses, but is hampered by its limited geographic scope (a point I return to in Section IV.A.2(a), below).[179] As of the end of 2013, small businesses accounted for approximately 80 percent of Comcast's business services revenue, with medium-sized businesses accounting for the remainder, and no material revenue from large enterprises.[180]

140. Similar to Comcast, TWC's business services segment is a limited part of its overall business: Business services account for only approximately ten percent of TWC's revenue.[181] Small businesses account for approximately 85 percent of TWC's business

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178 *Comcast 2013 10-K*, 53.

179 I understand that Comcast had opportunistically pursued National Accounts prior to 2006, but that these efforts were limited due to Comcast's lack of scale. (Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interview.)

180 *Comcast 2013 10-K*, 54. *See also*, Ian Olgeirson, "Footprint, Service Expansion Pushes Higher Commercial Revenue Forecast for US Cable," SNL Kagan, February 27, 2014, *available at* http://www.snl.com/interactivex/article.aspx?id=27031371&KPLT=6, *site visited* March 28, 2014.

181 *TWC 2013 10-K*, 37.

services customers and 60 percent of its annual business services revenue.[182] TWC typically sells broadband services based on Data Over Cable Service Interface Specification ("DOCSIS") technology to these small business customers. Like Comcast, TWC only recently began competing for larger businesses (a point I return to below).[183]

2. The integration of Comcast and Time Warner footprints, assets, and capabilities creates a substantial opportunity to serve more business customers

141. In the remainder of this section, I first describe the economic forces that will increase the incentive and ability of the combined firm to compete for both regional and super-regional business customers. I then describe the large competitive benefits that will result from an expanded role for the combined firm in business services.

(a) The benefits of expanded geographic scope

(1) Profitability-based assessment of bidding on business opportunities

142. When deciding whether to bid to serve multi-location businesses, Comcast and TWC consider the overall profitability of a project, including the cost to build-out their

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182 Ian Olgeirson, "Footprint, Service Expansion Pushes Higher Commercial Revenue Forecast for US Cable," SNL Kagan, February 27, 2014, *available at* http://www.snl.com/interactivex/article.aspx?id=27031371&KPLT=6, *site visited* March 28, 2014.

183 Phil Meeks, Executive Vice President and Chief Operating Officer, Business Services, TWC, March 7, 2014, interview.

respective networks to reach each location.[184] In the case of locations residing within a cable operator's existing footprint, the magnitude of the costs will depend, to a large extent, on the locations of the business customer relative to the location of the existing network.[185] As a general matter, which I describe in more detail below, margins are higher on on-net locations (meaning locations reached by the existing network) and within-footprint locations close to the existing network than on within-footprint locations that are far from the existing network or out-of-footprint locations. *Hence, all else being equal, Comcast and TWC are more likely to bid on and win projects for which a greater proportion of locations are within footprint, particularly projects with many locations that are within or near the provider's existing network.* Thus, as described below, to the extent the proposed transaction increases the percentage of locations that are within-footprint locations for any given bidding opportunity, it increases the chances that the combined firm can bid on and win that opportunity.

143. As a specific example of Comcast's process for assessing the overall profitability of a business services project before bidding on it (and its reliance on hurdle rates),

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184 My understanding of how Comcast and TWC structure the services that they provide to the business segment is based on Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews, and Phil Meeks, Executive Vice President and Chief Operating Officer, Business Services, TWC, March 7, 2014, interview.

185 In the case of locations outside of the existing footprint, the build-out requires partnering with another network provider.

consider the recent example of Comcast's negotiations with a major wireless provider to provide backhaul service {{

}}.[186] Although this example is based on building out its within-footprint network, it more broadly illustrates the incentives Comcast and TWC face whenever they decide on serving multi-location businesses, including super-regional businesses. According to Comcast's financial modeling, the most profitable number of sites for this transaction would have been {{

}}. However, in order to secure {{

}} less profitable sites.

{{

}}, Comcast would not have the economic incentive to undertake the project because the overall profitability of the project would fall below the required hurdle rate.

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186 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 25, 2014, interview.

(2) The costs and challenges to serve multi-location—particularly super-regional--businesses

144. To provide service to within-footprint locations that are not currently connected to its network, Comcast (or TWC) must undertake costly network investment to connect each location to the network. This process entails several steps including designing the network to connect to the facility, procuring equipment, obtaining rights to dig and lay fiber or to attach to a pole, laying down or stringing the conduit, obtaining the right of entry to customer location, and designing the in-building network.[187]

145. Providing service to out-of-footprint locations is generally even more challenging than building out the network within footprint. To provide service to out-of-footprint locations, Comcast or TWC must partner with one or more network providers to provide services out of its footprint. When Comcast (or TWC) does so today, it typically purchases "off-net" business services on a wholesale basis from the provider(s) that cover the locations not in Comcast's (or TWC's) footprint and then packages those services along with its own to sell to the super-regional business (*i.e.*, it offers Type II services).[188] In effect, the cable operators enter into a vertical arrangement under which the partner provider serves as the upstream supplier of business services within its footprint and

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187 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 25, 2014, interview.

188 [[ ]].

Comcast serves as the downstream distributor of those services (packaged with its own, within-footprint business services).

146. As explained in Section III.C.2, above, such a partnering approach raises several challenging economic issues, including coordination problems and double marginalization.

147. First, consider the coordination problems associated with multiple firms serving a single customer. In order to compete with incumbent telcos, I understand that it is important to provide a seamless experience to such customers, particularly for broadband services carrying sensitive or critical business services or data.[189] But such a seamless experience may be difficult to achieve across multiple firms, especially when those firms vary in their business practices. Today there are many differences between Comcast and TWC in those practices, including:

- separate network operations centers ("NOCs");
- different service level agreements ("SLAs");
- different product descriptions;
- different practices and policies; and
- different customer service phone numbers to call when something goes wrong.

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189 This paragraph is based on interviews with Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, February 28, 2014 and April 3, 2014.

148. More generally, TWC indicates that, variation in speed, monitoring, and service quality makes it more difficult to provide a consistent, seamless experience to its business customers located in different sites when partnering with other cable operators.[190] Similarly, Comcast faces challenges associated with coordinating vendor management, quoting, ordering, service delivery (including testing and right of entry), troubleshooting, and billing.[191] Such coordination problems raise issues that may be difficult to resolve via contract for the reasons described in Section III.C.2 and, even if they could be resolved, would be much harder, take longer, and likely never get to the same level of effectiveness as they would under a single company with one brand.[192] Incumbent telcos, with their larger geographic footprints, often do not face the same hurdles. As a result, although Comcast and TWC continue to experiment with these types of offerings with one another and with other partners, they have difficulty offering high-quality products that can compete with incumbent telcos.

149. In contrast, the transaction positions the combined firm to be able to offer consistent service level agreements, integrated end-to-end monitoring, faster and more

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190 Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, February 28, 2014, interview.

191 [[ ]].

192 Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, April 3, 2014, interview.

seamless problem resolution, similar product definitions, and a single brand, and thus to compete more effectively with the incumbent telcos.[193]

150. Second, consider the economic incentive problems associated with partnerships across multiple providers to serve a single business customer. These issues, which are driven by the substantially lower margins earned on out-of-footprint locations, are well recognized at Comcast and TWC. For example, Comcast uses the term "owner economics" to describe the higher margins that it earns when serving within-footprint locations relative to the margins it earns on out-of-footprint service purchased on a wholesale basis from partner providers. Comcast estimates that it earns approximately {{ }} margins on out-of-footprint service {{ }}, whereas it earns margins of {{ }} on in-footprint service.[194] This difference in margins is a symptom of double marginalization—Comcast's margin on out-of-footprint service is lower because the cost to Comcast reflects the mark-up charged by its partner.

151. The lower margins earned on out-of-network locations have two important implications for business customers.

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193 Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, April 3, 2014, interview.

194 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews. *See also*, [[ ]].

- First, the lower margins make it less profitable for Comcast (or TWC) to bid on a project and increase the likelihood that a project will fail to meet Comcast's (or TWC's) internal hurdle rates. To the extent that the lower return arising from double marginalization prevents Comcast (or TWC) from bidding on a project, competition in the business services segment is reduced. For example, of the {{ }} business opportunities evaluated by Comcast over the past {{ }} months for contracts requiring off-net connectivity {{ }}, Comcast won only {{ }} of the bids. Comcast did not bid on {{ }} of these opportunities as it could not come up with a viable off-net solution to fulfill the contract, and lost bids (or is still waiting to hear from the customers) for the remaining {{ }} opportunities.[195]
- Second, even to the extent that Comcast (or TWC) finds it worthwhile to bid on a project, the higher costs often lead to higher prices. For example, Comcast recently assessed three service packages sold to super-regional firms and concluded that the customers paid between {{ }} more than they would have paid had Comcast been able to serve all of the customers' locations "on-net."[196]

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195 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 31, 2014, interview.

196 For example, {{

}} [[

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152. Reflecting the coordination and double marginalization issues that plague efforts to collaborate in order to offer business services to national accounts with numerous locations (*e.g.*, Starbucks), recent efforts by TWC and Comcast to serve such businesses have met with limited success. For example, after several years of conceptual discussions, TWC and Comcast finally began an initiative several months ago to partner to serve national accounts that span the footprints of the two firms by aggregating services.[197] However, the partnership remains nascent, as multiple years of efforts have resulted in only limited success.[198]

(3) The proposed transaction enhances the incentive and ability of the combined firm to bid on and win super-regional business opportunities

153. By combining the companies' footprints, the transaction alleviates both the coordination issues and the double-marginalization problems and makes it more profitable for the combined firm to bid on (and win) contracts from super-regional businesses. In particular, by replacing the lower "out-of-footprint" margins with higher "in-footprint" margins, the transaction will reduce the marginal costs (by eliminating the

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Although many factors—including construction costs—contribute to the price of any particular service, these examples nonetheless illustrate the higher costs that predominate in Type II service arrangements.

197 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 7, 2014, interview.

198 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 7, 2014, interview.

double margin) associated with any project that includes locations spanning the Comcast and TWC footprints, thereby making it more profitable for the combined firm to bid on more projects, benefiting consumers and increasing competition. Moreover, the combined firm will have an incentive to pass through some or all of the reduced marginal cost of serving super-regional businesses via lower prices, higher quality offerings, or both, because lowering prices and/or raising quality—and thus capturing more share—is profit-maximizing when marginal costs fall. In addition, as discussed in Section III.C.2, internal governance structures combined with common incentives are likely to be more effective in providing a well-coordinated offering than are contracts between independent firms, thus leading to higher quality and more seamless service.

154. Hence, any business whose locations span the footprints of Comcast and TWC stands to benefit from the transaction. (See Figure 4 for a map of the footprints today.) Post-transaction, the combined firm will have a presence in the majority of the large business centers in the United States. Comcast has identified six regions where merger-related benefits to business customers are likely to be particularly large:[199]

- *Northeast Corridor*: Combining Comcast services in Boston, New Jersey, Philadelphia, Baltimore, and Washington, DC with TWC services in New York City;

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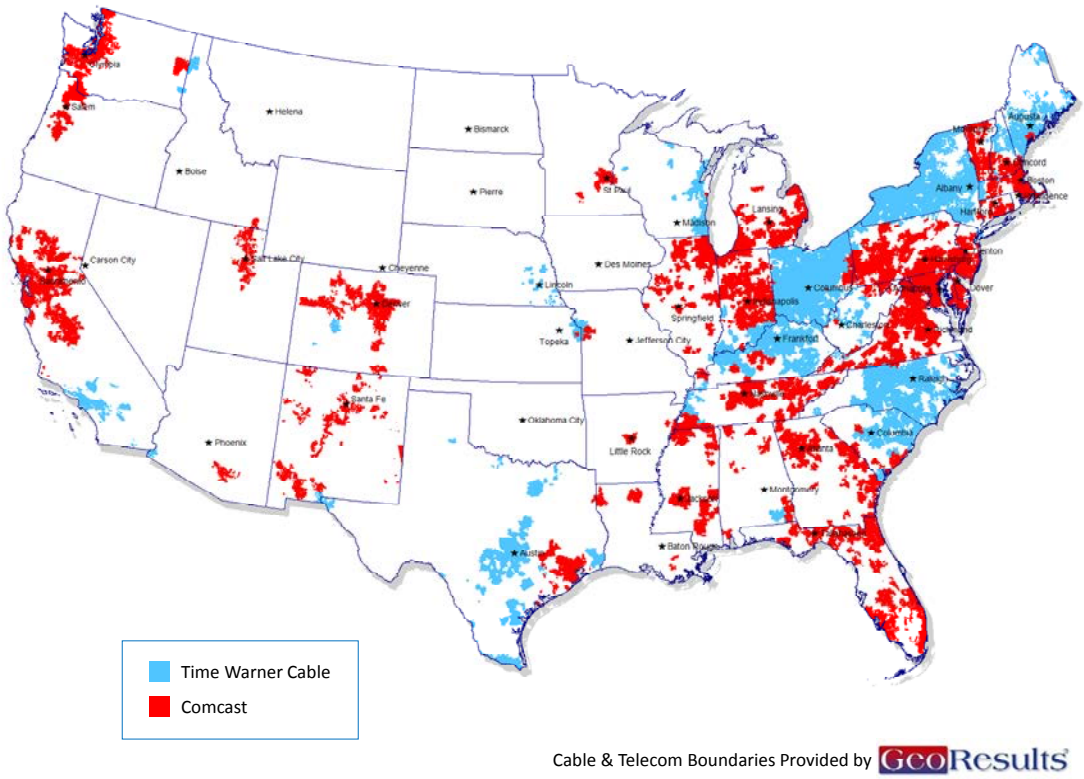
[199] Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014, interviews.

- *Midwest*: Combining Comcast services in Philadelphia, Pittsburgh, Detroit, and Chicago with TWC services in Cleveland and Columbus;
- *Midwest 2*: Combining Comcast services in Chicago, Detroit and Indianapolis with TWC services in Milwaukee, Green Bay, Kansas, Lexington, and Louisville;
- *Texas*: Combining Comcast services in Houston with TWC services in Austin, Dallas, and San Antonio;
- *Southeast***:** Combining Comcast services in Charleston, Atlanta, Mobile, Tallahassee, Jacksonville, and Miami with TWC services in Greensboro, Charlotte, Columbia, and Charleston; and
- *Pacific Coast*: Combining Comcast services in San Jose, San Francisco, Sacramento, Portland, and Seattle with TWC services in San Diego and Los Angeles.

Figure 4: Comcast and TWC Footprints



(b) The benefits of combined expertise

155. The sharing of best practices and technologies between the two firms will enable the combined firm to offer a more robust portfolio of broadband offerings across all locations in the combined footprint than could either separate firm. For example, although both companies currently offer speeds of 10 Gbps or more to business customers that use an FTTP solution, the fact that Comcast has invested in making its network all digital more quickly and on a more widespread basis than TWC means that it can offer a superior alternative (including faster speeds) to those business customers that do not need the full FTTP solution.[200] As described in more detail below, Comcast's experience in upgrading its network to all-digital will allow it to offer this superior alternative in the TWC footprint more quickly than TWC could on its own.

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[200] As discussed in Section IV.B.3, the transaction will accelerate the deployment of all-digital technology in the TWC footprint.

Based on its all-digital HFC network, Comcast currently offers top speeds of 150 Mbps downstream and 20 Mbps upstream. (*See* http://business.comcast.com/internet/business-internet/plans-pricing, *site visited* April 3, 2014.

In contrast, TWC typically offers top speeds of 50 Mbps downstream and 5 Mbps upstream. (*See* http://www.timewarnercable.com/en/business-home/services/internet.html, *site visited* April 3, 2014. Only where TWC has already upgraded its network to all-digital—in parts of New York City and Los Angeles—does it offer speeds up to 300 Mbps downstream and 20 Mbps upstream. (*See* Time Warner Cable, "Time Warner Cable to Transform TV and Internet Experience in New York City and Los Angeles," January 30, 2014, *available at* http://ir.timewarnercable.com/investor-relations/investor-news/financial-release-details/2014/Time-Warner-Cable-to-Transform-TV-and-Internet-Experience-in-New-York-City-and-Los-Angeles/default.aspx, *site visited* April 3, 2014.

156. The combined firm's business customer offerings will also benefit from TWC's technological capabilities. For example, TWC offers cloud services to mid-market business customers. TWC obtained these capabilities through its acquisition of NaviSite, an acquisition that was itself a reflection of TWC's strategy of focusing on mid-market business customers.[201] In contrast, Comcast's strategy has focused more on small business customers, and consequently, it would take Comcast years (and likely over $100 million) to develop these same capabilities.[202] Post-transaction, these valuable technological capabilities of TWC will be available to business customers throughout the combined footprint, including those in Comcast's current footprint.

(c) Additional benefits of greater scale

157. For the reasons discussed in Section III.A, the increased scale of the combined firm will increase the revenue potentially available from investments, thus enabling the combined firm to undertake projects with large fixed investment costs that would not have been profitable for either separate operator. For example, to meet the expanded business service opportunities created by the transaction, the combined firm will have a greater incentive to make the substantial investment required to serve large business customers, including laying fiber over a larger portion of the combined firm's footprint,

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201 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 26, 2014, interview.

202 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 26, 2014, interview.

which will be an integral part of this investment because large businesses need the robust, low latency network connections that fiber provides. I understand that Comcast believes that the transaction will incentivize greater investment in an expanded fiber network, as the greater scale allows the enormous fixed costs to be spread over a larger base of customers.[203]

158. I also note that expanding fiber deeper into wired networks is one of the core objectives of the Commission's National Broadband Plan.[204] As the National Broadband Plan recognized, "pushing fiber deeper into broadband networks considerably improves the performance and reliability of those networks."[205] As I discuss further in Section IV.B.3, such investments in network expansion will benefit residential consumers in addition to business customers.

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203 Declaration of Michael J. Angelakis, ¶¶ 33-39.

204 *See, e.g.*, Brian Fung, "A Report Card on the Nation's 4-Year-Old Broadband Plan – from the Man Who Wrote It," *Washington Post*, March 22, 2014, *available at* http://www.washingtonpost.com/blogs/the-switch/wp/2014/03/22/a-report-card-on-the-nations-4-year-old-broadband-plan-from-the-man-who-wrote-it/, *site visited* March 28, 2014.

205 Federal Communications Commission, "Connecting America: The National Broadband Plan," *available at* http://download.broadband.gov/plan/national-broadband-plan.pdf, *site visited* March 28, 2014 (hereinafter *National Broadband Plan*), 114.

3. Deeper penetration by cable operators into business services traditionally provided primarily by telcos is pro-competitive

159. By expanding the ability and incentive of the combined firm to compete in the business services segment—including competition for enterprise services where Comcast and TWC currently have a negligible presence—the transaction creates important new competition to the benefit of business customers. The benefits of this competition are proven by actual experience: Where cable operators have been able to compete for business services against the incumbent telcos, the result has been dramatically lower prices and/or improved service quality.[206] The following examples illustrate the benefits that have accrued to actual small and mid-sized business customers due to entry by Comcast and TWC.

- After switching to Comcast, several school districts in Pennsylvania, saw their bandwidths increase "exponentially, and in some cases for half the price," which has enabled them to obtain cloud computing services, video conferencing services, and other online educational tools that had been previously too expensive.[207]

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206 Industry observers have noticed the impact of this competition. For example, Rosemary Cochran of VSG notes, "Broader accessibility to on-net fiber has started to shake up the services markets. Fiber-based providers and Cable MSOs are capitalizing on the reach and cost advantages of their footprints juxtaposed to legacy infrastructures. Customers are reaping the benefits of more service options, more competitive pricing, and faster service installations." (Vertical Systems Group, "US. Business Fiber Gap Narrows in 2013," April 3, 2014.)

207 *See* "Back Office Business," *School CIO*, January 31, 2014, *available at* http://www.schoolcio.com/cio-feature-articles/0109/back-office-business/54654, *site visited* March 28, 2014.

- After switching to Comcast Ethernet to connect multiple office locations and distribution centers throughout the Eastern United States, Utz Quality Foods, Inc. realized "a significant savings, while enjoying more bandwidth than what our T1 lines had given us."[208]

- Union Bank in Ohio used T-1 broadband lines provided by five separate telecommunications carriers before switching to TWC. Switching to TWC has provided many benefits. For example, according to a TWC case study: [209]

> [T]he data transmission speed has doubled, having gone from 1.5 Mbps on the old T-1 lines to a blazing fast 3 Mbps bandwidth on TWCBC's state of-the-art fiber-optic network. As a result, the bank's data congestion problems are a thing of the past. . . . TWCBC was able to fulfill the bank's most stringent network security needs through its managed security program, which includes filtering and around-the clock monitoring that Union Bank is required to maintain [. . .] the solution has resulted in a tremendous reduction in the monthly cost of Union Bank's broadband service.

- A Texas town government (the City of Colleyville) "developed its first IT department in 2004 and began linking six data centers supporting seven city buildings running independently . . . . Their old copper T1 network came up short as Colleyville moved to an Internet-based system . . . . Already on the ropes because of the Great Recession, Colleyville also learned that its T1 costs were

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208 *See* "Utz Upgrades Connectivity for Offices, Distribution Centers," *The Evening Sun* (Hanover, PA), April 24, 2013, *available at* http://www.eveningsun.com/news/ci_23096622/utz-upgrades-connectivity-offices-distribution-centers-including-hanover, *site visited* March 28, 2014.

209 Time Warner Cable, Case Study, "The Union Bank Company Cashes in on Blazing Fast Ethernet and Managed Security Services from Time Warner Business Class," November [2013], *available at* http://www.timewarnercable.com/en/business-home/resource-center/case-studies/union-bank-company.html, *site visited* March 25, 2014.

rising drastically."[210] Switching to TWC has provided many benefits to Colleyville. For example, according to a TWC case study:[211]

> The TWCBC secure and fiber-rich EVPL [Ethernet Virtual Private Line] network, scalable up to 10 Gbps+, [which] helps with routine government tasks . . . . It has also enabled . . . Colleyville to centralize servers, applications and terabytes of data storage from six to two data center facilities. The centralization has brought numerous enhancements to city administration, such as hardware and electricity cost savings, data synchronization across all its facilities, centralized sewage and water monitoring systems, enabling online training for firefighters and police officers and desktop virtualization.

160. The telcos have also responded to the entry of TWC, Comcast, and other cable operators into the business services segment by, for example, increasing broadband speeds and adding features to their broadband and related offerings, to the direct benefit of business customers. In particular, I understand that telco speeds have increased from six Mbps a few years ago to 45+ Mbps today and that such speed increases required expensive fiber extensions to shorten the copper loop lengths.[212] I also understand that Comcast believes it was pressure from higher-speed cable data services that caused these

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210 Time Warner Cable, Case Study, "City of Colleyville Modernizes their Network with Time Warner Cable Business Class Fiber-Rich Ethernet Services," November 2013, *available at* http://www.timewarnercable.com/en/business-home/resource-center/case-studies/city-of-colleyville.html, *site visited* March 25, 2014.

211 Time Warner Cable, Case Study, "City of Colleyville Modernizes their Network with Time Warner Cable Business Class Fiber-Rich Ethernet Services," November 2013, *available at* http://www.timewarnercable.com/en/business-home/resource-center/case-studies/city-of-colleyville.html, *site visited* March 25, 2014.

212 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 26, 2014, interview.

speed increases to occur.[213] In addition, telcos have also added features to their service bundles to counter cable's faster speeds and attempt to win back lost business customers. For example:[214]

- Verizon has added Google Apps and sometimes a second phone line;
- CenturyLink's Core Connect bundle has added website design and hosting to its Internet Office (DSL) and Core Connect (IP voice/data) services, along with domain name registration, fax over email and data backup;
- AT&T's "All For Less" business bundles offer a mix of wireline and wireless, along with mix-and-match data backup, applications and IT support.

B. THE PROPOSED TRANSACTION WILL LEAD TO FASTER, MORE RELIABLE BROADBAND SERVICE, BENEFITING BOTH RESIDENTIAL CUSTOMERS AND EDGE PROVIDERS

161. As described more fully below, and consistent with Comcast's proven track record of high quality broadband service, the proposed transaction will generate faster and more reliable broadband service for the combined firm's customers. Critically—and in direct

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213 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation March 26, 2014, interview.

214 *See generally*, Verizon Inc., "FiOS Internet," http://www.verizon.com/smallbusiness/products/business-FiOS-Internet/packages/fiosInternetOverview.jsp?smbReferenceValue=SMBFIOSInternetPackageRef, *site visited* April 3, 2014; AT&T, "Internet," https://www.att.com/smallbusiness/productIndex.jsp?prodType=internet&wtLinkName=SMBIDChildFamily-InternetAccess-KnownLocationPg_Internet&wtLinkLoc=SMBIDChildFamily-InternetAccess-KnownLocationPg_Breadcrumbs&WT.svl=3, *site visited* April 3, 2014; Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 26, 2014, interview.

contrast to any claims that the transaction will harm edge providers—these improvements in broadband service help not only residential broadband customers but also edge providers, because the platform on which they interact with consumers will improve.

162. In the remainder of this section, I first explain that improved broadband service will help both residential customers and edge providers, fostering a "virtuous circle" that benefits both sides of the market and stimulates competitive reactions that further benefit both Internet consumers and edge providers. This conclusion follows directly from the complementarities between edge services and high-quality broadband service that the Commission has recently recognized. I then explain the sources of improved broadband service in terms of (i) benefits from sharing the distinct strengths of the two firms today and (ii) the ways in which the transaction will spur new investments.

1. Improved broadband service leads to a "virtuous circle" that benefits not only residential broadband customers but also edge providers

163. The Commission has recognized that, due to complementarities between edge services and the provision of broadband, improvements in either edge services or broadband networks leads to a "virtuous circle" of innovation.[215] The Commission has described it as:[216]

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215 *See also*, Section II.B.1(a).

216 *Open Internet Order*, ¶ 14. *See also*, *Verizon v. Federal Communications Commission et al.*, No 11-1355, United States Circuit Court of Appeals, January 14, 2014, 4 (noting that

> "…a virtuous circle of innovation in which new uses of the network—including new content, applications, services, and devices—lead to increased end-user demand for broadband, which drives network improvements, which in turn lead to further innovative network uses."

Similarly, Jon Sallet, Acting General Counsel, FCC, recently noted:[217]

> Metcalfe's law tells us that the addition of each single additional user to a network creates more than one unit of additional value to the network as a whole. Not just for new users, but for every user and edge provider, including the businesses in Silicon Valley that create networking apps, software, and hardware.

Put simply, faster broadband speeds lead to an increase in edge services, which leads to more usage of the network, which attracts more edge providers and creates more incentives to improve broadband network speed and quality, and so on.

164. This "virtuous circle" can be understood in the context of the economics literature on two-sided platforms and network effects (or "network externalities").[218] A two-sided market brings together two types of users (*e.g.*, residential broadband customers and edge

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the Commission's "virtuous cycle" analysis "is reasonable and supported by substantial evidence").

217 "Prepared Remarks of Jon Sallet Acting General Counsel, Federal Communications Commission," Conference on Competition and IP Policy in High-Technology Industries, Stanford, CA, January 22, 2014, *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0124/DOC-325267A1.pdf, *site visited* March 28, 2014, 4.

218 *See, e.g.*, Jean-Charles Rochet and Jean Tirole (2006)."Two-Sided Markets: A Progress Report." *The RAND Journal of Economics*, 37: 3; Joseph Farrell and Paul Klemperer (2007), "Coordination and Lock-In: Competition with Switching Costs and Network Effects," in *Handbook of Industrial Organization*, Volume 3, Mark Armstrong and Robert Porter, ed, Amsterdam: Elsevier; Marc Rysman (2009), "The Economics of Two-Sided Markets," *Journal of Economic Perspectives*, 23: 125-143.

providers) through a common platform (*e.g.*, the broadband network). Network effects "are present in markets where the value of a product or service to each customer is affected by the number of other customers who use it."[219] Indirect network effects arise when a group on one side of the platform (*e.g.*, end-users) benefits from more units on the other side of the platform (*e.g.*, edge providers) and vice versa. Indirect network effects can be understood as economies of scale that generate increasing returns.[220]

165. In the context of the proposed transaction, residential broadband customers and edge providers represent "two sides" of the market, brought together through the provision of broadband services. Importantly, improvements in broadband services benefit both sides of the market and trigger the virtuous circle of innovations through network effects. Consider a network improvement by a broadband provider that increases the quality of an edge service (*e.g.*, faster broadband speed allowing for higher video streaming resolution). The increase in the quality of the edge service increases the value of broadband usage to end-users and increases demand for broadband services, which in turn increases the returns on investment and induces more innovations by all edge providers on this platform.

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219 Jeffrey A. Eisenach (2012), "Broadband Competition in the Internet," American Enterprise Institute, *available at* http://www.aei.org/files/2012/10/17/-broadband-competition-in-the-internet-ecosystem_164734199280.pdf, *site visited* March 28, 2014, 4.

220 *See Farrell and Klemperer (2007)*, 1974. ("From a cooperative game theory perspective, network effects are just economies of scale: the per-buyer surplus available to a coalition of buyers and a seller increases with the size of the coalition.")

166. Moreover, the virtuous circle of innovation, via two mechanisms, may induce a reaction from other broadband providers, including those that do not compete directly with the combined firm.

- First, improvements in Comcast's network will induce ISPs with which it competes to improve their own networks in competitive response. The history of broadband development in the United States is characterized by a long history of competitors developing new technologies that lead to higher broadband quality. For example, telcos have made investments in advanced DSL largely in response to the success of cable broadband.[221] Indeed, competitors have already indicated that the proposed transaction is causing them to accelerate their investments and fiber deployments. For example, as noted previously, Randall Stephenson, Chairman and CEO of AT&T, recently stated:[222]

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221 "AT&T Inc. at Goldman Sachs Communacopia Conference," Final Transcript, September 24, 2013. ("And it is going to be a dogfight between us and cable for the next 20 years; I don't see that changing. They will invest and they will step up. We will invest, it will go back and forth. But I feel really good that we will -- we're doing very well against cable today.")

Similarly, industry analysts agree that telcos are exerting competitive pressure on cable operators, including Comcast and TWC. (*See, e.g.*, Marguerite Reardon, "Why a Comcast Merger Could be Good for TWC Customers: How Can One of the Biggest Mergers in the Cable Market Ever be a Good Thing for Consumers? CNET's Marguerite Reardon explains," *CNET*, March 15, 2014. (". . . AT&T and Verizon Communications -- and to a much lesser extent, Google, are providing more incentive to all cable operators to increase their network speeds. Comcast actually faces less competition in its markets from Google and the phone companies than Time Warner Cable, and the increased exposure to this threat could spur faster improvement in the network. 'AT&T and Verizon are exerting tremendous pressure on the cable operators,' Brannon [Erik Brannon, senior analyst for US Television at HIS] said.")).

222 "AT&T's CEO Presents at Morgan Stanley Technology, Media & Telecom Conference (Transcript)," March 6, 2014, *available at* http://seekingalpha.com/article/2072813-at-

> ". . . in light of a new competitor, a new structure in the industry . . . we are going to be a little more aggressive and assertive in deploying that technology around the country . . . It's our peak year on fiber deployment and our IP broadband extension, and we're committed to finishing that especially in light of as I said the competitive dynamic changing with Comcast and Time Warner. So we want to get that finished in 2014."

- Second, because edge providers generally provide services through multiple broadband providers, the improvements in edge services described in this section will in turn increase demand for broadband services not only from the combined firm but also from other ISPs. This increased demand for broadband services at other ISPs creates incentives for them to improve their broadband infrastructure and improve their broadband quality to meet this demand. *As a result, any innovation by edge providers induced by this transaction will ultimately increase both broadband quality and the quality of edge services available to customers of other broadband providers, not just customers of the combined firm.*

2. A merger with Comcast will lead to improved broadband quality in the TWC footprint

167. Post-transaction, TWC customers can expect to benefit by being part of Comcast's broadband network. Comcast's track record of high quality broadband service is clear: Comcast has invested tens of billions of dollars on upgrades to its network infrastructure since 1996. The result of Comcast's track record of broadband investment has been dramatic performance improvements in its network. As one example, Comcast has

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and-ts-ceo-presents-at-morgan-stanley-technology-media-and-telecom-conference-transcript, *site visited* March 28, 2014.

increased broadband speeds 12 times over the past 12 years.[223] Today, Comcast offers peak residential speeds of 105 Mbps in all markets and as high as 505 Mbps in some markets.[224]

168. Comcast's commitment to high-quality broadband performance is reflected in actual outcomes. For example, Table 2 shows that the percentage of Comcast customers with downstream speed tiers of at least 25 Mbps increased from [[ ]] percent in December 2011, to [[ ]] percent in December 2012, and to [[ ]] *percent* in December 2013. The corresponding percentages for TWC were just [[ ]] percent, [[ ]] percent, and [[ ]] percent.[225]

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223 *See* David L. Cohen, "Comcast and Time Warner Cable Announce Merger, Detail Public Interest Benefits and Undertakings," February 13, 2014, *available at* http://corporate.comcast.com/comcast-voices/comcast-and-time-warner-announce-merger-detail-public-interest-benefits-and-undertakings, *site visited* April 2, 2014.

224 *See generally*, http://www.comcast.com/505, *site visited* Apr. 3, 2014; http://www.comcast.com/internet-service.html, *site visited* Apr. 3, 2014.

225 The difference between the two firms is narrower for lower speeds. For example, [[ ]] percent of Comcast customers and [[ ]] percent of TWC customers have downstream speeds of at least 3 Mbps, based on December 2013 data.

Table 2: Share of Total Subscriptions with At Least 25 Mbps Downstream

	Comcast			TWC & Insight		
Month	Subscriptions with at least 200 kbps downstream	Subscriptions with at least 25 mbps downstream	Share	Subscriptions with at least 200 kbps downstream	Subscriptions with at least 25 mbps downstream	Share
Jun-11	[[					
Dec-11						
Jun-12						
Dec-12						
Jun-13						
Dec-13						]]

Sources: FCC Form 477 data.

169. Similar patterns are evident when one considers upstream speeds. For instance, Table 3 shows that the percentage of Comcast customers with upstream speed tiers of at least 3 Mbps increased from [[ ]] percent in December 2011, to [[ ]] percent in December 2012, and to [[ ]] percent in December 2013. The corresponding percentages for TWC were just [[ ]] percent, [[ ]] percent, and [[ ]] percent.

Table 3: Share of Total Subscriptions with At Least 3 Mbps Upstream

	Comcast			TWC & Insight		
Month	Subscriptions with at least 200 kbps downstream	Subscriptions with at least 3 mbps upstream	Share	Subscriptions with at least 200 kbps downstream	Subscriptions with at least 3 mbps upstream	Share
Jun-11	[[					
Dec-11						
Jun-12						
Dec-12						
Jun-13						
Dec-13						]]

Sources: FCC Form 477 data.

170. As I describe further in Section IV.B.3(a), Comcast has already committed to accelerate TWC's network upgrade plans, including converting the TWC network to an all-digital network and bringing the speeds TWC customers receive up to Comcast's standards. For example, as a result of the transaction, TWC customers currently on

TWC's flagship speed tier of 15 Mbps/1 Mbps would see their speeds increased to Comcast's flagship speed tier of 25 Mbps/5 Mbps.[226]

3. Specific examples of improvements in broadband quality in both Comcast's and TWC's footprints due to the proposed transaction

171. In this section, I describe several of the specific mechanisms through which the transaction will benefit residential broadband customers (and thus edge providers via the virtuous circle), including:

- Improvements in network standards and technology;
- Improved wired network infrastructure;
- Improved wireless access networks; and
- Improved home networks.

I discuss each one of these benefits, in turn, below.

(a) Improvements in network standards and technology

172. I understand that customers of the combined firm will benefit from Comcast's commitment, plans and incentives to (i) upgrade all TWC systems to digital technology more quickly; (ii) facilitate optimal use of DOCSIS 3.0 in the combined footprint by making available more QAM channels for Internet service and deploying CCAP-enabled Cable Modem Termination Systems (CMTS); and (iii) deploy DOCSIS 3.1 in the near

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[226] Declaration of Michael J. Angelakis, ¶ 23.

future, each of which leads to improved broadband performance.[227] I further understand that, in combination, these technologies free up additional spectrum (by eliminating the need to use channels inefficiently to carry analog video), increase the spectral efficiency of the available spectrum, and bond more QAM channels, leading to substantially greater broadband speeds.

173. Starting in late 2008, Comcast undertook a network upgrade project to convert its network to all-digital.[228] By converting its network to all-digital, Comcast freed up approximately 250-300 Mhz of spectrum, which it then repurposed to provide faster broadband speeds.[229] In total, Comcast invested more than a billion dollars in making its entire network digital and deploying DOCSIS 3.0 by 2012.[230]

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227 *See* Declaration of Michael J. Angelakis, ¶ 24. *See also* "CMCSA - Comcast Corporation at Deutsche Bank Media, Internet and Telecom Conference," Edited Transcript, March 10, 2014, *available at* http://files.shareholder.com/downloads/CMCSA/0x0x732738/b11af39e-e366-4948-9ef9-3b05a9cbde09/Comcast%20at%20Deutsche%20Bank%20Conference%20Transcript.pdf, *site visited* March 28, 2014.

228 Internally, Comcast called this project "Project Cavalry." (*See* Comcast, "Going 'All-Digital' – Tons More HD and a Faster Internet," May 1, 2009, *available at* http://corporate.comcast.com/comcast-voices/going-all-digital_tons_more_hd_and_a_faster_internet, *site visited* March 28, 2014.)

229 "Comcast's Project Cavalry: The March of 28 Million DTAs," *Multichannel News*, May 5, 2009, *available at* http://www.multichannel.com/blogs/comcasts-project-cavalry-march-28-million-dtas, *site visited* March 28, 2014.

230 *See* [[ ]].

174. TWC took a different approach to freeing up bandwidth by adopting switched-digital video technology,[231] but it is now beginning to make the transition to an all-digital network to be able to deploy more advanced services. Currently, TWC's all-digital migration is complete in only about 17 percent of its footprint.[232] Even under its recently announced network investment plan, TWC expects to convert only 75 percent of its footprint to all-digital by the end of 2016 on a stand-alone basis.[233]

175. Post-transaction, Comcast will accelerate this transition to all-digital, thus freeing up more spectrum on the TWC network more quickly. Neil Smit, President and CEO of Comcast Cable, recently indicated that converting TWC's network to all-digital would be an initial focus of the post-transaction integration efforts, in order to, among other things,

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231 Channels delivered via switched digital video technology are only transmitted over the cable network on an as-needed basis, which is a more efficient use of network bandwidth than the traditional always-on delivery method (*see, e.g.*, http://support.brighthouse.com/Article/Switched-Digital-Video-SDV-7563/, *site visited* April 2, 2014.)

232 *See* Ian Olgeirson, "Charter, Time Warner Cable Lag in All-Digital Push To Convert CapEx into Capacity", SNL Kagan, January 17, 2014. ("Time Warner Cable is estimated to have made the [digital] transition in 17% of its homes passed, including markets in its New York cluster.") Delivering analog video takes up a significant portion of available cable spectrum relative to digital video. Consequently, transitioning to digital makes more 6 MHz QAM channels available for broadband.

233 TWC, "TWC Operational and Financial Plan," January 30, 2014, *available at* http://ir.timewarnercable.com/files/4Q13/TWC_Operational%20and_Financial%20Plan_vFINAL.pdf, *site visited* March 28, 2014, 11.

"free up bandwidth [,]… increase the speeds over DOCSIS 3.0, [and] rollout Wireless Gateway."[234]

176. Similarly, Comcast was one of the first cable operators to deploy DOCSIS 3.0, a standard for providing high-speed data service over a cable system. Comcast has invested more than $1 billion to migrate its network to all-digital and rollout DOCSIS 3.0 to more than 99 percent of its footprint and has deployed DOCSIS 3.0 capable modems to more than [[ ]] customers (approximately [[ ]] percent of its customer base).[235] In contrast, while TWC has also implemented DOCSIS 3.0 on more than 99 percent of its footprint, it has deployed DOCSIS 3.0-capable modems to only [[ ]] customers (approximately [[ ]] percent of its customer base).[236]

177. In conjunction with accelerating TWC's all-digital conversion, I understand that one of Comcast's initial post-transaction objectives is to increase broadband speeds by

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234 "CMCSA - Comcast Corporation at Deutsche Bank Media, Internet and Telecom Conference," Edited Transcript, March 10, 2014, *available at* http://files.shareholder.com/downloads/CMCSA/0x0x732738/b11af39e-e366-4948-9ef9-3b05a9cbde09/Comcast%20at%20Deutsche%20Bank%20Conference%20Transcript.pdf, *site visited* March 28, 2014.

235 John Schanz, Executive Vice President, National Engineering and Technical Operations, Comcast, February 28, 2014, interview.

236 Kevin Leddy, Executive Vice President, Corporate Strategy, TWC, February 28, 2014, interview.

utilizing DOCSIS 3.0 to its fullest by bonding together more QAM channels freed up by the accelerated transition to all-digital.[237]

178. Beyond DOCSIS 3.0, two new technological standards promise even faster broadband speeds and even greater benefits from the proposed transaction:

- CCAP is a technology that combines quadrature amplitude modulations (QAMs) technology (used in the distribution of digital video) with DOCSIS technology (used in the distribution of IP-based data) into a single CMTS that resides in the network infrastructure.[238] CCAP reduces the network's space and energy requirements and allows for more efficient management of digital and IP services.[239] CCAP also allows cable operators to use DOCSIS 3.0 to bond more QAM channels (up to the 32 downstream channels contemplated by DOCSIS 3.0) together to deliver faster downstream and upstream broadband speeds. Comcast expects to deploy CCAP to about **[[ ]]** percent of its footprint by year-end 2014

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237 "CMCSA - Comcast Corporation at Deutsche Bank Media, Internet and Telecom Conference," Edited Transcript, March 10, 2014, *available at* http://files.shareholder.com/downloads/CMCSA/0x0x732738/b11af39e-e366-4948-9ef9-3b05a9cbde09/Comcast%20at%20Deutsche%20Bank%20Conference%20Transcript.pdf, *site visited* March 28, 2014.

238 *See* CableLabs, "Operations Support System Interface Specification," August 8, 2013, *available at* http://www.cablelabs.com/wp-content/uploads/specdocs/CM-SP-CCAP-OSSI-I05-130808.pdf, *site visited* April 2, 2014.

239 CableLabs, Press Release, "CableLabs Intros CCAP Platform," June 14, 2011.

and to [[ ]] percent of its footprint by 2016.[240] In contrast, TWC only plans to deploy CCAP to 75 percent of its footprint over the next several years.[241]

- DOCSIS 3.1 is the successor standard to DOCSIS 3.0. By allowing for much greater spectral efficiency, it supports download speeds of up to 10 Gbps and upload speeds of up to 1 Gbps (relative to the DOCSIS 3.0 standard that supports download speeds of up to 1 Gbps and upload speeds of up to 240 Mbps).[242] Facilitated in part by its deployment of CCAP technology, Comcast expects to begin deploying DOCSIS 3.1 soon after the specifications are expected to be finalized in 2015, and it will be the first to do so among broadband providers.[243]

179. Comcast will be able to bring both of these enhancements—CCAP and DOCSIS 3.1—to TWC's network more quickly and more broadly than TWC could do alone. Among other things, these faster deployments will occur because, using its built-up experience, Comcast will be able to migrate TWC's systems to all-digital more rapidly

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240 John Schanz, Executive Vice President, National Engineering and Technical Operations, Comcast, February 28, 2014, interview.

241 TWC, "TWC Operational and Financial Plan," January 30, 2014, *available at* http://ir.timewarnercable.com/files/4Q13/TWC_Operational%20and_Financial%20Plan_vFINAL.pdf, *site visited* March 28, 2014

242 Intel, Press Release, "Intel Previews 1Gbps DOCSIS* 3.0 Gateway Capability at The Cable Show," May 21, 2012; CableLabs, Press Release, "New Generation of DOCSIS Technology," October 30, 2013, *available at* http://www.cablelabs.com/news/new-generation-of-docsis-technology/, *site visited* March 28, 2014.

243 John Schanz, Executive Vice President, National Engineering and Technical Operations, Comcast, February 28, 2014, interview.

than TWC could do on its own and will be able to accelerate the deployment of CCAP to TWC's *entire* footprint.[244]

(b) Improvements in wired network infrastructure

180. With respect to *wired networks*, customers of the combined firm will benefit from increased investment in access networks, as well as metro, regional, and national core networks. Such investments are motivated by a combination of increased opportunities to serve business accounts, cross-regional economies of scope in regional core networks, and economies of scale in investing in the national core network.

(1) Benefits to residential customers from build-out to serve more business customers

181. Recent history provides guidance on the beneficial effects of increased scale and scope: Comcast's recent expansion into the business services segment has provided benefits to all Comcast customers, including residential customers. In 2006, Comcast chose to invest in improving its regional core networks over building a parallel network to service the business segment because it decided that an integrated network would be more efficient.[245] Since 2006, Comcast has continued to make significant investments in its core networks to support business services. The benefits of these investments include

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244 John Schanz, Executive Vice President, National Engineering and Technical Operations, Comcast, February 28, 2014, interview.

245 This paragraph based on an interview with Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 26, 2014.

faster speeds and enhanced network reliability, among others. As explained in this section, all residential and business customers benefit from investment in the core networks, and this transaction will accelerate and enhance these investments.

182. The benefits to Comcast's residential customers from investments targeted toward business opportunities are heightened by the fact that many aspects of network infrastructure are common to both business and residential customers. For example, according to Comcast, approximately **[[ ]]** percent of business services revenue is derived from the Hybrid Fiber/Coax ("HFC") network, which is shared with residential customers.[246] Similarly, approximately **[[ ]]** percent of TWC's business services networks revenue is derived from services delivered over the HFC plant (which is shared with residential customers).[247] Furthermore, much of Comcast's network architecture is shared between business and residential customers. Common core architecture includes routers at the metro, regional, and national level, as well as the CMTS, and all the fiber links in between.[248]

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246 Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, March 26, 2014, interview.

247 Greg King, Senior Vice President, TWC Commercial Services, March 7, 2014, interview.

248 I understand that the only elements of the network architecture that are dedicated exclusively to businesses are those elements beyond the local routers associated with providing cell towers backhaul and Metro Ethernet (Metro Ethernet is a service designed to provide high-bandwidth connectivity to a business customer). **[[ ]]**

183. Because of the common business and residential infrastructure, the new build-outs required to serve the incremental business traffic generated by the transaction, described in Section IV.A above, will also benefit residential customers. In particular, I understand that build-outs generally take into account future requirements.[249] The cost of adding incremental fiber capacity as part of a build-out is relatively low compared to other build-out costs, including the labor and equipment required to do the "digging" at the heart of the build-out. For example, the Commission recently estimated that the cost of deploying one mile of fiber can easily exceed $100,000, but noted that "[t]he largest element of deployment costs is not the fiber itself, but the placement costs associated with burying the fiber in the ground. . . . These placement costs can, in certain cases, account for almost three-quarters of the total cost of fiber deployment."[250]

184. Hence, through a forward-looking lens, every build-out Comcast does for a business customer in the future lays down more network infrastructure to serve more businesses and residential customers. Building out the network infrastructure in a way that creates excess capacity effectively reduces the marginal costs of connecting more business and residential customers near the build-out. All expansions of cable plant and investments in core network to serve newly profitable business customer opportunities

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249 Phil Meeks, Executive Vice President and Chief Operating Officer, Business Services, TWC, March 7, 2014, interview.

250 *National Broadband Plan*, 114.

directly benefit residential customers as well (through a faster core network and more homes passed). In a similar vein, the expansion of broadband to certain businesses within a footprint increases the likelihood of providing access to other business and residential customers in the future.

185. The complementary nature of usage patterns—business use generally occurs during the day, and the heaviest residential use occurs in the evening (and early morning and over the weekend)—heightens the benefits of such capacity investments. In particular, more business customer traffic generally does not raise a network congestion concern for residential customers since networks are designed to meet peak usage loads and business/residential peak usage times do not overlap.[251]

186. The provisioning of broadband services to business customers also increases the reliability of the network for residential customers.[252] As Comcast has retooled its network to cater to business customers (such as providing Metro Ethernet and cell tower backhaul services), it has built redundancy in its network infrastructure not only to deliver the increased capacity, but also to make the network more resilient to problematic events. Since residential customers largely share the same infrastructure, they benefit from the increased reliability that has come about as a result of serving business customers. For

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

[252] This paragraph relies on interviews with Kevin O'Toole, Senior Vice President, Product Development, Business Services, Comcast Corporation, February 20, 27, and 28, 2014.

example, I understand that as a quality-assurance service provided to business customers, Comcast actively monitors network nodes that are connected to these customers to ensure that outages and other performance degradations are promptly noted and addressed. Since in many instances the same nodes also serve residential customers, those customers benefit from the enhanced quality of service generally only accorded to business customers.

(2) Scale-based benefits to national core network

187. Economies of scale can also be expected to lead to improvements in the core network infrastructure. As discussed in Section II.A.3(c), both Comcast and TWC have independently developed their own national core backbone infrastructure. I understand that combining the scale of the two core networks will generate additional innovations in capacity and architecture that will allow Comcast to reach more commercial customers on a single network with potentially better latency that large-scale enterprises demand.[253] I also understand that, although Comcast is contemplating upgrading its backbone infrastructure sometime in the future, the additional scale facilitated by the merger will accelerate that process. In particular, I understand that as the volume of data transmission increases, Comcast will begin to approach physical limitations that will require it to make

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253 This paragraph and the following paragraph are based on an interview with Kevin McElearney, Senior Vice President, Network Engineering, Comcast Corporation, April 2, 2014.

fixed cost investments to overcome (*e.g.*, investing in new router technology or additional fiber). By combining Comcast and TWC traffic in a single network, the combined firm will reach those thresholds sooner and therefore Comcast expects to accelerate its investment in backbone infrastructure.

188. Comcast also expects that the transaction will lead to faster development of the next generation Layer 2 (optronics) and Layer 3 (electronic) infrastructure for backbone. In particular, I understand that Comcast regularly makes decisions about whether to buy network equipment from third-party vendors or to develop it internally. Developing such technologies internally involves fixed cost investments, so this option becomes more attractive as a result of the scale enabled by the transaction. Thus, the transaction will give Comcast an improved option to bring infrastructure development in-house when doing so is most profitable and, by making this option more credible, will also create a competitive incentive for suppliers to bring products to the market more quickly (and on better terms) than they would otherwise have an incentive to do.

(3) Scope-based benefits to regional core networks

189. The transaction will also create benefits in areas where Comcast's and TWC's footprints are currently near one another, and thus where the transaction effectively

creates more complete network coverage for the combined firm in a given region.[254] The benefits from such "regional densification" follow from the design of Comcast's network. In particular, Comcast typically builds Converged Regional Area Networks ("CRANs") to serve geographically proximate markets.[255] I understand that building out more CRANs helps the network to be more resilient (meaning to maintain more consistent quality even as conditions or demands on the network change); provides additional capacity to support growth in demands on the network from a range of services including broadband Internet, IP cable services, and business services like Metro Ethernet and cell tower backhaul; improves network performance (*e.g.*, reduces "latency"); and can provide additional connectivity to third-party regional data centers, offering increased points of interconnection. Comcast also supports CRANs with regional data centers that enable Comcast to offer new IP cable services, better support the X1 platform, and potentially offer an additional regional option for interconnection with Comcast's network.

190. Although I understand that Comcast does not currently know the full details of TWC's network architecture, the increased regional density in certain areas associated with the transaction mean that the combined firm may be able to increase the number of

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254 This paragraph and the following based on an interview with Barry Tishgart, Vice President, Product Management & Wholesale Services, Comcast Corporation, February 20, 2014.

255 CRANs allow voice, video, and data traffic to flow over a single network and enable very fast networks.

CRANs and regional data centers, providing better service to customers in particular areas. In particular, where Comcast has systems in geographic proximity to those of TWC systems, it may be profitable for Comcast to invest in a new CRAN supported by a new regional data center. Such an investment would improve the quality of the network to the benefit of residential and business customers, as well as edge providers.

(c) Improvements in wireless access networks

191. With respect to *wireless access networks*, customers of the combined firm will benefit from a unified Wi-Fi strategy yielding expanded and improved Wi-Fi offerings, including expanded and accelerated rollout of new generations of Wi-Fi gateways and a denser grid of Wi-Fi hotspots. These expanded Wi-Fi offerings may potentially, over the longer term, be part of a strategy to use the combined firm's grid of Wi-Fi hotspots as a launching point for a national "Wi-Fi first" mobile wireless service.

192. As part of its overall consumer offering, Comcast has deployed a network of Wi-Fi hotspots. Comcast's Wi-Fi network consists of public Wi-Fi in residential areas ("home hotspots" or alternatively, "Neighborhood hotspots"), outdoor hotspots, typically in heavily trafficked areas, and hotspots in small and medium-sized businesses.[256] Table 4

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[256] In 2013, Comcast introduced advanced multi-signal wireless gateways to customers. These wireless gateways broadcast two separate signals, one to create a private and secure signal for in-home use and a second for public use. Therefore, in addition to offering an advanced in-home wireless experience, the neighborhood hotspots also create a supplemental public pathway for other Comcast customers to access the Internet, without requiring the host customer's Wi-Fi password or affecting the host's service. (*See*

indicates the number of each type of Wi-Fi location that Comcast offers today and plans to offer in 2017.[257] The total number of Wi-Fi hotspots will increase from 725,000 in 2013 to [[ ]] million in 2017, with the most prominent increase projected for neighborhood hotspots that will grow from [[ ]] in 2013 to [[ ]] million in 2017. Moreover, Wi-Fi hotspot usage has been expanding, indicating that customers value access to a large Wi-Fi network. For example, the average Comcast broadband user (excluding home subscribers in their own home) consumes approximately [[ ]] gigabytes of data per month via Wi-Fi, a figure that has increased by [[ ]] percent over the past year.[258]

Comcast, Press Release "Comcast Today Announced Plans to Create Millions of Wifi Access Points for its Customers through a Neighborhood Hotspot Initiative," June 10, 2013, *available at* http://corporate.comcast.com/news-information/news-feed/comcast-unveils-plans-for-millions-of-xfinity-wifi-hotspots-through-its-home-based-neighborhood-hotspot-initiative-2, *site visited* March 28, 2014.)

257 Tom Nagel, Senior Vice President & General Manger, Wireless Services, Comcast Corporation, March 18, 2014, interview.

258 [[ ]].

Table 4: Number of Xfinity Wi-Fi Hotspots

Number of Wi-Fi Hotspots (000s)	2013	2017
Outdoor	[[	]]
Small and Medium Businesses (SMB)		
Home		]]
Total	*725*	

193. By comparison, TWC's Wi-Fi network has only 30,000 hotspots located in Los Angeles, New York City, Austin, Charlotte, Myrtle Beach, Kansas City, and Hawaii.[259]

194. In an attempt to address the lack of Wi-Fi coverage outside of their own footprints, both Comcast and TWC are members of Cable WiFi, a collaboration between Bright House Networks, Cox Communications, Optimum, TWC, and Comcast that offers customers access to each other's Wi-Fi networks.[260] For example, Comcast customers have access to approximately 145,000 Wi-Fi hotspots outside the Comcast footprint via the Cable WiFi partnership.[261]

195. While the Cable WiFi partnership has successfully provided customers with access to Wi-Fi access points outside of the footprint of their cable provider, the

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259 TWC is considering adding another [[ ]] hotspots in 2014 in outdoor public locations and in small and medium-sized businesses. (Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, February 28, 2014, interview.)

260 *See* http://www.cablewifi.com/, *site visited* March 31, 2014.

261 [[ ]].

collaboration suffers from two shortcomings relative to an integrated network operated by a single entity. First, the partnership does not require any particular level of investment in Wi-Fi from its members. For example, as noted above, TWC has deployed many fewer Wi-Fi access points than has Comcast. Following the transaction, Comcast will internalize the benefits of a greater number of Wi-Fi access points to legacy Comcast customers who travel in the TWC footprint, and vice versa, because offering a broader Wi-Fi footprint makes Comcast and TWC more attractive to consumers. Hence, subscribers of the combined firm—particularly those in the TWC footprint—will likely benefit from a more aggressive strategy toward Wi-Fi deployment.

196. Second, an integrated entity will be able more efficiently to operate a Wi-Fi network. As one measure of the greater efficiency from operating an integrated Wi-Fi network, including the possible elimination of double marginalization, Comcast estimates that the cost of data usage on its own Wi-Fi access points is **[[ ]]** per gigabyte, while the cost of data usage -other Wi-Fi networks can range from **[[ ]]** per gigabyte up to **[[ ]]** per gigabyte.[262] Operating the Wi-Fi network at a lower marginal cost post-transaction will create an incentive for the combined firm to expand its network further.

197. In addition to directly benefiting existing customers, to the extent that the transaction enables the combined firm to achieve a high-quality, broad-based, tightly

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[262] Tom Nagel, Senior Vice President & General Manger, Wireless Services, Comcast Corporation, March 18, 2014, interview.

integrated Wi-Fi network, it may facilitate entry into the mobile wireless industry at some point in the future, thus increasing competition in that industry. I understand that such entry likely would be based on a network that combines Wi-Fi infrastructure with a Mobile Virtual Network Operator (MVNO) option.[263] Notably, such a strategy would further incentivize the combined firm to expand its base of Wi-Fi hotspots (both to increase the quality of the offering and because, as explained above, traffic carried on the Wi-Fi network is substantially less expensive than traffic carried on the MVNO network), thus benefiting customers of the combined firm whether or not they use the mobile wireless offering and whether or not that effort ultimately succeeds.

198. The transaction increases the profitability of a Wi-Fi-plus-MVNO product—and thus the possibility that it will be introduced. The transaction will expand the combined firm's Wi-Fi base, reducing dependence on the more expensive MVNO option.[264] In addition, because the combined firm will be able to deliver a greater potential base of sales to device manufacturers, the transaction will put the combined firm in a better position to negotiate with device manufacturers to work on the technology needed to

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263 MVNOs purchase wireless network services on a wholesale basis from mobile network operators and then resell those services under their own brand. Comcast currently has MVNO agreements {{ }} and Verizon. (Tom Nagel, Senior Vice President & General Manger, Wireless Services, Comcast Corporation, March 18, 2014, interview.)

264 Tom Nagel, Senior Vice President & General Manger, Wireless Services, Comcast Corporation, March 18, 2014, interview.

improve the Wi-Fi/CMRS handoff technology to the point where it provides a superior experience.[265]

(d) Improvements in home networks

199. With respect to *home networks*, customers of the combined network will likely benefit from increased investments in home network technologies made profitable by the combined firm's increased scale, including tools to enable consumers to better manage all devices on the household's broadband network.

200. The combined entity's greater scale will encourage more rapid and deeper innovation, both in terms of developing better tools for customers (*e.g.*, online self-help, installation, parental controls, and antivirus software) and housing such services "in the cloud" so that they can help people manage these tools for the whole household.[266] On the video side, Comcast already tested a cloud-based DVR service in 2013 in a trial market area and is in the process of launching its service across the entire footprint starting in 2014.[267] I understand that Comcast has also developed prototype business

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265 Tom Nagel, Senior Vice President & General Manger, Wireless Services, Comcast Corporation, March 18, 2014, interview.

266 Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, February 28, 2014, interview.

267 Tony Werner, Executive Vice President, Chief Technology Officer, Comcast Corporation, February 20, 2014, interview.

cases for technologies including the ability to track usage, establish priorities, block unwanted Internet sites, and store data in the cloud.

201. IT services such as those described above require large fixed cost investments to develop and support the required software.[268] As explained above, such high fixed-cost investments are more likely to be profitable when scaled over a larger base of customers because the larger base of customers increases the revenue opportunity without increasing the fixed costs.[269] For example, TWC is eager to develop network-based, rather than device-specific, parental controls but recognizes that a large upfront investment is required to deploy this technology and hence that this initiative may need to be limited in scope given TWC's current scale limitations.[270] With the proposed transaction, the combined firm could not only develop and deploy such technology, but it could also devote substantial resources for marketing and educating customers about it.[271]

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268 Marcien Jenckes, Executive Vice President, Consumer Services Group, Comcast Corporation, February 27 and 28, 2014, interviews.

269 Marcien Jenckes, Executive Vice President, Consumer Services Group, Comcast Corporation, February 27 and 28, 2014, interview.

270 Peter Stern, Executive Vice President & Chief Strategy Officer, TWC, February 28, 2014, interview.

271 Marcien Jenckes, Executive Vice President, Consumer Services Group, Comcast Corporation, February 27 and 28, 2014, interview.

V. CONCLUSION

202. Based on my analysis of the transaction, presented throughout this Declaration, I reach the following primary conclusion: *Given (i) the lack of any valid competitive concerns and (ii) the substantial consumer benefits, the proposed transaction—as it relates to the provision of broadband services in particular—is pro-consumer, pro-competitive, and in the public interest.*

I, Mark A. Israel, declare under penalty of perjury that the foregoing declaration is true and correct to the best of my knowledge, information, and belief.

Executed on April 7, 2014.

Mark A. Israel

Mark A. Israel **March 2014**
Executive Vice President and Managing Director

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SUMMARY OF EXPERIENCE

Mark Israel has substantial experience applying economic analysis and econometric tools to antitrust cases, including mergers, regulatory proceedings, and litigation matters. He has served as an expert for both the government and private parties in cases in industries including telecommunications, cable television, broadband internet service, other high technology industries, airlines, railroads, shipping, financial markets, credit cards, consumer retail, and many others. Israel has written numerous academic articles on topics ranging from competition economics, merger policy, telecommunications, airlines, insurance markets, and applied econometrics. His research has been published in leading scholarly and applied journals including The American Economic Review, The Rand Journal of Economics, The Review of Industrial Organization, Antitrust Source, and the Global Competition Review, and has been presented to business, government, and academic audiences around the world. Prior to joining Compass Lexecon, Israel was an Associate Professor at Northwestern University's Kellogg School of Management. He received his Ph.D. in Economics from Stanford University in 2001.

AREAS OF EXPERTISE

- Antitrust and competition economics
- Industrial organization economics
- Applied econometrics
- Economic and econometric analysis of horizontal and vertical mergers
- Economic and econometric analysis of antitrust litigation topics, including: Class certification, damages, and liability issues in cases involving price fixing, exclusive dealing, monopolization, bundling, price discrimination, and exclusionary practices.

EDUCATION

Ph.D., in Economics, STANFORD UNIVERSITY, June 2001.

M.A., in Economics, UNIVERSITY OF WISCONSIN-MADISON, August 1992.

B.A., in Economics, ILLINOIS WESLEYAN UNIVERSITY, Summa Cum Laude, May 1991.

EMPLOYMENT HISTORY

Compass Lexecon, Washington, DC: Executive Vice President and Managing Director, Washington, DC Office, April 2013 – Present.

(Previously: Senior Vice President and Managing Director, Washington, DC Office, November 2010 – March 2013; Senior Vice President, January 2009 – November 2010; Vice President, January 2008 – December 2008; Economist, January 2006 – December 2007.)

Kellogg School of Management, Northwestern University, Evanston, Illinois: Assistant Professor of Management and Strategy, September 2000 – June 2007; Visiting Associate Professor of Management and Strategy, September 2007 – August 2008.

State Farm Insurance, Bloomington, Illinois: Research Administrator, August 1992 – August 1995.

Illinois Wesleyan University, Bloomington, Illinois: Visiting Assistant Professor of Economics, January 1993 – June 1993.

EXPERT REPORTS, AFFIDAVITS, AND DECLARATIONS

Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Sprint's Proposed Weighted Spectrum Screen Defies Economic Logic and Is Inconsistent with Established Facts," Federal Communications Commission, WT Docket 12-269, March 14, 2014.

Reply Declaration of Mark A, Israel, "Competitive Effects and Consumer Benefits from the Proposed Acquisition of Leap Wireless by AT&T: A Reply Declaration," Federal Communications Commission, WT Docket 13-193, October 23, 2013.

Declaration of Mark A. Israel, "An Economic Analysis of Competitive Effects and Consumer Benefits from the Proposed Acquisition of Leap Wireless by AT&T," Federal Communications Commission, WT Docket 13-193, August 1, 2013.

Supplemental Reply Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Comments on Appropriate Spectrum Aggregation Policy with Application to the Upcoming 600 MHz Auction," Federal Communications Commission, WT Docket 12-269, June 13, 2013.

Reply Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Comment on the Submission of the U.S. Department of Justice Regarding Auction Participation Restrictions," Federal Communications Commission, WT Docket 12-269, June 13, 2013.

Reply Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Spectrum Aggregation Policy, Spectrum-Holdings-Based Bidding Credits, and Unlicensed Spectrum," Federal Communications Commission, GN Docket 12-268, March 12, 2013.

Declaration of Igal Hendel and Mark A. Israel, "Econometric Principles That Should Guide the Commission's Analysis of Competition for Special Access Service," Federal Communications Commission, WC Docket 05-25, February 11, 2013.

Reply Declaration of Mark A. Israel and Michael L. Katz, "Economic Analysis of Public Policy Regarding Mobile Spectrum Holdings," Federal Communications Commission, WT Docket 12-269, January 7, 2013.

Declaration of Mark A. Israel and Michael L. Katz, "Economic Analysis of Public Policy Regarding Mobile Spectrum Holdings," Federal Communications Commission, WT Docket 12-269, November 28, 2012.

Declaration of Mark Israel, "An Economic Assessment of the Prohibition on Exclusive Contracts for Satellite-Delivered, Cable-Affiliated Networks," Federal Communications Commission, MB Docket Nos. 12-68, 07-18, & 05-192, September 6, 2012.

Expert Report of Mark Israel, "Implications of the Verizon Wireless & SpectrumCo/Cox Commercial Agreements for Backhaul and Wi-Fi Services Competition," Federal Communications Commission, WT Docket 12-4, August 1, 2012.

Expert Report of Mark A. Israel, Michael L. Katz, and Allan L. Shampine, "Promoting Interoperability in the 700 MHz Commercial Spectrum," Federal Communications Commission, WT Docket 12-69, July 16, 2012.

Affidavits of Dr. Mark A. Israel in Re: Bloomberg L.P. V. Comcast Cable Communications, LLC, Federal Communications Commission, MB Docket 11-104, June 21, 2012 (Declaration), June 8, 2012 (Declaration), September 27, 2011 (Supplemental Declaration), July 27, 2011 (Declaration).

Expert Report of Robert Willig, Mark Israel, Bryan Keating, and Jonathan Orszag, "Response to Supplementary Comments of Hubert Horan," Docket DOT-OST-2009-1055, October 22, 2010.

Expert Report of Robert Willig, Mark Israel, Bryan Keating, and Jonathan Orszag, "Measuring Consumer Benefits from Antitrust Immunity for Delta Air Lines and Virgin Blue Carriers," Docket DOT-OST-2009-1055, October 13, 2010.

Expert Report of Mark Israel and Michael L. Katz, "Economic Analysis of the Proposed Comcast-NBCU-GE Transaction," Federal Communications Commission, MB Docket 10-56, July 20, 2010.

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Expert Report of Mark Israel and Michael L. Katz, "Application of the Commission Staff Model of Vertical Foreclosure to the Proposed Comcast-NBCU Transaction," Federal Communications Commission, MB Docket 10-56, February 26, 2010.

Expert Report of Robert Willig, Mark Israel, and Bryan Keating, "Competitive Effects of Airline Antitrust Immunity: Response of Robert Willig, Mark Israel, and Bryan Keating" in Docket DOT-OST-2008-0252, January 11, 2010.

Affidavit of Dr. Mark A. Israel on Class Certification in Re: Puerto Rican Cabotage Antitrust Litigation, in the United States District Court for the District of Puerto Rico, MDL Docket No. 3:08-md-1960 (DRD), December 10, 2009.

Expert Report of Robert Willig, Mark Israel, and Bryan Keating, "Competitive Effects of Airline Antitrust Immunity" in Docket DOT-OST-2008-0252, September 8, 2009.

Expert Report and Supplemental Expert Report of Dennis W. Carlton and Mark Israel in Re: Toys "R" Us-Delaware, Inc., and Goeffrey Inc. v. Chase Bank USA N.A. in American Arbitration Association New York, New York, Commercial Arbitrations No. 13-148-02432-08, February 27, 2009 (Expert Report), March 20, 2009 (Supplemental Expert Report).

Expert Reports of James Levinsohn and Mark Israel in Re: 2006 NPM Adjustment Proceeding pursuant to Master Settlement Agreement, October 6, 2008 (Expert Report), January 16, 2009 (Expert Report), March 10, 2009 (Expert Report).

INVOLVEMENT IN REGULATORY REVIEW OF MERGERS/TRANSACTIONS

Successful acquisition of Leap Wireless by AT&T. 2014. Lead economic expert for AT&T. Submitted multiple Declarations to FCC and made presentation to DOJ, demonstrating the transaction would generate substantial consumer benefits, while generating at most minimal upward pricing pressure in a properly defined mobile wireless services market and no issues related to spectrum concentration or other competitive concerns.

Successful merger of American Airline and US Airways. 2013. Lead consulting expert, managing Compass Lexecon team of over 25 economists supporting multiple experts. Made multiple presentations to DOJ, worked on expert reports in litigation, and assisted counsel with the analysis leading to settlement of litigation, permitting transaction to close.

Successful merger of T-Mobile USA and MetroPCS. 2013. Lead economic expert for T-Mobile USA. Conducted economic analyses of competitive effects of the transaction, as well as consumer benefits from reduced costs and increased network quality. Presented analyses to both DOJ and FCC.

Decision by Federal Communications Commission not to extend the ban on exclusive contracts for satellite-delivered, cable-affiliated networks. 2012. Lead economic expert for National Cable and Telecommunications Association. Submitted economic analysis demonstrating that the ban on exclusive distribution of satellite-delivered, cable affiliated networks is no longer warranted given increased marketplace competition. FCC made decision to allow the ban to sunset.

Successful sale of wireless spectrum by SpectrumCo and Cox ("Cable Companies") to Verizon Wireless and successful completion of related commercial agreements. 2012. On behalf of the Cable Companies, performed economic analyses demonstrating lack of

competitive harm from the transaction on markets for backhaul and Wi-Fi services. Presented analyses to FCC.

Successful acquisition by LIN Media of broadcast television stations from NVTV. 2012. Lead economic expert for LIN Media. Prepared economic analysis demonstrating lack of competitive concern over potential issues related to Shared Service and Joint Sale Arrangements.

Proposed acquisition of T-Mobile USA by AT&T. 2011. Served as one of the lead economists, initially for T-Mobile (along with Michael Katz) and ultimately for both parties (along with Michael Katz and Dennis Carlton). Made multiple presentations to DOJ and FCC. Appeared in FCC Workshop, ex parte meeting.

S*uccessful application for antitrust immunity by Delta and Virgin Blue*. 2010. Together with Robert Willig, Bryan Keating, and Jon Orszag, prepared economic analyses demonstrating substantial net consumer benefits from antitrust immunity. Submitted results in expert reports to Department of Transportation.

Successful joint venture between Comcast and NBC Universal (and ultimate full acquisition of NBC Universal by Comcast). 2010. Served as one of the lead economists (along with Michael Katz) on behalf of the merging parties. Wrote multiple reports submitted to FCC (with Michael Katz) demonstrating lack of significant competitive concerns from the transaction. Made multiple presentations to DOJ and FCC. Appeared in FCC Workshop of economists, ex parte meeting.

Successful application for antitrust immunity for oneworld alliance and associated joint venture of American Airlines, British Airways, and Iberia Airlines. 2009-2010. Together with Robert Willig and Bryan Keating, prepared economic analyses demonstrating substantial net consumer benefits associated with antitrust immunity for the joint venture. Submitted results in expert reports to Department of Transportation.

Successful acquisition by PepsiCo of bottlers, PBG and PAS. 2009. Performed econometric and simulation analyses demonstrating pro-competitive effect of merger on PepsiCo's own brands, other brands distributed by PBG and PAS, and overall marketplace. Presented results to FTC (together with Dennis Carlton).

Successful merger of Delta Airlines and Northwest Airlines. 2008. In support of Dennis Carlton, developed empirical and theoretical analyses to demonstrate merger's pro-competitive nature. Work focused on (ultimately settled) private litigation opposing the merger.

Successful acquisition of Harcourt Education by Houghton Mifflin. 2007. Along with Daniel Rubinfeld and Frederick Flyer, developed econometric analyses demonstrating lack of competitive harm from proposed merger. Presented results to DOJ.

Successful acquisition of Chicago Board of Trade by Chicago Mercantile Exchange. 2007. Along with Robert Willig and Hal Sider, developed and presented multiple empirical analyses demonstrating lack of competitive harm from merger. Submitted multiple white papers and made multiple presentations to DOJ.

SELECTED OTHER EXPERT/CONSULTING WORK

Led team supporting Dennis Carlton's testimony in Toshiba/Hannstar TFT-LCD Antitrust litigation vs. Plaintiff Best Buy, 2013.

Led team supporting Dennis Carlton's testimony in Toshiba's TFT-LCD Class Action Antitrust litigation Named Litigation Matter of the Year for 2012 by *Global Competition Review*, 2012.

As economic expert for US Airways, developed econometric analysis of air traffic at major US airports, presented to Philadelphia Airport management team, 2011.

Prepared analysis of the competitive impact of low-cost-carrier competition in Washington, DC and New York airports. Filed with DOT, 2011.

On behalf of major pharmaceutical firm, developed econometric model to forecast pharmaceutical expenditures, 2009.

On behalf of large not-for-profit foundation, developed and implemented a Monte Carlo simulation model to assess risk and return on investments, 2008.

In support of Robert Willig, developed econometric model to measure of the importance of network effects in credit cards in the context of measuring damages incurred by a major credit card issuer, 2007-2008.

PUBLICATIONS

"The Evolution of Internet Interconnection from Hierarchy to 'Mesh': Implications for Government Regulation," (with Stanley M. Besen), *Information Economics and Policy*, December 2013.

"Airline Network Effects and Consumer Welfare," (with Bryan Keating, Dan Rubinfeld, and Robert Willig), *Review of Network Economics*, published online November 2013.

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"Proper Treatment of Buyer Power in Merger Review," (with Dennis W. Carlton), *Review of Industrial Organization*, July 2011.

"Response to Gopal Das Varma's Market Definition, Upward Pricing Pressure, and the Role of the Courts: A Response to Carlton and Israel," (with Dennis W. Carlton), *The Antitrust Source*, December 2010.

"Will the New Guidelines Clarify or Obscure Antitrust Policy?" (with Dennis W. Carlton), *The Antitrust Source,* October 2010.

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"The Empirical Effects of Collegiate Athletics: An Update Based on 2004-2007 Data," (with Jonathan Orszag), Paper commissioned by National Collegiate Athletic Association, available *at* http://www.epi.soe.vt.edu/perspectives/policy_news/pdf/NCAASpending.pdf, February 2009.

"Services as Experience Goods: An Empirical Examination of Consumer Learning in Automobile Insurance," *The American Economic Review*, December 2005.

"Tenure Dependence in Consumer-Firm Relationships: An Empirical Analysis of Consumer Departures from Automobile Insurance Firms," *The Rand Journal of Economics*, Spring 2005.

"The Impact of Youth Characteristics and Experiences on Transitions Out of Poverty," (with Michael Seeborg), *The Journal of Socio-Economics*, 1998.

"Racial Differences in Adult Labor Force Transition Trends," (with Michael Seeborg), *The Journal of Economics*, 1994.

FORTHCOMING AND UNDER-REVIEW PUBLICATIONS

"Buyer Power in Merger Review," (with Dennis W. Carlton and Mary Coleman), forthcoming in *Oxford Handbook of International Antitrust Economics*, November 2013.

"The Economics of Cartel Cases and Use of Experts," (with Gustavo Bamberger and Dennis W. Carlton), forthcoming in *Manual on Cartel Enforcement,* April 2013.

SELECTED RECENT PRESENTATIONS

The IATA Legal Symposium 2014, Aviation Law: Upfront and Center, "Merger Analysis – A sudden shift in approach by DOJ in the American Airlines and US Airways merger," Panelist, February 2014.

Georgetown Law 7th Annual Global Antitrust Enforcement Symposium, "Merger Enforcement and Policy," Panelist, September 2013.

American Bar Association Section of Antitrust Law, "Airline Mergers: First Class Results or Middle-Seat Misery?" Panelist, May 2013.

American Bar Association Section of Antitrust Law, "Go Low or Go Home! Monopsony a Problem?" Panelist, March 2012.

Federal Communications Bar Association Transactional Committee CLE Seminar, "The FCC's Approach to Analyzing Vertical Mergers," Panelist, October 2011.

The Technology Policy Institute Aspen Forum, "Watching the Future: The Economic Implications of Online Video," Panelist, August 2011.

American Bar Association Forum on Air & Space Law, 2011 Update Conference, "Antitrust Issues: What's on the Horizon for the Industry," Panelist, February 2011.

American Bar Association Section of Antitrust Law, "Antitrust in the Airline Industry," Panelist, September 2010.

GRANTS AND HONORS

Searle Fund for Policy Research Grant, 2004-2006, for "An Empirical Examination of Asymmetric Information in Insurance Markets."

Kellogg School of Management Chairs' Core Course Teaching Award, 2003 & 2005.

Bradley Dissertation Fellowship, Stanford University, 1999-2000.

Stanford University, Outstanding Second Year Paper Prize, 1997.

SELECTED ACADEMIC SEMINARS

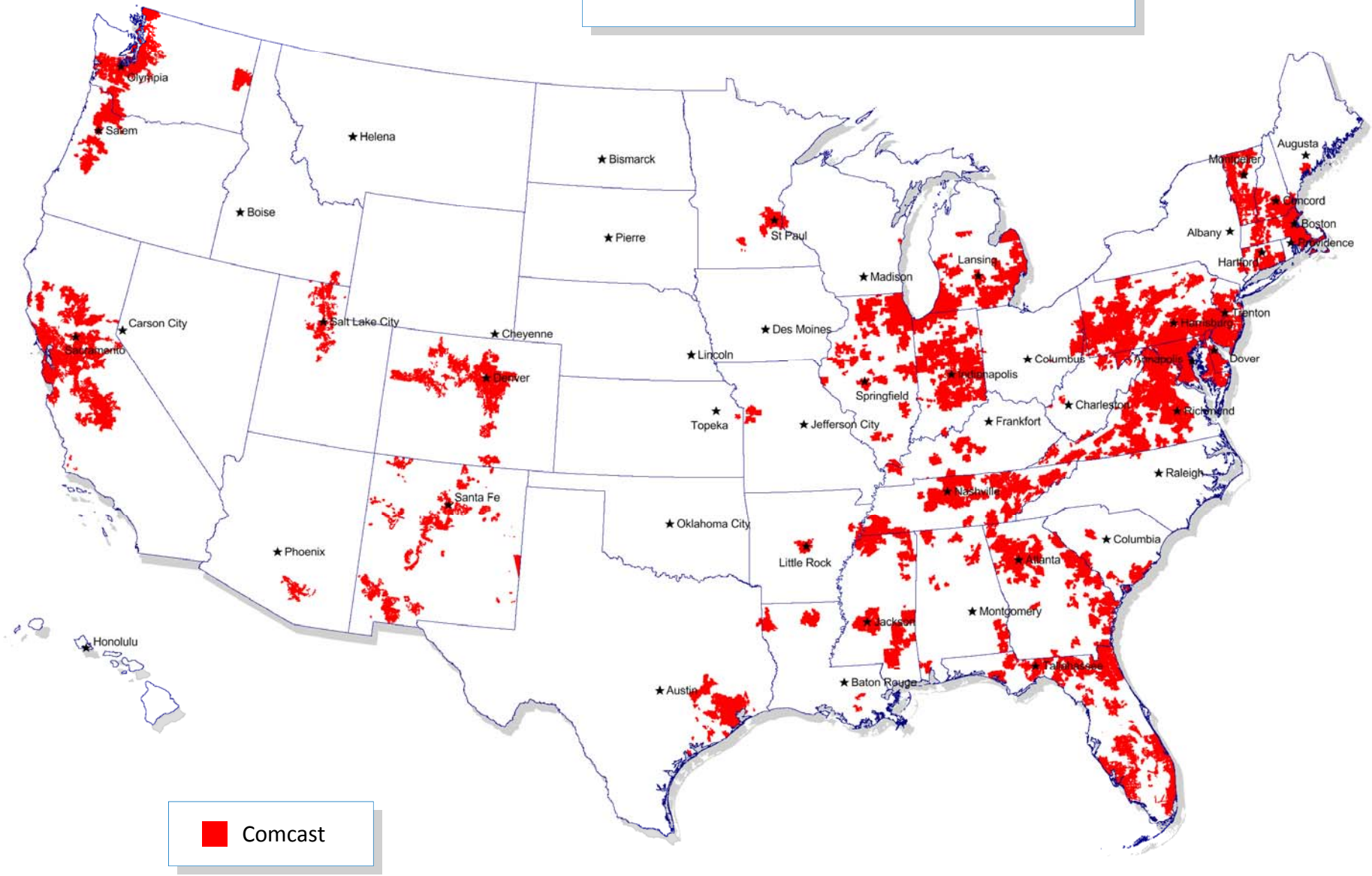
Yale University
University of Arizona
Washington University, St. Louis
University of Pennsylvania
University of Toronto
UCLA
University of Wisconsin-Madison
Massachusetts Institute of Technology
Harvard University
University of Chicago
Columbia University
University of Texas
Carnegie Mellon University
University of California, Irvine
University of California, San Diego

REFEREE FOR ACADEMIC JOURNALS

American Economic Review
The Journal of Industrial Economics
The Rand Journal of Economics
Journal of the European Economic Association
The Review of Economic Studies
The Review of Economics and Statistics
Journal of Risk and Insurance

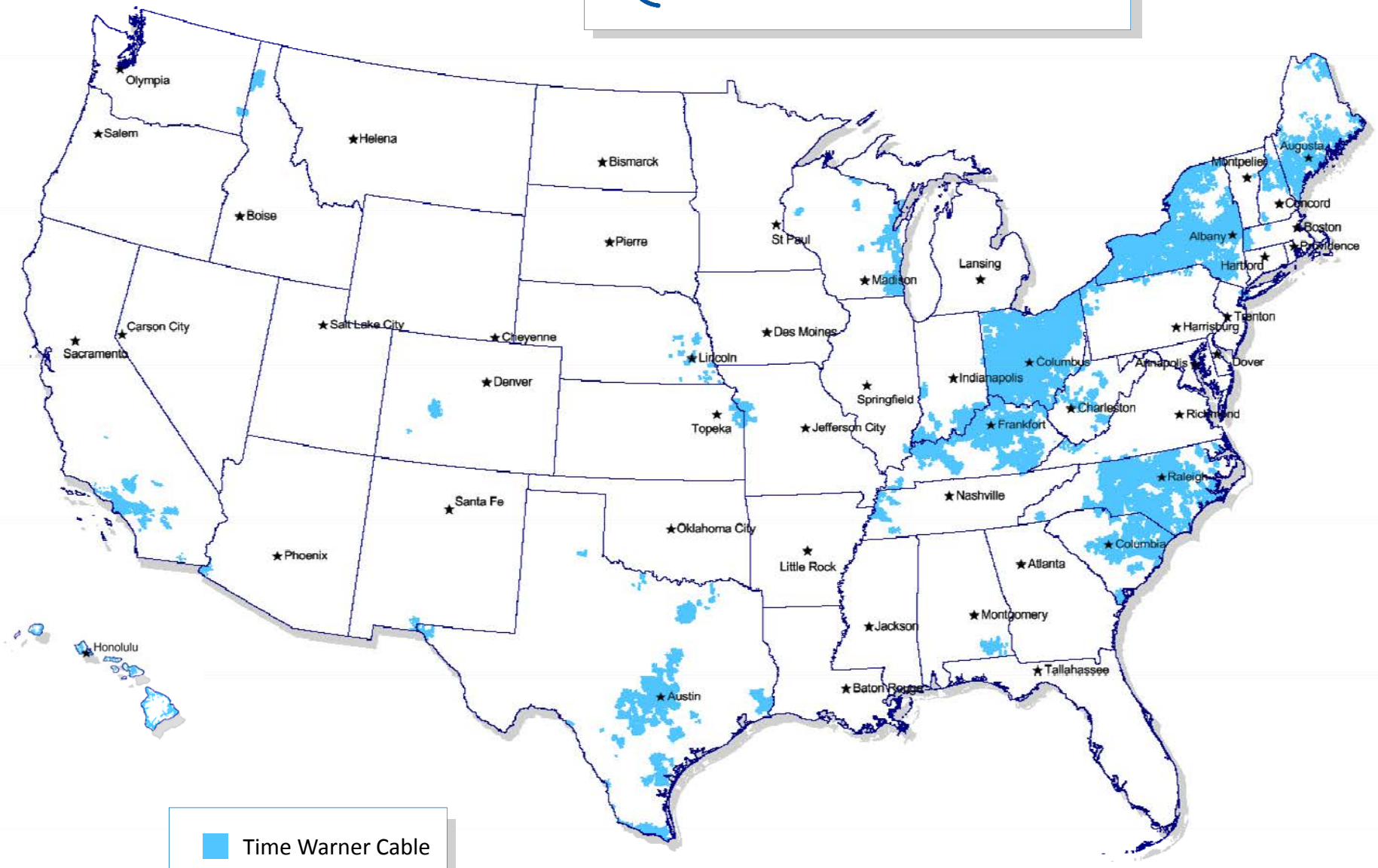
EXHIBIT 7

COMCAST Current Service Areas



Cable & Telecom Boundaries Provided by GeoResults®

Current Service Areas



Cable & Telecom Boundaries Provided by GeoResults

EXHIBIT 8

Programming Interests Held by Time Warner Cable Inc. or Affiliated Companies

(some offered in both SD and HD versions; some also offered via Local On Demand)

Attributable Interests in National Programming Services

iN Demand
MLB Network

Wholly Owned Regional and Local Channels (by state or region)

A. Regional Sports Networks (Carrying Professional Sports)

California/Nevada

Time Warner Cable Channel 858 (Spanish language)
Time Warner Cable Deportes (Spanish language)
Time Warner Cable SportsNet

Texas

Canal de Tejas (North – Dallas, Waco, El Paso; South – Austin, San Antonio, Corpus, RGV, Laredo) (Spanish language)

B. Other Regional Sports Networks (With No Professional Sports)

Hawaii

OC 12

Kansas/Missouri

Time Warner Cable SportsChannel (KC)[1]

Nebraska

Time Warner Cable SportsChannel (Nebraska)

New York

Time Warner Cable SportsChannel (Albany)
Time Warner Cable SportsChannel (Buffalo)
Time Warner Cable SportsChannel (Rochester)
Time Warner Cable SportsChannel (Syracuse)[2]

Ohio

Time Warner Cable SportsChannel (Cincinnati/Dayton)
Time Warner Cable SportsChannel (Cleveland/Akron)
Time Warner Cable SportsChannel (Columbus/Toledo)

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[1] Customers also receive Time Warner Cable SportsChannel 2 (KC), which carries overflow programming from Time Warner Cable SportsChannel (KC).

[2] Customers also receive Time Warner Cable SportsChannel 2 (Syracuse), which carries overflow programming from Time Warner Cable SportsChannel (Syracuse).

Texas

Time Warner Cable SportsChannel (North – Dallas, El Paso; South – Austin, San Antonio, Corpus, RGV)

Wisconsin

Time Warner Cable SportsChannel (Milwaukee, Green Bay)

C. Local News, Lifestyle, and Sports Channels

California

Desert Cities TV (Desert Cities)
Time Warner Cable News (Palmdale)
Time Warner Cable SoCal 101

Hawaii

K-Life (pay on demand)
NGN (pay on demand)
OC 16

Kansas/Missouri

Time Warner Cable Local Weather (KC)

Kentucky

cn|2

New England

TWC TV (New England/Portland, Augusta)

New York

Time Warner Cable News NY1
Time Warner Cable Noticias NY1
Time Warner Cable News (Buffalo)
Time Warner Cable News (Hudson Valley)
Time Warner Cable News (Jamestown)
Time Warner Cable News (Rochester)
Time Warner Cable News Capital Region (Albany)
Time Warner Cable News Central NY (Syracuse)
Time Warner Cable News North Country (Watertown)
Time Warner Cable News Southern Tier (Binghamton)
Time Warner Cable News Your Traffic (Albany)
Time Warner Cable News Live Radar (Syracuse)
Time Warner Cable News Rail & Road (Hudson Valley)
Time Warner Cable News Rail & Road (NYC)

North Carolina/South Carolina

Time Warner Cable News (Charlotte)
Time Warner Cable News (Greensboro)
Time Warner Cable News (Raleigh)
Time Warner Cable News (Wilmington)
Time Warner Cable SportsChannel (NC – Raleigh, Charlotte, Greensboro, Wilmington; SC – Columbia, Florence, Myrtle Beach)

Ohio

Time Warner Cable Live Radar (Columbus)
Time Warner Cable Local Weather (Cleveland/Akron)

Texas

Time Warner Cable News (Austin)
Time Warner Cable News (Waco)
Time Warner Cable News Local Weather (Austin)
Time Warner Cable News Your Traffic (Austin)
Time Warner Cable Noticias Tiempo (Austin)
Time Warner Cable News Live Radar (Austin – North, Central, South, West, Waco/Kilene, Beaumont)
Time Warner Cable News Live Radar (Corpus Christi)

Attributable Interests in Regional and Local Programming Services

Nippon Golden Network Inc. (Hawaii)
NGN Hotel Channels (Hawaii) (available in hotels only)
SportsNet New York
SportsNet LA[3]

[3] TWC does not have an ownership interest in SportsNet LA, which features the games of the Los Angeles Dodgers, but provides affiliate sales, ad sales, and certain other production and technical services.

EXHIBIT 9

PROMISES MADE, PROMISES KEPT

Comcast's Track Record in the NBCUniversal, Adelphia, and AT&T Broadband Transactions

NBCUNIVERSAL (2011)

1. Increased Investment in Programming

☐ **PROMISE MADE**

Comcast has a strong track record of investing in programming and will bring that approach to the new NBCUniversal. The combined entity will have more ways to distribute sports programming than Comcast or NBCUniversal alone, plus an increased ability to compete more effectively for sports rights with other networks, such as ESPN/ABC, expanding the availability of sports programming for consumers.

☑ **PROMISE KEPT**

- Comcast pledged to make focused investments to ensure that the NBC Television Network remains vibrant and competitive, and the Company has been true to its word. Since 2011, Comcast has invested billions of dollars in programming for the NBC Television Network and gave it the necessary infusion of creative energy and organizational support to "go big" and reclaim its leadership among the broadcast networks. As a result of Comcast's investments, NBC is experiencing a turnaround after being mired in last place among the four major broadcast outlets for several years.
  - NBC is winning the 2013-14 primetime season in adults 18-49, adults 25-54, and other key demos, and ranked No. 1 among ABC, CBS, NBC, and Fox for the first time in 10 years this late in the season (since the 2003-04 season). The network is up 21 percent versus one year ago, with its highest rating 27 weeks into the season, in six years. *The Hollywood Reporter* (Mar. 19, 2014), http://bit.ly/O5cy76. For the first time in at least a decade, NBC is on track to hit the ratings "grand slam" by winning the adults 18-49 demo in the key programming blocks of morning news, evening news, primetime, and late night.
  - NBC's TODAY continues to gain momentum and deliver substantial ratings growth. The show was the No. 1 morning show for the 2014 February sweeps in the key adult 25-54 demo, dramatically tightening the overall morning race with ABC's "Good Morning America." The win marks TODAY's best February sweeps demo results in two years, and its best February sweeps total viewer delivery in four years. *NBCUniversal Press Release* (Mar. 6, 2014), http://bit.ly/1jw58Ea.
  - "NBC Nightly News with Brian Williams" continues its reign as America's most-watched network evening newscast. As of March 2014, "Nightly News" is currently posting its biggest audience (9.512 million) since the 2005-06 season and its largest advantage over ABC "World News" (+1.203 million) since the 2000-01 season. *Comcast Press Release* (Mar. 4, 2014), http://bit.ly/1lgPh0I.
  - In primetime, NBC's coverage of the 2014 Sochi Winter Olympics has led the network to its most dominant in-season week in the history of Nielsen's current People Meter sample, which dates back to September 1987. *TV by the Numbers* (Feb. 19, 2014), http://bit.ly/1gJFE8M. "NBC retained its gold-medal ratings status one night after the Sochi Games thanks to strong returns for the 'The Voice' and 'The Blacklist.' . . . The January 27,

2014 episode [of the "Blacklist"] set an all-time U.S. television record, growing by 6.67 million viewers from same-night to L+7 (10.17 million to 16.84 million)." *Variety* (Feb. 25, 2014), http://bit.ly/1lBfQh5.

- NBC's revamped late night lineup is an unqualified hit. During its first full week, "The Tonight Show starring Jimmy Fallon" averaged 8.490 million viewers overall, making it the most-watched week of "The Tonight Show" in 20 years, *Comcast Voices* (Feb. 24, 2014), http://bit.ly/1psXwUN, and the show "continues to lead the late-night pack by a considerable margin." *The Wall Street Journal* (Mar. 13, 2014), http://on.wsj.com/1fV3zvU. During March 2014, both "Tonight" and "Late Night with Seth Meyers" beat their respective ABC and CBS time-period competition in every key ratings category—adults, men and women 18-34, 18-49 and 25-54, plus total viewers. *Comcast Voices* (Mar. 13, 2014), http://bit.ly/1guYHDF.

- Comcast is infusing Telemundo with hundreds of millions of dollars in investments, plus the resources that the network requires to succeed in the Hispanic marketplace. "NBCUniversal's willingness to invest in making Telemundo more competitive in its battle against Univision and other outlets vying for Hispanic audiences has been a spark for the domestic Spanish-language marketplace." *Variety* (Jul. 30, 2013), http://bit.ly/1qxet3J.
  - Telemundo won the rights to World Cup and FIFA events from 2015 through 2022 in a deal worth more than $600 million, *The Hollywood Reporter* (Oct. 21, 2011), http://bit.ly/O3b7Xn. The network also debuted a new $10 million studio as part of its run-up to FIFA coverage. *Miami Today News* (Aug. 13, 2013), http://bit.ly/OST5qY.
  - Telemundo added more than 800 hours of original content, increasing the network's original programming slate by nearly 40 percent during the 2012-13 season, *Deadline.com* (May 14, 2012), http://bit.ly/1fVFjd9. Original content increased to over 1,000 hours of new content for the 2013-14 season, including five primetime telenovelas, two daytime series, and a musical-competition show coproduced with Ryan Seacrest Productions.
  - Telemundo Studios, the biggest producer of Spanish-language original content in the country, continues to expand a production operation that now delivers more than 750 hours of telenovela programming a year through its Miami studios. The Company also launched FLUENCY, a new Los Angeles based multi-platform production studio, to develop and produce premium content for multicultural audiences, especially U.S. Hispanics, in both Spanish and English. *Variety* (May 9, 2013), http://bit.ly/1jBflkA.
  - These investments in original content are driving Telemundo's growth. In 2013, Telemundo ranked as the fastest growing Spanish-language network year over year in primetime among total viewers and adults 18-49. *Telemundo Press Release* (Aug. 28, 2013), http://bit.ly/1p7UHbB.
  - The season finale of "La Voz Kids" on July 28, 2013 drew over 2.6 million total viewers and 1.34 million adults 18-49, making it Telemundo's highest-rated broadcast in the network's history of regular programming in the Sunday 8-11pm time period. During the finale's 10pm hour, Telemundo was the No.1 broadcast network among adults 18-49 and adults 18-34. *Telemundo Press Release* (Jul. 29, 2013), http://bit.ly/1mxtH8h.

- Comcast also preserved and enhanced NBCUniversal's marquee sports programming.
  - Comcast's $4.38 billion bid won the U.S. broadcast rights for the 2014 Sochi Winter Olympics and 2016 Rio de Janeiro Summer Games and the following two Olympics, beating out ESPN/ABC and News Corp.'s Fox, which had also bid for the rights package. "People at

NBC must be very happy,' said Wunderlich Securities analyst Matthew Harrigan. 'This shows that Comcast is committed to realizing value from the NBC network and stations long-term.'" *The Hollywood Reporter* (Jun. 7, 2011), http://bit.ly/1i15gw6.

- NBCUniversal agreed to pay $950 million per year to extend its NFL rights package through the 2022-23 season, plus the 2015, 2018, and 2021 Super Bowl games. *The Wall Street Journal* (Dec. 15, 2011), http://on.wsj.com/1dLJQoh. The new agreement includes many enhancements that broaden the exposure of NFL content on NBC, and across other NBCUniversal platforms. NBC will broadcast 19 regular-season games including 17 regular-season "Sunday Night Football" games, each season's opening NFL Kickoff Thursday night primetime game and the new Thanksgiving night game, and two playoff games (one wild card game and one Divisional game). *NBCSports.com* (Dec. 15, 2011), http://bit.ly/1iBEKZ3. The deal allowed NBC to retain the rights to "Sunday Night Football," the No. 1 show in primetime for the past six fall TV seasons. *Comcast Voices* (Jan. 2, 2014), http://bit.ly/1jCejDa.

- The networks of NBCUniversal will continue to be the home of the best NHL games. "In their first duel since Comcast and NBCUniversal joined forces, NBC has iced ESPN out of the NHL rights package, signing a deal that sources say will span a decade. While terms of the new 10-year pact weren't immediately available, the bidding is believed to have reached nearly three times the value of the current [NBC Sports] contract ($75 million per year)." *AdWeek* (Apr. 11, 2012), http://bit.ly/PkY2d0. NBC's broadcast of key matchups has been a ratings success. *Comcast Voices* (Mar. 3, 2014), http://bit.ly/1eFSOS3.

2. Increased Investment in NBC News

☐ **PROMISE MADE**

Comcast has made clear that it is committed to investing in and strengthening the venerable NBC News group.

PROMISE KEPT

- Under Comcast's stewardship, NBC News continues to preside over America's No. 1-rated newscast, "NBC Nightly News with Brian Williams," and the longest-running television series in American history, "Meet the Press."

- To enhance collaboration between its news brands, NBCUniversal combined its broadcast and cable news operations, putting NBC News, MSNBC, CNBC, and The Weather Channel under the corporate umbrella of the NBCUniversal News Group. This unified structure has increased the collaboration between teams. For example, NBC News and Telemundo officials now share logistical help, resources and planning. Telemundo reporters are starting to appear more frequently on NBC and MSNBC, and the same occurs on Telemundo for NBC's journalists who can speak Spanish. *NPR.org* (Aug. 14, 2012), http://n.pr/NM4fg8.

- The continuously growing online presence of NBC News, NBC News Digital, includes NBCNews.com, EducationNation.com, TODAY.com, NightlyNews.com, social media, and all of the network's digital initiatives. NBCUniversal News Group has also been expanding its digital presence and investing in digital properties that will attract a new generation of viewers.

- Comcast purchased Microsoft's 50 percent stake in MSNBC.com for $300 million and renamed the news site NBCNews.com. *The Hollywood Reporter* (Jul. 15, 2012), http://bit.ly/Q99IzR. "This is much more than a makeover. We're changing the way we tell stories," added NBC News Digital VP of News Gregory Gittrich in a statement to the press. "This is a full relaunch, from the back-end technology to the unique user experience and design—all fueled by a totally new content strategy. Our goal is to focus on original journalism, take advantage of the full extent of NBC News resources, and invest in coverage." *The Wrap* (Feb. 5, 2014), http://bit.ly/1iYSQWH.

- The new NBCNews.com also features a new vertical focused on original reporting and analysis relevant to the Latino community (www.nbcnews.com/news/latino), and will launch an additional vertical dedicated to serving the Asian Pacific Islander community. By integrating these verticals into the main site, that coverage will benefit from greater exposure to the broader NBCNews.com audience and the more significant promotion of the NBCNews.com site.

- The NBCUniversal News Group formed a strategic investment and content partnership with Revere Digital, the new technology-focused media company launched by highly regarded technology and digital media journalists Kara Swisher and Walt Mossberg, formerly of AllThingsD.com. Swisher and Mossberg's new company will manage a digital media and technology news, reviews and analysis web site called "Re/code" along with a global conference business. With this partnership, the NBCUniversal News Group will expand its Silicon Valley presence and technology coverage by incorporating Revere's breaking news and analysis stories across NBCUniversal News Group's multiple media platforms. *CNBC.com* (Jan. 2, 2014), http://cnb.cx/Q8YjQF. NBCUniversal News Group and NowThis News will collaborate to create original, short-form videos to be distributed across mobile and social platforms using content from TODAY, MSNBC, NBC News, and CNBC. The NBCUniversal News Group made multi-million dollar equity investments in both businesses.

3. Willingness to Experiment with New Products and Services

☐ **PROMISE MADE**

By combining NBCUniversal's programming with Comcast's multiple distribution platforms, the transaction will increase Comcast's and NBCUniversal's flexibility to experiment with and develop new ways to make programming available to consumers. As a result of the transaction, consumers will get more choice and more control over their viewing experience, and they will get it sooner rather than later.

 **PROMISE KEPT**

- Comcast's X1 platform is giving the Company the flexibility to rapidly innovate and offer new features and services to our customers. For example, Comcast worked directly with NBC Sports to build an HTML5 web app that brought the NBC Sports Live Extra app, and 1000+ hours of live Olympic event coverage, to TV for the first time. *Comcast Voices* (Feb. 19, 2014), http://bit.ly/Q8FblQ.

- Comcast and NBCUniversal are leading the industry's deployment of TV Everywhere.

  - "NBCUniversal now leads the industry in rolling out TV Everywhere, a benefit that has extended not only to Comcast, but to several other MVPDs." *IHS Technology* (Oct. 18,

2013), http://bit.ly/1cQanL2. Fifteen of NBC Universal's 18 channels now have a TV Everywhere application, and five of those offer live streaming.

- The Olympic Games have been a critical driver of TV Everywhere, helping to propel awareness and usage. NBC Sports delivered a massive 10.8 million hours of online video as part of its production of the 2014 Winter Olympic Games in Sochi, Russia. More than 8.5 million hours of video was consumed through "TV Everywhere" authenticated live streams on NBCOlympics.com and the NBC Sports Live Extra app. In an unprecedented effort, 225 multichannel distributors offered verification for their customers, with more than 4.8M devices successfully verified. NBCOlympics.com and the NBC Sports Live Extra app saw 24.6M video viewers (160 percent higher than the 2010 Vancouver Winter Games and 8 percent higher than the 2012 London Summer Games). And the February 21, 2014 verified live stream of the Olympic men's ice hockey semifinal between the United States and Canada generated more than 2.1 million unique users (2.12 million)—believed to be the largest "TV Everywhere" verified streaming audience in U.S. history, and ranking No.1 in unique users for any NBC Sports Digital stream, topping NBC's non-authenticated Super Bowl XLVI in February 2012. *NBC Sports Group Press Release* (Mar. 6, 2014), http://bit.ly/1kxP8lD.

- Comcast launched the Xfinity TV Go app, which enables customers to watch more than 50 television channels over the Internet on their Apple and Android-powered mobile devices, plus the ability to stream more than 25,000 VOD choices and download thousands of hit movies and TV shows to watch offline later. Participating networks include A&E, BBC World News, Bravo, beIN SPORT, beIN SPORT en Español, Big Ten Network, CNBC, CNN, Cooking Channel, Disney Channel, Disney Junior, Disney XD, DIY Network, E!, ESPN, ESPN2, ESPN3, ESPN Deportes, ESPNEWS, ESPNU, Food Network, FOX Business Channel, FOX News Channel, FOX Sports 1, FX, FXX, Golf Channel, HGTV, HISTORY, HLN, MSNBC, mun2, National Geographic Channel, Nat Geo WILD, NBCSN, Oxygen, Sprout, STARZ, Syfy, TBS, TNT, Travel Channel, truTV, USA Network, and all seven Pac-12 Networks. *Comcast Press Release* (Mar. 19, 2014), http://bit.ly/1rojBrg.

- Comcast launched the Xfinity TV store—offering subscribers select TV shows and movies for purchase several weeks ahead of DVD release—marking the Company's foray into the electronic sell-through ("EST") market to compete with iTunes, Amazon.com, Walmart's Vudu, and others. Subscribers who purchase the TV shows and movies can watch the programming on TV and through mobile devices. "In a recent conference call with analysts, Lionsgate CEO Jon Feltheimer noted that less than three months after Comcast began selling movies, it already controls 15 percent of the [EST]/Digital HD market—a testament to Comcast's aggressiveness and willingness to try new things. 'Comcast's recent entry into the EST business is already proving to be a catalyst for accelerated [digital] growth,' Feltheimer said." *Home Media Magazine* (Feb. 14, 2014), http://bit.ly/1fp9ddM.

- Comcast also launched new services that demonstrate its leadership in social television.

  - "Second-screen TV viewing companion app Zeebox is going live in the U.S. with big production and commercial support from NBCUniversal and parent Comcast that the trio say will elevate the new-wave multitasking practice to the mainstream. Siblings Comcast Cable and NBCU, which are 'lead partners,' have each invested an undisclosed sum for a minority equity stake, while NBCU will also produce in-app components to enhance 307 of its shows using Zeebox . . . ." *PaidContent.org* (Sep. 27, 2012), http://bit.ly/1itmpgV.

- Comcast and Twitter partnered to create a new feature called "See It" that gives millions of Xfinity TV customers the ability to instantly access TV shows, movies, and sports directly from a Tweet. "See It" debuted in November 2013 with shows from NBCUniversal's networks, and will soon reach millions of users through additional video distributors, television networks, and an expanded roster of popular shows from partners like ABC Entertainment Group, A+E Networks Group, AMC Networks Inc., Cablevision's Optimum TV, Charter Communications, Crown Media Family Networks, Discovery Communications, Fox Networks Group and Time Warner Cable. *Comcast Press Release* (Dec. 11, 2013), https://see.it/site/press. *Variety* noted that the "See It" button should be the "game-changer pay TV desperately needs" and that "TV Everywhere may finally live up to its name," thanks to "See It." *Variety* (Nov. 24, 2013), http://bit.ly/1hieQa6.

4. Advertising Efficiencies

☐ **PROMISE MADE**

The NBCUniversal transaction will allow the companies to offer complementary advertising opportunities and/or volume discounts, which are pro-competitive, and to share advertising resources. The transaction will also speed the deployment of advanced advertising services.

✅ **PROMISE KEPT**

- The Company launched "NBCU+ Powered by Comcast," a platform designed to sell targeted ads to VOD users while offering advertisers insights culled from anonymized subscriber set-top box data. The product will allow marketers to target ads by household in VOD for NBCUniversal's national broadcast and cable inventory. Previously, the only addressable-enabled inventory available on Comcast VOD was the Comcast-controlled time on cable networks. The goal is to give national advertisers additional audience data—beyond age and gender—to help them decide what brands to promote on which shows. *Comcast Press Release* (Jan. 30, 2014), http://bit.ly/1oQn3a7. "'No other media company today can do this,' said NBCUniversal Ad Sales President Linda Yaccarino." *Deadline.com* (Jan. 30, 2014), http://bit.ly/1jz3tQ1.

- Telemundo Media launched Telemundo+, an advertising collaboration between Telemundo and Comcast Spotlight—the advertising sales division of Comcast—to build an unprecedented advertising platform that enables leading marketers to geo-target relevant Hispanic households across multiple screens with English, Spanish, or bilingual customized messages on general market cable networks. *The New York Times* (Sep. 30, 2012), http://nyti.ms/1iVMqaD.

- Twitter, Comcast, and NBCUniversal also created an advertising partnership between NBCUniversal and Twitter through its Amplify program that will embed sponsored videos in tweets. *Daily Finance* (Oct. 9, 2013), http://aol.it/1dKaAD0.

- The Company established advertising sales partnerships between its owned stations and NBCUniversal regional sports networks ("RSNs"). For example, the NBC Owned Television Stations' sales organization acts as a paid representative in the national spot market for Comcast SportsNet New England, Philadelphia, Mid-Atlantic, Houston, Northwest, and SNY.

5. Talent Sharing and Cross-Promotion

☐ **PROMISE MADE**

The transaction will lead to synergies from the sharing of resources (including talent) in sports, local news, and entertainment programming. Sharing of resources would enable the combined company to reduce costs, expand output, and improve the quality of programming. The transaction also will give Comcast and NBCUniversal the incentive and ability to promote networks and shows on other networks either in the form of short advertisements or within programming itself, which increases consumers' awareness.

✅ **PROMISE KEPT**

- NBCUniversal-owned television stations in select markets are benefiting from the resources and specialized coverage provided by Comcast SportsNet regional networks. Comcast SportsNet Bay Area, which has the area's largest sports news team, provides live daily sports news segments for NBC Bay Area's 6pm and 11pm newscasts. *The Hollywood Reporter* (Apr. 20, 2012), http://bit.ly/1jyykui. A similar arrangement is in place between Comcast SportsNet Philadelphia and NBC Philadelphia. The collaboration will align Comcast SportsNet Philadelphia's dedicated all-sports staff, which produces over 1,600 hours of award-winning sports news and analysis annually, with NBC Philadelphia's unparalleled local newsgathering, weather, and traffic expertise. *CSNPhilly.com* (Nov. 18, 2013), http://bit.ly/1jyzo19.

- "Noticiero Telemundo" anchorman José Díaz-Balart has filled in as a daytime anchor on MSNBC. This makes Díaz-Balart the first journalist on U.S. television to anchor both an English and a Spanish-language newscast on two networks for a week straight. *MediaBistro.com* (Jun. 11, 2011), http://bit.ly/1mwKkB8. Díaz-Balart also appeared with NBC's Brian Williams during a Republican primary debate. *NPR.org* (Aug. 14, 2012), http://n.pr/NM4fg8.

- The Company has engaged in valuable cross-promotion across its various entertainment properties. "Project Symphony" is a strategic initiative to identify creative, technological, and strategic opportunities between Comcast and NBCUniversal's portfolio of entertainment platforms —a unique competitive advantage that yields significant ratings and box-office gains. *Variety* (Oct. 16, 2013), http://bit.ly/1dku3vW. For example, NBC took advantage of the Symphony program to promote its fall series across the portfolio and Comcast platforms, including "The Voice" and "The Blacklist," which claimed the No.1 and No. 2 spots among primetime viewership. Universal Pictures' "Despicable Me 2" also was supported by the Symphony program across NBCUniversal and Comcast content and platforms. Additionally, the Sochi Olympics were promoted across NBCUniversal's entire portfolio, as well as Comcast platforms. Other Symphony projects include, among others, the rebranding of Versus as NBC Sports Network (now NBCSN), *Adweek* (Aug. 2, 2011), http://bit.ly/NM1Imh, co-branding golf tournaments broadcast on NBC under the "Golf Channel" banner, and pairing Telemundo and Fandango to launch a movie site specifically geared toward Hispanic movie fans. *Multichannel News* (Feb. 25, 2013), http://bit.ly/1gw2v6w.

6. Unaffiliated and Independent Programming

☐ **PROMISE MADE**

The proposed transaction will not diminish Comcast's reliance on unaffiliated content.

Comcast will launch 10 independently owned or operated networks within eight years, eight of which are to be minority-owned or -controlled.

 **PROMISE KEPT**

- Comcast continues to rely on other content providers to provide the vast majority of its video content. At the close of the NBCUniversal transaction, nearly six out of seven channels Comcast carries were unaffiliated with Comcast. Today, that number has increased to nearly seven out of eight networks.
- Comcast is proud of its relationships with independent programmers. The Company carries more than 160 channels that have no affiliation with major programmers, including many niche, minority, and international channels.
- Within the first three years, consistent with the schedule to which it committed, Comcast launched five of the 10 independent networks that it committed to in the NBCUniversal transaction: BBC World News in 2011; ASPIRE and Baby First Americas in 2012; and REVOLT and El Rey in 2013. The latter four networks also satisfy the first half of Comcast's voluntary commitment to launch independent networks with Hispanic American or African American ownership or management.
- Comcast has pledged to add five more independent channels in the coming years, including four more with Hispanic American or African American ownership.

7. Programming Deals with Online Video Distributors and MVPDs

☐ **PROMISE MADE**

Continue to provide programming to online video distributors ("OVDs") and multichannel video programming distributors ("MVPDs").

 **PROMISE KEPT**

- Agreements with OVDs have become a regular part of the Company's program licensing business. Since the closing of the transaction, NBCUniversal has entered into or renewed numerous agreements with several OVDs, including deals with Amazon, Apple, Barnes & Noble, Best Buy, Google, Hulu, Microsoft, Netflix, Samsung, Sony, and Vudu, among others.
- NBCUniversal has also entered into various agreements with MVPDs that include access to linear channels across multiple platforms without resort to arbitration.
- The Company believes that its approach to online video distribution positions it as the most "online friendly" programmer and MVPD in the industry.

8. Telemundo VOD and Multicast

☐ **PROMISE MADE**

Comcast will use its Video on Demand ("VOD") and online platforms to feature Telemundo and mun2 programming. Comcast will launch a new multicast channel on its Telemundo Station Group stations by January 28, 2012, and make this programming available to Telemundo affiliates.

✅ **PROMISE KEPT**

- The Company has exceeded the three-year commitment to increase the number of Telemundo and mun2 programming choices on its central VOD storage facilities from 35 to 300. As of the end of January 2014, 335 Telemundo and mun2 VOD programming choices were available.
- In January 2012, Telemundo launched Exitos TV, a new network on Telemundo's multicast spectrum, across the 15 stations that then composed the Telemundo Station Group. As required, Exitos TV has been made available to the Telemundo-affiliated broadcast stations not owned by NBCUniversal.
- In addition, NBCUniversal created the Hispanic Enterprises and Content unit, which is charged with expanding its reach and relevance to Hispanic audiences across its news and entertainment platforms.

9. News, Public Affairs, and Other Local Interest Programming

☐ **PROMISE MADE**

Preserve and enrich the output of local news, local public affairs, and other public interest programming through the use of certain windows on the NBCUniversal-owned stations, time slots on the cable channels, and Comcast VOD and online platforms.

Establish cooperative arrangements with locally focused non-profit news organizations.

✅ **PROMISE KEPT**

- "When Comcast Corp. took over management of NBCUniversal in 2011, it made a commitment to significantly upgrade NBC's local news-gathering operations, which had been scaled back during the previous ownership during an advertising slump brought on by the Great Recession." *Los Angeles Times* (Feb. 7, 2014), http://lat.ms/1dn9BdU. Comcast has delivered on that promise by investing over $100 million in personnel, newsgathering capabilities, and capital improvements in the NBC Owned Television Stations and the Telemundo Station Group.
- Comcast's investments have helped the combined 27 local broadcast stations of the NBC Owned Television Stations division and the Telemundo Station Group to significantly over-deliver on their commitment to locally produce an additional 1,000 hours of local news and information programming over and above the amount aired in the year preceding the closing of the transaction.
  - During 2013, the 10 NBC Owned Television Stations produced and aired approximately 2,500 hours of regularly scheduled local news programming over and above the amount

aired in the year preceding the closing of the Transaction, surpassing the requirement to add 1,000 hours of new, local news programming by approximately 1,500 hours.

- At the Telemundo Station Group, the stations aired approximately 2,300 hours of regularly scheduled local news programming over and above the amount aired in the year preceding the closing of the Transaction, not including the news from the recently acquired stations in Philadelphia, PA and McAllen, TX. Telemundo's total exceeds the requirement in this condition by approximately 1,300 hours.

- Key investments in newsgathering capabilities and capital improvements at the owned television stations include:

  - The expansion of local news resulted in the hiring of more than 130 people across all 10 stations, including reporters, producers, and photographers. The NBC Owned Television Stations also established investigative and/or consumer units in all markets, added or upgraded dozens of vehicles for live news capability, purchased new cameras, built new sets and studios, added helicopter coverage, and restored promotions departments at all 10 stations. *Deadline.com* (Oct. 31, 2011), http://bit.ly/PuAT7S.

  - Similarly, the Telemundo Stations Group invested millions of dollars in capital improvements, including the expansion of local news, newsgathering equipment, transmission upgrades and technology, and distribution platforms. *The Hollywood Reporter* (Aug. 8, 2011), http://bit.ly/1hyy8Zt. A second round of investments was used to reinforce the stations' technological backbone and optimize distribution and signal quality across all markets. *NBCUniversal Press Release* (May 9, 2012), http://bit.ly/1pAitNH.

  - NBC4 Southern California (KNBC) inaugurated a two-building, 150,000-square-foot complex that eventually will be home to more than 600 workers. In addition to the staff of KNBC, the complex along Lankershim Boulevard will serve as the main West Coast bureau of NBC News, MSNBC, CNBC, and Telemundo News. In spring 2014, staff members of sister station Telemundo Los Angeles (KVEA) will join KNBC's operations in the eastern building of the complex. KNBC and KVEA reporters and editors will share a newsroom but the two stations will have separate studios. *Los Angeles Times* (Feb. 7, 2014), http://lat.ms/1dn9BdU.

  - The construction of a new state-of-the-art broadcasting and multimedia news facility shared by NBC 5 Dallas-Fort Worth (KXAS) and Telemundo Dallas (KXTX). *NBCDFW.com* (Oct. 1, 2013), http://bit.ly/N7EKFS.

  - Telemundo Philadelphia (WWSI), one of two new stations added to the Telemundo Station Group during 2013, launched its first-ever news department by hiring staff for its two new, Spanish-language newscasts. *Philly.com* (Jan. 14, 2014), http://bit.ly/1j3uGKx. Telemundo Philadelphia will soon share a new state-of-the-art studio with sister station NBC Philadelphia (WCAU) at the Comcast Innovation and Technology Center to be built in Center City Philadelphia. *Comcast Press Release* (Jan. 15, 2014), http://bit.ly/1m46K9Q.

  - Additional investment in the stations' news coverage includes NBC Washington's (WRC) opening of news bureaus in Northern Virginia and Prince George's County, Maryland to expand local coverage in those areas. Five stations—NBC4 Southern California (KNBC), NBC4 New York (WNBC), NBC 5 Chicago (WMAQ), NBC10 Philadelphia (WCAU), and NBC 5 Dallas-Fort Worth—have their own news helicopters instead of sharing them with competitors. NBC 4 New York (WNBC) debuted a new studio at Rockefeller Center for its

news broadcasts, while NBC 5 Chicago (WMAQ) and NBC 6 South Florida (WTVJ) remodeled their news studios. In addition, the control rooms were upgraded at the Telemundo Station Group stations serving the Bay Area (KSTS), Chicago (WSNS), Houston (KTMD), and Puerto Rico (WKAQ).

- Comcast invested more than $27 million for the purchase of two Telemundo broadcast stations: Telemundo Philadelphia (WWSI), *TVNewsCheck.com* (Jul. 2, 2013), http://bit.ly/1fut8Io, and Telemundo 40 (KTLM) in Rio Grande City, TX. *TVNewsCheck.com* (Jan. 2, 2014), http://bit.ly/1j0AofA. The Company upgraded WWSI's transmitter and antenna, and hired staff for two daily news broadcasts, the station's first-ever. *Broadcasting & Cable* (Sep. 11, 2013), http://bit.ly/1iijMho.

- The NBC Owned Television Stations enhanced their investigative resources by entering into cooperative agreements with locally focused, non-profit news organizations. As a result, five of the 10 stations in the NBCUniversal Owned Television Stations division maintain arrangements to cooperate on story developments, sharing news footage and other content resources, providing financial and in-kind support, sharing technical facilities and personnel, cross-promoting, and cross-linking/embedding of websites. These collaborations have resulted in over 40 investigations since the launch of the partnerships, and have generated dozens of on-air and online news reports for the stations, as well as on the partners' radio stations and websites. Beyond the reciprocal investigative and content production support, NBCUniversal has also provided financial assistance to its news partners.

- Comcast launched new local and public interest content on its VOD and online platforms, including public interest programming as part of its celebration of Black History Month, Asian Pacific American Heritage Month, LGBT Pride Month, Native American Heritage Month, and Hispanic Heritage Month, much of which is also available online at XfinityTV.com. In 2013, Comcast also launched the award-winning HisDreamOurStories.com in celebration of the 50th anniversary of the March on Washington.

10. VOD Choices

☐ **PROMISE MADE**

Maintain robust VOD offerings for our customers at no additional cost.

PROMISE KEPT

- Comcast has met—and exceeded—the three-year requirement to increase the number of free VOD programming choices from the 15,000 average monthly choices available before the closing of the NBCUniversal Transaction to 20,000 choices. During 2013, the total number of VOD choices available at no additional charge to Comcast subscribers averaged 38,991 a month. This includes an average of 739 VOD broadcast content choices a month (or a cumulative total of about 9,000 choices), a 162 percent increase over the 282 VOD broadcast content choices a month (or a cumulative total of about 3,387 choices) available during the year preceding the close of the NBCUniversal transaction (2010). And Comcast's VOD service continues to be the only VOD service that offers programming from all four major broadcast networks as soon as the day after it airs.

- In addition, Comcast's Watchaton™ weeklong event lets Xfinity TV customers get a free pass to 5,000+ episodes from more than 130 series from 48 premium, cable and broadcast networks. *Comcast Press Release* (Mar. 20, 2014), http://bit.ly/1gw9Z9U.

11. Journalistic Independence

☐ **PROMISE MADE**

Maintain NBCUniversal's policy of journalistic independence.

✅ **PROMISE KEPT**

- NBCUniversal's policy of journalistic independence remains in effect. Comcast has likewise adopted a policy to ensure the journalistic independence of the news programming organizations of all NBCUniversal networks and stations.

12. Children's Programming

☐ **PROMISE MADE**

Add an additional 1,500 VOD programming choices for children and families within three years. Comcast will pursue additional opportunities to feature children's content on all available platforms.

Provide additional educational and instructional ("E/I") programming on the NBCUniversal-owned television stations.

✅ **PROMISE KEPT**

- Comcast met and exceeded the three-year milestone to add an additional 1,500 VOD choices appealing to children and families. Total children's VOD programming choices during 2013 averaged 6,871 per month. This represents 4,093 more children's VOD choices than the 2,778 average monthly choices available during the year preceding the closing of the NBCUniversal transaction (2010). In addition, Comcast has provided its authenticated subscribers with access to most of these additional VOD programs through XfinityTV.com to the extent it had the rights to do so.

- Comcast also launched its Xfinity TV "Summer of Kids" event to spotlight its substantial library of family-friendly VOD content, along with more than 1,000 downloadable children's assets. *Comcast Press Release* (Jul. 1, 2013), http://bit.ly/1cT0HVz.

- The NBCUniversal Cable Entertainment Group increased its stake to full ownership of Sprout, deepening the Company's commitment to building an overall kids and family entertainment strategy. *Comcast Press Release* (Nov. 13, 2013), http://bit.ly/ORuSSc. Soon thereafter, Sprout launched Sprout NOW, giving subscribers unprecedented access to its content anywhere, anytime, on any device. Now, preschoolers and their families will be able to access all of their favorite Sprout series, including original programming via www.Sproutonline.com/now and through the Sprout NOW mobile app. Sprout NOW offers Sprout's live linear stream of programming as well as full episodes on demand and more. *Fierce Cable* (Feb. 26, 2014), http://bit.ly/1gVRjvm.

- All 10 stations in the NBC Owned Television Stations division are airing an additional (fourth) hour of children's E/I programming every week on their qualifying multicast channels. The Telemundo Station Group is also airing an additional hour of E/I programming every week on each station's primary channel, and now airs two hours of E/I programming on its primary channel on Saturday and Sunday morning, for a total of four hours per week.

13. Rating Icons and Parental Controls

☐ **PROMISE MADE**

Provide clear and understandable on-screen TV ratings information for all original entertainment programming on its broadcast and cable networks.

Improve set-top-box parental controls and parental dashboards.

In an effort to constantly improve the tools and information available to parents, Comcast will expand its growing partnership with Common Sense Media, a highly respected organization offering enhanced information to help guide family viewing decisions.

 **PROMISE KEPT**

- In early 2011, the NBC Network launched improved TV ratings icons that are 50 percent larger than the previous icons, use a high-contrast background-to-foreground color combination, and are displayed on screen for 15 seconds. Also in early 2011, consistent with the cable industry's best practices, all NBCUniversal networks deployed the improved television ratings icons. All of the programming provided by the NBCUniversal networks to NBC.com and other NBCUniversal websites also includes online program ratings information.
- Comcast has enhanced the functionality of the parental controls on its set-top boxes and introduced whitelisting capabilities to its parental control dashboard.
- Comcast also launched a parental controls microsite (http://xfinity.comcast.net/parents/) to help parents manage what their kids are watching on TV, online, and on mobile devices.
- During 2013, Comcast and NBCUniversal aired over $45 million worth of PSAs on parental controls, including over $7.87 million worth of spots in support of an industry-wide campaign to remind parents of where to find and how to use TV and film rating systems, and parental control blocking technology. *Fierce Cable* (Feb. 27, 2013), http://bit.ly/1pyFi4n.
- Common Sense Media content—including thousands of review videos, tip videos, ratings, and recommendations—is integrated into Comcast's VOD service and promoted on XfinityTV.com. Comcast also expanded its partnership with CSM to integrate the organization's TV and movie ratings into the "Kids" section of XfinityTV.com. As Comcast CEO Brian Roberts demonstrated on stage at 2013 The Cable Show, CSM ratings are fully integrated into Comcast's next-generation X2 platform, providing clear, practical information for parents at the point of decision. This platform will allow Xfinity TV customers to filter kids content by age, making it even easier for parents to discover movies and TV shows for their families. It also will provide CSM's ratings across platforms, so parents will have access to the information when watching video on the TV, PC, tablet, or smartphone.

14. Public Service Announcements

☐ **PROMISE MADE**

Provide $15 million worth of public service announcements ("PSAs") per year on topics such as digital literacy, parental controls, nutritional guidelines, and childhood obesity.

☑ **PROMISE KEPT**

- Since 2011, the Company has aired over $100 million worth of PSAs, nearly double the amount required. In 2013, Comcast's qualifying networks (*i.e.*, networks that have a higher concentration than the median cable network of adults 25-54 with children under 18 in the household) aired PSAs with a value of over $61 million, four times what was required by the condition.
- The childhood obesity PSAs aired at least once during each hour of NBC's "core" E/I programming, plus an average of two times a day on Sprout.
- In addition, in 2013, Comcast-NBCUniversal's networks ran close to $13 million worth of PSAs in support of Common Sense Media.

15. Community Programming

☐ **PROMISE MADE**

Develop a five-community pilot program to host PEG and other local content on VOD and online.

Comcast will not migrate PEG channels to digital delivery on any Comcast cable system until the system has converted to all-digital distribution (i.e., until all analog channels have been eliminated), or until a community otherwise agrees to digital PEG channels, whichever comes first.

☑ **PROMISE KEPT**

- Comcast conducted VOD and online PEG trials in five pilot communities from February 2011 to January 2014, which helped to ensure that the Company's launch of each platform had broad support from the local content creators. The VOD component of the pilot program consisted of dedicated content "folders" accessible to Comcast VOD customers in each of the pilot communities, while the online pilot program consisted of custom-built websites that were branded with the name and theme chosen by each pilot community. The websites serve as portals for the communities, traditional PEG programmers, and other partners to create and manage virtual "channels" where they can post video content, along with other local interest information. The results showed strong support among content providers and consumers for the pilot platforms, particularly the websites.
- Comcast has not migrated any PEG channels to digital delivery on any system that has not converted to all-digital distribution, and has not implemented changes in the method of delivery of PEG channels that resulted in a material degradation of signal quality or impairment of viewer reception.

16. Standalone Broadband

☐ **PROMISE MADE**

Provide consumers with the ability to obtain speed- and price-competitive standalone broadband access option.

PROMISE KEPT

- Comcast offers its "Performance Starter" tier, a 6 Mbps downstream / 1 Mbps upstream speed standalone broadband service, priced at $49.95 per month.
- Comcast has exceeded the requirement to offer a broadband tier of at least 12 Mbps downstream speed in all Comcast DOCSIS 3.0 markets. Customers in Comcast's top 30 markets have access to at least three higher speed tiers, including a "Performance" tier offering at least 25 Mbps downstream / 5 Mbps upstream and an "Extreme" tier featuring speeds of 105 Mbps down / 20 Mbps up.

17. Broadband Deployment

☐ **PROMISE MADE**

Expand access to broadband services.

PROMISE KEPT

- Comcast surpassed the three-year milestones of (i) expanding its broadband network by at least 1,500 miles per year for three years, and (ii) extending its broadband plant to approximately 400,000 additional homes. Since 2011, Comcast has extended its broadband network by approximately 6,300 miles and passed over 715,000 additional homes.
- In addition, Comcast extended its broadband infrastructure to 33 rural communities in 2011, exceeding its commitment to extend the network to six rural communities.
- Finally, Comcast added courtesy broadband and video accounts to over 650 schools, libraries, and other community institutions in underserved areas, exceeding the commitment to add 600 such accounts.

18. Internet Essentials™

☐ **PROMISE MADE**

Launch a broadband adoption program to help bridge the digital divide.

PROMISE KEPT

- *Internet Essentials* by Comcast is the nation's largest and most comprehensive broadband adoption program. It provides low-cost broadband service for $9.95 a month plus tax, the option to purchase an Internet-ready computer for under $150, and multiple options to access free digital literacy training in print, online, and in-person.

- In just two-and-a-half years, more than 1.2 million Americans, or 300,000 families, have been connected to the power of the Internet at home.
- Comcast has made a serious and sustained effort to get the word out on *Internet Essentials* by:
  - Distributing over 33 million brochures to school districts and community partners for free (available in 14 different languages).
  - Broadcasting more than 3.6 million public service announcements with a combined value of nearly $48 million.
  - Forging more than 8,000 partnerships with community-based organizations, government agencies, and elected officials at all levels of government.
- Other significant milestones include:
  - Offering *Internet Essentials* in more than 30,000 schools and 4,000 school districts in 39 states and the District of Columbia to spread the word and help bring more families online.
  - Investing more than $165 million in cash and in-kind support to help fund digital literacy initiatives nationally, reaching more than 1.6 million people through Comcast's non-profit partners.
  - Fielding 1.9 million phone calls to the *Internet Essentials* call center.
  - Welcoming 1.8 million visitors to the *Internet Essentials* websites, which supply information in both English and Spanish, and the Online Learning Center.
  - Providing *Internet Essentials* customers with more than 23,000 subsidized computers at less than $150 each.
- While Comcast's original commitment was unprecedented, it has greatly enhanced the program, taking these voluntary steps:
  - Extending the program indefinitely—beyond Comcast's initial three-year commitment. *Comcast Press Release* (Mar. 4, 2014), http://bit.ly/1gtR8aU.
  - Expanding the eligibility criteria for *Internet Essentials* twice, first by extending eligibility to families with children eligible to receive reduced price school lunches, and then by including parochial, private, cyberschool, and homeschooled students. As a result, nearly 2.6 million families nationwide are now eligible for *Internet Essentials*.
  - Increasing the broadband speeds for *Internet Essentials* customers twice in less than two years; *Internet Essentials* now offers up to 5 Mbps downstream, which is triple the speed offered at the beginning of the program.
  - Expanding an instant approval process for families whose students attend schools with 70 percent or more National School Lunch Program participation (previously, the threshold was 80 percent), which enhanced participation rates.
  - Creating an online application tool on both the English and Spanish-language *Internet Essentials* websites to make it easier and faster for a family to apply for *Internet Essentials*.

- Enabling Comcast's community partners to help connect low-income families to the Internet by purchasing Opportunity Cards that can be used toward the cost of paying for *Internet Essentials* service.
- Launching an enhanced version of its online Learning Center to provide families with enhanced and dynamic content, including new interactive content in Spanish.

- Comcast established a multi-year, multi-million dollar partnership with Khan Academy that will combine the free, world-class educational content of Khan Academy's award-winning website with the transformative potential of *Internet Essentials*. The commitment includes hundreds of thousands of PSAs, significant digital promotion in both English and Spanish, and multiple joint promotion opportunities around the country over the next few years. *Comcast Press Release* (Dec. 16, 2013), http://bit.ly/1ews82l.
- In addition, Comcast recently made grants totaling more than $1 million to communities across the country to create "*Internet Essentials* Learning Zones." The grants are part of Comcast's multifaceted Gold Medal Recognition Program for communities that have done the most to help close the digital divide. Learning Zones will bring together the non-profit community, schools, and Comcast to create a continuum of connectivity during the day, after school, and at home. As part of these efforts, Comcast offered an opportunity for all eligible families in these communities to receive free *Internet Essentials* service for six months if they registered with the program during a three-week period in March. More than 4,300 new families signed up for the program under this promotional offer.

19. Diversity Initiatives in the Memoranda of Understanding (MOU): Governance

☐ **PROMISE MADE**

Comcast and NBCUniversal will establish four external Diversity Advisory Councils with representative leaders from minority organizations, including African Americans, Latinos, and Asian Pacific Islanders. These four councils will work closely with each company's internal Diversity Council, providing advice on diversity issues, and collectively will comprise a new Diversity Joint Council. Both companies will measure and report on their corporate diversity initiatives through the Joint Council, which will meet at least twice annually, including one meeting each year with Brian L. Roberts, Comcast's Chairman and CEO.

 **PROMISE KEPT**

- Comcast and NBCUniversal established an external Joint Diversity Council to advise the Company regarding diversity and inclusion efforts. It consists of four, nine-member Diversity Advisory Councils representing the interests of African Americans, Asian Americans, Hispanics, and Women, respectively. The Joint Council also has At-Large Members representing Native Americans, people with disabilities, veterans, and the lesbian/gay/bisexual/transgender ("LGBT") community.
- The Joint Council participates in formal meetings attended by Comcast and NBCUniversal leadership, and regularly interacts with the Company's Internal Diversity Councils and corporate-level Diversity and Inclusion Groups to share information and consult about ideas for achieving diversity and inclusion goals. Brian L. Roberts, Comcast's Chairman and Chief Executive Officer, attends one formal Joint Council meeting each year, during which he holds individual meetings with each Diversity Advisory Council and the At-Large Members.

- Comcast and NBCUniversal's Diversity Councils are ranked 3rd among the 2013 Top 25 Diversity Councils by the Association of ERGs and Councils (formerly the Association of Diversity Councils), moving up from 5th place in 2012 and marking their 5th consecutive year on the Top 25 list.

20. MOU Diversity Initiatives: Workforce

☐ **PROMISE MADE**

Comcast and NBCUniversal commit that they will increase minority representation at all levels of their respective organizations. To bolster diversity in the leadership ranks, Comcast will require a diverse pool of candidates for all hires at the vice president level and above, including at least one person of color on every slate for all such hires, and NBCUniversal will focus on hiring opportunities for diverse senior level executives in development, production, casting, marketing, legal/business affairs, and distribution. The Company will also continue to support and will expand their active workplace diversity programs, including training on diversity issues, and continue to develop career-path programs, including mentoring programs.

 **PROMISE KEPT**

- Over the past three years, there has been a meaningful increase in diversity at the Company's vice president level and above (VP+). Between year-end 2010 and year-end 2013, the number of people of color at the VP+ level increased by 111 (or 32 percent), which drove a corresponding increase in their proportional representation—as of year-end 2013, people of color comprised 18 percent of the Company's total VP+ population. During the same time, the number of women at the Company's VP+ level increased by 157 (or 21 percent), which also drove an increase in their proportional representation—as of year-end 2013, women represented 36 percent of the VP+ population. The Company's performance was recognized when Comcast tied for first place among Women in Cable Telecommunications' (WICT) 2013 Best Operators for Women in Cable and NBCUniversal earned first place among WICT's 2013 Best Programmers for Women in Cable.

- Comcast and NBCUniversal have deployed a multifaceted approach to recruitment, leadership training programs, and innovative engagement initiatives, all aimed at attracting and developing a diverse talent pipeline:

  - Leadership, mentoring, and sponsorship programs: the Company offers more than 100 internal and external programs, including Comcast's Executive Leadership Career Advancement Program (ELCAP), Comcast Women in Leadership at Wharton, the TEAM NBCUniversal mentoring program, and the Executive Leadership Forum (ELF);

  - Employee resource groups representing numerous employee populations;

  - Diverse slate requirements for Vice President-level and above positions;

  - Internship and scholarship programs including Emma Bowen Foundation internships; and

- A veterans hiring initiative. Comcast is a leader in supporting and honoring the serving military and in hiring the nation's veterans. In March 2013, the Company announced that it had hired 1,000 veterans since January 2012, achieving its veteran hiring commitment to the U.S. Chamber of Commerce Foundation's "Hiring Our Heroes" initiative almost two years ahead of schedule. To celebrate the achievement, the Company doubled its pledge by committing to hire an additional

1,000 U.S. veterans by 2015. On November 7, 2013, the Company announced that it had achieved the 2,000 veterans mark, again beating its commitment two years ahead of schedule. The Company has been recognized for its workplace achievements, including, among others:

- *DiversityInc* named Comcast among the "Top 50 Companies for Diversity." *Comcast Voices* (Apr. 24, 2013), http://bit.ly/1s8wGFE.
- As mentioned above, Comcast tied for first place among Women in Cable Telecommunications' (WICT) 2013 Best Operators for Women in Cable, and NBCUniversal earned first place among WICT's 2013 Best Programmers for Women in Cable. *Comcast Voices* (Oct. 17, 2013), http://bit.ly/1mvwU8x.
- Comcast received a score of 85 on the Hispanic Association of Corporate Responsibility's (HACR) 2013 Corporate Inclusion Index. http://bit.ly/1jBqodx.
- *Equal Opportunity* magazine ranked Comcast No. 22 among its 2014 "Top 50 Employers". http://www.eop.com/awards-CD.php.
- *Careers & the Disabled* magazine ranked Comcast among its "Top 50 Employers" for 2013 and 2014. http://www.eop.com/awards-EO.php.
- Comcast Corporation was honored with the New York Urban League's 2013 "Champions of Diversity" Award.
- For the second year in a row, Comcast-NBCUniversal earned a 100 percent score on the Human Rights Campaign's (HRC) 2014 Corporate Equality Index, and is recognized among HRC's "Best Places to Work" list. *Comcast Voices* (Dec. 9, 2013), http://bit.ly/1i2oX3C.
- Comcast ranked ninth among HispanicBusiness.com's 2013 Best Companies for Diversity. http://bit.ly/QG5mQS.
- The National Association for Multi-ethnicity in Communications (NAMIC) honored Comcast and NBCUniversal with its "2013 Industry Diversity Champion Award." Comcast and NBCUniversal were each named a 2013 Top Company for People of Color by NAMIC.
- The National Hispanic Media Coalition (NHMC) honored Comcast for its Outstanding Diversity Practices during NHMC's 17th Annual Impact Awards Gala.
- LATINO Magazine recognized Comcast as one of the Top 15 companies actively encouraging Latinos to enter STEM careers. http://bit.ly/1lnxvX0.
- LATINO Magazine recognized Comcast-NBCUniversal among its first-ever LATINO 100, a listing of the top 100 companies providing the most opportunities for Latinos.
- Comcast has been recognized as a 2012 G.I. Jobs Top 100 Military Friendly Employer and a 2013 US Veterans Magazine Top 100 Best of the Best Veteran Friendly company, as well as a recipient of the 2012 US Chamber of Commerce Foundation's Lee Anderson Award for Comcast's commitment to veteran employment and support as key partners in their national "Hiring our Heroes" initiative.
- Universal Orlando won a 2012 Exceptional Employer Award from the State of Florida's Agency for Persons with Disabilities.

- The Legal Department of Comcast Cable Communications has been selected to receive the Minority Corporate Counsel Association's 2013 Employer of Choice Award for the Mid-Atlantic Region.
- Comcast Corporation received the Hall of Fame award among extra-large companies in the Philadelphia Business Journal's list of "Best Places to Work."
- The National Business Group on Health honored Comcast as the Special Recognition Winner for Best Family Engagement in the Best Employers for Healthy Lifestyles 2013 Awards.

21. MOU Diversity Initiatives: Procurement

☐ **PROMISE MADE**

Establish a supplier diversity program that creates sustainable relationships with, and economic opportunities for, diverse suppliers.

 **PROMISE KEPT**

- Over the course of three years, Comcast has spent almost $3.2 billion with diverse Tier I (prime) suppliers, including $1.3 billion in 2013 alone. Since the Company formally launched its Tier II program in 2012, prime suppliers have reported over $325 million in diverse Tier II subcontracting, including $186 million in 2013 alone.
- Other supplier diversity initiatives undertaken by Comcast and NBCUniversal include:
  - Partnering with diverse chambers of commerce and business organizations at the national and regional level;
  - Attending supplier diversity events, including supplier fairs, conferences, and capacity-building events, and business opportunity fairs, panels, and awards ceremonies;
  - Pursuing diversity objectives in its purchase of professional services, including banking and advertising services. For example, in April 2011, Comcast added The Williams Capital Group, L.P. (Williams Capital), a minority-owned bank, as one of its four placement agencies in its $2.25 billion commercial paper program, an ongoing effort whereby Comcast routinely sells short-term promissory notes to mutual funds and other investors for working capital financing. As of November 2012, Williams Capital had issued $1.2 billion of commercial paper for Comcast. In the advertising space, minority-owned Burrell Communications and Grupo Gallegos serve as Comcast's agency of record for African American and Hispanic creative, respectively.
  - Expanding efforts to track diverse Tier II spending by its prime suppliers and actively encouraging joint ventures, partnerships, and subcontracting between diverse suppliers as methods to create additional business opportunities for diverse vendors.
- Comcast has been recognized for its procurement-related achievements. In 2013 alone:
  - For the eighth consecutive year, DiversityBusiness.com recognized Comcast among its Top 50 Organizations for Multicultural Business.

- *Black EOE Journal* named Comcast among the “Top Diversity Employers” and “Top Supplier Diversity Programs.”
- *Hispanic Network Magazine* named Comcast and NBCUniversal among its “Best of the Best” in “Top Diversity Employers” and “Top Supplier Diversity Programs.”
- *Professional Woman’s Magazine* recognized Comcast-NBCUniversal among its Best of the Best lists for “Top Diversity Employers for Women” and “Top Supplier Diversity Programs for Women.”
- *U.S. Veterans Magazine* named Comcast-NBCUniversal among its Best of the Best lists for “Top Veteran-Friendly Companies” and “Top Supplier Diversity Programs.”
- For the sixth consecutive year, Comcast was named among the 10 Best U.S. Corporations for Veteran-Owned Businesses by the National Veteran-Owned Business Association.
- Comcast was named one the Best Companies for Asian Americans and Pacific Islanders by Asian Enterprise magazine, which recognized Comcast’s “unwavering and continued commitment to the small business community” and “invaluable contribution to the Asian American and Pacific Islander community.”
- Black Enterprise Magazine ranked Comcast Corporation among its annual list of 40 Best Companies for Diversity, recognizing Comcast and NBCUniversal’s Supplier Diversity Program, among other key strengths.
- NBCUniversal was named Corporation of the Year by the Greater Los Angeles African American Chamber of Commerce.
- For the second consecutive year, NBCUniversal was named to the U.S. Hispanic Chamber of Commerce Million Dollar Club.
- The PA-NJ-DE Minority Supplier Development Council (MSDC) recognized Comcast as National Corporation of the Year.
- The Rocky Mountain Minority Supplier Development Council named Comcast Corporation of the Year.

22. MOU Diversity Initiatives: Programming

☐ **PROMISE MADE**

Strengthen and enrich the offering of diverse programming choices, expand the distribution of diverse networks to millions of homes, and feature hundreds of VOD and online choices geared toward African American, Asian American, and Hispanic audiences.

NBCUniversal will expand its diversity-focused pipeline programs in programming development and management.

✅ **PROMISE KEPT**

- As mentioned above, Comcast has launched four of eight independent networks with Hispanic American or African American ownership: ASPIRE and Baby First Americas in 2012, and REVOLT and El Rey in 2013.
- Comcast has expanded the distribution of diverse African American, Asian American, and Hispanic content:
  - Comcast expanded distribution of The Africa Channel in the Detroit, Chicago, and Washington, D.C. markets. Comcast also launched The Africa Channel in its Northern Santa Barbara County, Savannah, Charleston, and South Florida markets, growing the network's audience by more than two million homes.
  - Comcast expanded carriage of TV One on its Xfinity TV lineup, making it available to over 600,000 additional customers in the Chicago and Miami markets.
  - Comcast announced a significant new carriage agreement with Mnet, the only 24/7 English-language nationwide television network in the U.S. targeting Asian Americans and fans of Asian pop culture, and subsequently extended carriage of Mnet to millions of additional Comcast subscribers in the San Francisco, Chicago, Sacramento, Boston, Washington, D.C., and Philadelphia DMAs in 2012. Comcast also launched MYX TV, a channel made for and by Asian Americans, in Seattle and western Washington.
  - Comcast extended distribution of seven Hispanic programming services (Azteca America, Galavisión, HITN, LATV, nuvoTV (formerly SíTV), Telefutura, and Univision) by more than 14 million subscribers. With this accomplishment, Comcast exceeded by more than 40 percent its commitment to expand carriage of three Hispanic networks by 10 million subscribers.
  - Comcast fulfilled its commitment to launch a package of 40 to 60 Spanish-language channels in all major Hispanic markets, including Northern California, Houston, South Florida, Chicago, Boston, Philadelphia, Washington, D.C., Denver, Salt Lake City, and Atlanta.
- Comcast has also has expanded the quality and quantity of diverse programming available through its VOD and online platforms —increasing the number of diverse VOD hours by more than 270 percent and the number of diverse online hours by nearly 170 percent over the past three years. These results are driven by the launch of new diverse-oriented VOD services, including Black Cinema On Demand, Hispanic Cinema On Demand, and Cinema Asian America, and by the launch of first-of-their-kind microsites for entertainment and news for diverse audiences, such as Celebrate

Black TV, Xfinity Latino, Xfinity Asia, Xfinity TV LGBT, and people with disabilities. Each microsite features audience-specific news, blogs, and Xfinity TV programming—including award-winning movies, TV shows, celebrity interviews, behind-the-scenes footage and entertainment news featuring entertainers, artists, and historical figures. The microsites complement the comprehensive content offerings available through Comcast's Xfinity VOD platform, where customers can access a special Multicultural folder for a wide array of culturally relevant content.

- The Company sponsored on-air and multimedia coverage of the ALMA Awards in 2011, 2012, 2013, and in the upcoming 2014 ceremony, and sponsored on-air and multi-media coverage of the NAACP Image Awards in 2012 and 2013.

- Comcast's diversity record has been made stronger by the NBCUniversal properties. "MSNBC is one such example. Over the past few years, the network has maintained a first-place standing in the cable news industry among both 25- to 54-year-old African-American viewers and total viewers. In fact, it grew its African-American audience by a remarkable 60 percent in 2012. Last year marked the fourth consecutive one in which MSNBC held the top spot with this segment. In addition, the network noted in its February 2014 ratings release that, according to Nielsen, it was 'also the most diverse cable news network.' The following figures were given to back that up: in weekday prime-time (Monday-Friday, 8pm-11pm), MSNBC ranked number one in African-American, Hispanic, and Asian 25-to-54 audiences for the month. In full day (Monday-Sunday, 6am-2am), MSNBC ranked number one among African-Americans and Hispanic 25-to-54 audiences." *PR Week* (Mar. 28, 2014), http://bit.ly/1jEd9eM. MSNBC's commitment to diversity is not only evident through its on-air hosts, contributors, guests, and newsroom staff, but also in its daily story selection and specials produced by the network.

- NBCUniversal and the U.S. Olympic Committee partnered to acquire the TV rights to the 2014 and 2016 Paralympic Games. NBC and NBCSN televised a combined 50 hours of coverage for the 2014 Paralympic Games from Sochi, which ran March 7-16, 2014. *NBC Sports Group Press Release* (Feb. 19, 2014), http://bit.ly/P1uh09. Paralympic programming was also featured on the Xfinity Accessibility microsite. NBC and NBCSN will again combine for 66 hours in September 2016 for the Paralympic Games from Rio de Janeiro, an increase from the 60.5 hours NBC Sports Group covered during the 2012 summer games.

- The Company's celebration of each diversity heritage month goes far beyond the special programming that is featured on its VOD and online platforms. The NBCUniversal-owned television stations also contribute programming time and special events. For example, in honor of Hispanic Heritage Month 2013 (September 15th through October 15th), the NBC-owned stations in New York, Los Angeles, Chicago, Philadelphia, Dallas-Fort Worth, Connecticut, and Miami broadcasted public service announcements, specials, news features and coverage of Hispanic heritage celebrations.

- NBCUniversal has long been a leader in offering diversity development programs to improve the interest and presence of diverse writers, directors, journalists, and on-screen personalities. Under Comcast's leadership, NBCUniversal has added even more signature programs. Highlights include:

  - Universal Pictures Emerging Writers Fellowship is designed to identify and cultivate new and unique voices with a passion for storytelling in the context of film. Emerging writers who are chosen to participate in the program will work within the studio to hone their skills and gain access and exposure to Universal executives, producers, and other key industry professionals. http://bit.ly/1guBeNm.

  - The Writers on the Verge program focuses on grooming diverse writers not just for NBCUniversal but for the entire television industry. More than 50 percent of Writers on the

Verge alumni are currently staffed on television shows across the industry landscape (alumni write for NBC shows such as "The Blacklist," "Dracula," "Chicago Fire," and "Chicago P.D."). Alumni write for USA Network series "Burn Notice & Suits" and for the Universal Television production "Brooklyn Nine Nine." http://bit.ly/PsPXCP.

- The Diverse Staff Writer Initiative gives writers from diverse backgrounds an entrée into the writers' room. The program encompasses NBC's late-night programs, in addition to prime-time scripted programs from NBC, USA and SyFy. Participants are selected and hired by the showrunners/producers of each show, with the guidance of the network and studios. The program has launched the careers of many talented writers in the past 13 years, including Mindy Kaling ("The Office," "The Mindy Project") and Donald Glover (writer on "30 Rock," and later talent on "Community"). http://bit.ly/1q8Jbz0.
- The Late Night Writers Workshop is designed for up-and-coming sketch and comedy writers to learn about NBCUniversal's late night line-up, gain insight into the dynamics of a late night writers' room, and provide insights on securing a staff writer position. http://bit.ly/1q1q5ci.
- The Casting Apprentice Program is rotational program designed for individuals with diverse backgrounds who aspire to join a casting office.
- The Director Fellowship Program (http://nbcudirectingfellowship.com/) gives well-established directors from the worlds of music video, commercials, and theater a chance to shadow directors of episodic television, and learn the craft. In the last two years the program has seen three directors have their first episodic directing assignments on "Parenthood," "Grimm," and "Community" through the program.
- The NBC News Associates Program is dedicated to identifying outstanding aspiring journalists. In 2011, this program was extended to the newsrooms of NBC Owned Television Stations and CNBC. In keeping with NBCUniversal's strong commitment to develop a diverse editorial staff across NBC News assets, the News Associates program is designed to attract candidates of diverse racial, ethnic, economic and geographical backgrounds, as well as candidates with disabilities. http://bit.ly/OilZzW.
- The Reporter Training Program is aimed at developing talented young on-air journalists from diverse backgrounds. Participants, who are selected annually, must hold a bachelor's degree in journalism, communications, or a related field and have a minimum of one to two years of experience in the news room or on-air reporting television news. *MediaBistro.com* (Sep. 19, 2011), http://bit.ly/1efMOMe.
- The News Summer Fellowship Program gives paid internships to nominees from the National Association of Black Journalists (NABJ), National Association of Hispanic Journalists (NAHJ), and Asian American Journalists Association (AAJA). Participants are college sophomores or above who are members of NABJ, NAHJ, or AAJA.

- The awards and recognitions bestowed on the Company demonstrate its commitment to diversity in front of and behind the camera. Highlights include:
  - Comcast Corporation received a 2014 Multicultural TV Front Runner Award for its commitment and efforts in support of the various multicultural communities it serves.
  - The National Hispanic Media Coalition (NHMC) honored Comcast for its Outstanding Diversity Practices during NHMC's 17th Annual Impact Awards Gala.

- The National Association for Multi-ethnicity in Communications' (NAMIC) 2013 Excellence in Multicultural Marketing Award (EMMA) winners included Comcast, which led the Cable Distributors division with five first-place wins, Telemundo Media (including mun2), which garnered three first-place wins, and International Media Distribution, which earned two first-place awards. Comcast's multicultural microsites were honored with six first-place honors at the 2013 EMMAs (Excellence in Multicultural Marketing Awards). *NAMIC Press Release* (Sep. 16, 2013), http://prn.to/1iFkPK4.

- NAMIC awarded Comcast its 19th Annual Vision Award for its original, multi-platform television programming that depicts the lives, spirit, and contributions of people of color and best reflects the diversity of the global viewing audience.

- Comcast-NBCUniversal productions were nominated for several 2014 NAACP Image Awards, including Andre Braugher for Outstanding Actor in a Comedy Series ("Brooklyn Nine-Nine," a Universal Television production for FOX); Mindy Kaling for Outstanding Actress in a Comedy Series ("The Mindy Project," a Universal Television production for FOX); Tracy Morgan for Outstanding Supporting Actor in a Comedy Series ("30 Rock"); and Rashida Jones for Outstanding Supporting Actress in a Comedy Series ("Parks and Recreation"). The syndicated Universal Television production "Steve Harvey" won the award for Outstanding Talk Series.

- NBC News receives consistently leading marks from the National Association of Black Journalists annual survey of diversity in front of and behind the camera.

- Focus Features' "Dallas Buyers Club" earned Best Actor and Best Supporting Actor honors at the 86th Annual Academy Awards and the 2014 Golden Globes. The film tells the true story of AIDS patient Ron Woodroof, who partners with a transgender woman to sell unapproved medication to HIV-positive patients.

- The Gay, Lesbian & Straight Education Network (GLSEN) honored USA Network's Characters Unite campaign with its "Inspiration Award."

- Sixteen Comcast-NBCUniversal productions were nominated for GLAAD Media Awards in 2014, including:

    - "Dallas Buyers Club" (Focus Features) – Outstanding Wide Release;
    - "There's the Door" Necessary Roughness (USA Network) – Outstanding Individual Episode;
    - "Days of Our Lives (NBC) – Outstanding Daily Drama;
    - "Gay Rights at Work" MSNBC Live (MSNBC) – Outstanding TV Journalism Segment;
    - "Pride & Prejudice" Melissa Harris-Perry (MSNBC) – Outstanding TV Journalism Segment;
    - "Scouts Dishonor" The Last Word with Lawrence O'Donnell (MSNBC) – Outstanding TV Journalism Segment;
    - "Wild Blue Yonder: Scott Hines" The Rachel Maddow Show (MSNBC) – Outstanding TV Journalism Segment;

- "Entregando a mi nieta" Caso Cerrado (Telemundo) – Outstanding Daytime Talk Show Episode [Spanish Language];
- "Exclusivas Declaraciones" Al Rojo Vivo (Telemundo) – Outstanding Daytime Talk Show Episode [Spanish Language];
- "Matrimonios del mismo sexo: Entrevista con Daniel Zavala y Yohandel Ruiz" Un Nuevo Día (Telemundo) – Outstanding Daytime Talk Show Episode [Spanish Language];
- "Decisión Histórica" Noticiero Telemundo – Outstanding TV Journalism Segment [Spanish Language];
- "Hasta que la corte nos una" Noticias Telemundo Miami – Outstanding Local TV Journalism [Spanish Language];
- "Natalia: rompiendo barreras" Noticiero Telemundo Arizona – Outstanding Local TV Journalism [Spanish Language]; and
- “Brooklyn Nine-Nine” (Universal Television for FOX) – Outstanding Comedy Series.

– In 2013, NBCUniversal productions received three awards and eighteen GLAAD Media Award nominations. The winning entries were “Smash” (NBC) - Outstanding Drama Series; “The New Normal” (NBC) - Outstanding Comedy Series; and “Being Transgender in America” by Melissa Harris-Perry (MSNBC) – Outstanding TV Journalism / News Magazine.

23. MOU Diversity Initiatives: Community Investment

☐ **PROMISE MADE**

Comcast will increase its community investment spend on minority-led and minority-serving institutions by 10 percent per year for each of the next three years.

☑ **PROMISE KEPT**

- Comcast and NBCUniversal have increased year-over-year support of community-based philanthropic organizations helping underserved and diverse communities. Since 2001, Comcast's overall giving has exceeded $3.2 billion in cash and in-kind contributions supporting local non-profit organizations and other charitable partners across the country, $415 million of which was given in 2013 alone.
- In 2010, Comcast and NBCUniversal committed to increase aggregate cash support to minority-led and minority-serving (“MLMS”) organizations by ten percent per year in 2011, 2012, and 2013. The Company significantly exceeded this commitment, increasing its spending by more than 100 percent, for a total MLMS spend of more than $30.7 million since the closing of the NBCUniversal transaction.
- Comcast achieved this unprecedented level of support for MLMS institutions, in part, through the extensive activities and programs of the Comcast Foundation, led by the corporate team, but extended throughout Comcast’s footprint by the cable divisions. This included extensive outreach to and work with the Company's community partners, as well as the important work of the following signature programs:

- Comcast undertakes the largest single-day corporate volunteer effort in the nation—Comcast Cares Day. In 2013, more than 85,000 volunteers participated at over 750 project sites, contributing their time and energy to clean up parks, make over schools, and landscape playgrounds. Comcast Cares Day was one of the reasons that Comcast was ranked among "The Civic 50" by the National Conference on Citizenship, Points of Light Foundation, and Bloomberg News.

- Now in its 13th year, the Comcast Leaders and Achievers® Scholarship Program recognizes high school seniors for their community service, academic achievement and leadership skills. Funded through the Comcast Foundation, the program recognizes high school seniors from Comcast communities for their commitment to community service, academics and demonstrated leadership. To acknowledge these accomplishments, Leaders and Achievers are awarded one-time scholarships, with a base award of $1,000. Since 2001, Comcast has awarded close to $20 million in scholarships to nearly 20,000 students. More than 950 scholarships awarded last year benefitted students from diverse backgrounds.

- The Comcast Digital Connectors program trains youth from primarily diverse, low-income backgrounds in Internet and computer skills. Teens meet weekly after school, have the option to earn a Cisco IT Essentials certification of completion and receive a complimentary laptop upon graduation from the program. Comcast Digital Connectors is also a community service program, as participants volunteer at senior centers, churches, local schools and other community organizations, spreading digital literacy in their community. Since the program began, more than 2,000 Digital Connectors have participated, volunteering more than 100,000 hours to bridge the digital divide in their communities. Through training and service, Comcast Digital Connectors is preparing today's youth for the jobs of tomorrow.

- Each year, Comcast and NBCUniversal employees rally around our communities by supporting United Way. Through an annual employee giving campaign, company employees pledged nearly $6.4 million to United Way during the 2013 campaign. Not only did the Company employees break the company record for dollars pledged, with year-over-year, double-digit growth, the campaign also had record-breaking employee participation. Combined with matching Comcast Foundation grants, the campaign will provide almost $8 million next year to local United Ways and affiliate organizations across the country—taking us beyond $50 million in total historic support to United Way. *Comcast Voices* (Nov. 25, 2013), http://bit.ly/1m4QqWd.

- Comcast and NBCUniversal also increased support for organizations offering fellowship, internship, and scholarship programs that support diverse beneficiaries. Substantial support was also given to promote the good work of its diverse partners through PSAs and other media placements, both locally and nationally.

- Comcast and NBCUniversal have been recognized for community investment-related achievements, including in 2013 and 2014:

  - United Way Worldwide recognized Comcast Corporation with two 2013 Summit Awards for volunteer and philanthropic engagement.

  - The Congressional Black Caucus Foundation, Inc. (CBCF) recognizes Comcast as a Distinguished Corporation for its tremendous work in promoting digital literacy.

  - Comcast was recognized among "The Civic 50" and was named the third best in the communications industry for 2013. *Comcast Voices* (Dec. 5, 2013), http://bit.ly/1grtHmU.

- Comcast and the City of Chicago were awarded the U.S. Conference of Mayors Outstanding Award for Public/Private Partnerships for the collaborative efforts to close the digital divide via Comcast's *Internet Essentials* program.

- The United States Hispanic Chamber of Commerce and the National Urban League, among others, applauded the indefinite extension of the *Internet Essentials* program. "We look forward to working with Comcast NBCUniversal to help leverage the Internet Essentials program to drive job growth, create more opportunities for minority-owned businesses and improve education outcomes in underserved areas." *National Urban League Press Release* (Mar. 4, 2014), http://bit.ly/1myWuJE.

- Comcast was presented with the "Bridging the Gap" Award during The Foundation for Florida Virtual School's second annual Opening Doors to the World Awards Celebration in Orlando. The "Bridging the Gap" Award was in recognition of Comcast's *Internet Essentials* Program that connects low-income families to the internet. The Foundation for Florida Virtual School presents this award to an organization that demonstrates a resourceful approach to education by connecting communities through innovation and technology.

- Comcast-NBCUniversal was honored among United States Hispanic Chamber of Commerce's Million Dollar Club ($100M-$250M category), which recognizes corporations and procurement executives who actively demonstrate an unwavering commitment to Hispanic Business Enterprises through their work with Hispanic suppliers.

- During its 2013 Corporate Philanthropy Summit, the Philadelphia Business Journal presented Comcast Corporation with the "Top Community Impact Award" and the "Top In-Kind Donor Award" in the extra-large company category. Comcast was also ranked as the fifth largest corporate charitable giver in the Philadelphia region.

- Comcast received a Beacon Award® from the Association of Cable Communicators for its *Internet Essentials* Ambassadors Program.

24. MOU Diversity Initiatives: Catalyst Fund

☐ **PROMISE MADE**

Establish a $20 million venture capital fund to expand opportunities for businesses with minority ownership in new media content and applications.

PROMISE KEPT

- In 2011, Comcast Ventures established a $20 million venture capital "Catalyst Fund" (originally named "Opportunity Fund") for investments in early-stage ventures led by diverse entrepreneurs with innovative technology ideas and solutions that fit within its investment focus. The Fund's goal is to create the most diverse and valuable early stage portfolio in the venture industry.

- The Catalyst Fund's first investment was in the startup accelerator DreamIt Ventures, which operates DreamIt Access, a concentrated effort to increase the number of high-value, minority-led tech startups. During this three-month program, participating startup companies receive seed funding and access to DreamIt Ventures' benefits and services, including business talent, legal and accounting services, mentoring, office space, guidance from leading business visionaries, and contacts to reach the next level of development. In addition, DreamIt Access offers mentors, special

events, and advisors with a particular interest in increasing the number of successful minority-led startups.

- Through its DreamIt Access partnership, the Catalyst Fund has sponsored 20 minority-led startups since 2011, 16 of which are still operating. The majority of these companies are focused on web and mobile technologies. In January 2014, Comcast Ventures announced its commitment to support the DreamIt Access track for two more years, with the ability to support up to 20 minority-led companies over the course of four cycles.
- In addition, the Catalyst Fund has made direct investments in seven minority-led startups:
  - ElectNext, a political data analysis firm (Philadelphia Fall 2011 DreamIt participant) (August 2012)
  - Quad Learning, an online two-year honors program for community and junior college students to enhance their college transfer options (January 2013)
  - Reactor, Inc., a speech enabled news assistant for mobile devices firm (New York Summer 2012 DreamIt participant) (March 2013)
  - Loverly, an online wedding discovery and inspiration site (May 2013)
  - Viridis Learning, an educational and technology company combining workforce education and human capital solutions for the middle-class workforce (June 2013)
  - Maker's Row, an online marketplace for connecting designers with American-based factories (July 2013)
  - Mercaris, a market data service and online trading platform for organic, non-GMO, and certified agricultural commodities (October 2013)

ADELPHIA (2006)

1. System Upgrades

☐ **PROMISE MADE**

Comcast will spend $150 million to upgrade Adelphia systems.

 **PROMISE KEPT**

- Comcast significantly exceeded our promised investment. Between August 2006 and March 2008, Comcast spent over $660 million to upgrade systems acquired from Adelphia.

2. New Products and Services

☐ **PROMISE MADE**

Comcast will put its technological leadership to work in Adelphia's systems, which should dramatically advance the roll-out of new services.

Comcast will significantly accelerate the roll-out of competitive voice services in Adelphia's franchise areas.

 **PROMISE KEPT**

- Despite the poor conditions of many of the cable systems Comcast acquired from Adelphia, Comcast was able to deploy digital cable, HDTV channels, and High-Speed Internet in all the acquired systems. Comcast also launched VOD service, which Adelphia did not offer.
- The FCC also cited the deployment of VoIP as a potential benefit of Comcast's acquisition of the Adelphia systems. Despite the technical hurdles, Comcast launched VoIP services to most homes in the former Adelphia footprint —Adelphia did not offer voice services and had canceled plans to launch its own VoIP service.

AT&T BROADBAND (2002)

1. System Upgrades

☐ **PROMISE MADE**

When the AT&T Broadband systems joined Comcast in 2002, perhaps the greatest concern expressed by local communities had to do with system upgrades that were either behind schedule or incomplete. Without these needed upgrades—and the expanded system bandwidth—many communities simply could not receive such advanced broadband offerings as digital cable, HDTV, VOD, and High-Speed Internet. As a result, Comcast made a commitment to bring the former AT&T Broadband technical system up to the level of Comcast's standards as quickly as feasible. This meant an up-front commitment by Comcast of significant capital and manpower to complete the rebuilds that were either behind schedule or stopped.

☑ **PROMISE KEPT**

- Through 2006, Comcast had spent nearly $8 billion in capital improvements. Much of that expenditure was devoted to former AT&T Broadband systems. In addition, Comcast exceeded its already aggressive construction plans by over 15 percent. Comcast met or exceeded every upgrade target that it had established, and ended 2004 with virtually all of its cable systems fully upgraded with two-way capability. Specifically:
  - Comcast accelerated AT&T's five-year upgrade plan to a two-year plan, and system upgrades moved forward, generally ahead of Comcast's two-year schedule. In 2003, $1.3 billion was spent on upgrades alone. By the year's end, 53,000 plant miles were constructed—an industry record. The vast majority of these miles were in former AT&T Broadband systems.
  - In San Francisco, CA, Comcast invested $600 million to rebuild and upgrade the technical capacity of the former AT&T Broadband systems in the San Francisco Bay area. Prior to the acquisition, the systems had essentially no upgraded plant. Post-transaction, Comcast installed more than 11,000 miles of fiber-optic plant throughout the Bay area, allowing for introduction of HDTV, VOD, and DVR services and increases in High-Speed Internet speeds.
  - In Jacksonville, FL, the company faced a formidable task of rehabilitating a system with a stalled rebuild and virtually no senior management structure. Comcast quickly addressed these challenges. It installed a veteran management team, invested substantial resources to upgrade the system, and completed the long-promised upgrade ahead of plan.
  - In November 2004, Comcast completed a $450 million upgrade of its broadband network in Chicago. This effort included upgrading and constructing more than 10,000 miles of broadband networks.
- In recognition of these and other achievements, Comcast was named Operator of the Year by Multichannel News in 2003. *Multichannel News* (Sep. 29, 2003) (noting that, with respect to the upgrade of the former AT&T systems, Comcast "outperformed even its own stated expectations"), http://bit.ly/1l0rqC6.

2. New Products and Services

☐ **PROMISE MADE**

The investment in upgrading the technical capacity of the systems acquired from AT&T Broadband will allow Comcast to offer its subscribers both advanced broadband products and an even wider range of diversified programming services.

PROMISE KEPT

- Upgraded AT&T Broadband systems received Comcast's most advanced video and broadband services available at that time, including Digital Cable, VOD, HDTV channels, digital video recorders (DVRs), High-Speed Internet, and Comcast Digital Voice (VoIP).
- Comcast also expanded programming offerings of special interest to an even wider group of audiences. Hispanic programming tiers were made available to Comcast Digital Cable customers.
- As a result of its "massive upgrade project" and the resulting "[b]reakthrough advances in its digital video and high-speed data platforms, and effective leadership regarding the future of technology for itself and the industry at large," Comcast was named Operator of the Year by Communications Technology Magazine in 2004. *Communications Technology* (Jun. 1, 2004), http://bit.ly/1eOxIxn. Similarly, in recognition of its "uncommon mastery of technology, innovation, globalism, networked communication, and strategic vision," Comcast was named to Wired magazine's Wired 40 list in 2004. *See Wired* (June 2004), http://wrd.cm/1j0XfXd.

3. Reduced Debt, Strong Balance Sheet

☐ **PROMISE MADE**

The sheer scale of the Comcast-AT&T Broadband transaction generated some tough questions about the financial viability of the proposed new company. Comcast guaranteed early on, however, that the new company would be financially secure enough to fulfill the commitments we made.

PROMISE KEPT

- Comcast was able to meet or exceed financial expectations, even while expending significant resources to complete the upgrading of the former AT&T Broadband systems. In addition, basic subscriber loss stopped, reflecting an especially critical benefit generated by our initiatives targeted at improving service and delivering products with special value to our customers. In the year prior to the merger, AT&T Broadband lost 500,000 subscribers; we turned that negative trend around in only one year.
- From the outset, many concerns were raised about Comcast's ability to operate at an optimal level while taking on the significant amount of debt the company was assuming in conjunction with the AT&T Broadband merger. Our commitment, however, was to diligently de-leverage the company, in much the same way that Comcast has done with all of our previous acquisitions, and Comcast accomplished that goal in less than twelve months.

EXHIBIT 10

APPENDIX A
Conditions

I. DEFINITIONS

For purposes of the conditions set forth in Sections I-XX below ("Conditions"), capitalized terms shall have the meanings set forth below:

"AAA" means the American Arbitration Association.

"AAA Rules" means the rules of the AAA from time to time in effect.

"Affiliate" of any person means any person directly or indirectly controlling, controlled by, or under common control with, such person at the time at which the determination of affiliation is being made.

"Attributable Interest" means a cognizable interest in an entity as defined pursuant to 47 C.F.R. §76.1000(b).

"Benchmark Condition" means that an OVD has entered into at least one agreement for Video Programming with a Broadcast Network, Cable Programmer, Production Studio or Film Studio that is not an Affiliate of the OVD.

"Broadband Internet Access Service" means a mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up Internet access service. This term also encompasses any service that the Commission finds to be providing a functional equivalent of the service described in the previous sentence, or that is used to evade the Conditions.

"Broadcast Network" means The Walt Disney Company (ABC), CBS, Inc. (CBS), News Corporation (FOX), and their managed or controlled subsidiaries, and their successors and assigns, and any other Person that is one of the top three providers (other than a C-NBCU Programmer) of live or recorded Video Programming over a group of local television stations by U.S. broadcast revenue in the latest declared financial year.

"Business Day" means any day that is not a Saturday or Sunday or a federal holiday.

"Cable Programmer" means Time Warner, Inc., The Walt Disney Company, News Corporation, Viacom, Inc., and their managed or controlled subsidiaries, successors and assigns, and any other Person other than a Broadcast Network or local television station that is one of the four top providers (other than a C-NBCU Programmer) of Video Programming for distribution through MVPDs by U.S. cable revenue in the latest declared financial year.

"Carriage Agreement" means any retransmission consent agreement for broadcast programming or any other agreement for carriage of Video Programming by an MVPD or OVD.

"Claimant" means an MVPD, Qualified OVD or Bargaining Agent.

"Closing" or "Closing the Transaction" means the consummation of the transaction by and among General Electric, NBCU, and Comcast more fully described in paragraphs 1-19 of this Order.

"C-NBCU" means the joint venture created as a result of the transaction approved with conditions by this Order together with its subsidiaries, Affiliates, successors, and assigns.

"C-NBCU Programmer" means Comcast, C-NBCU, their Affiliates and any entity for which Comcast or C-NBCU manages or controls the licensing of Video Programming and/or any local broadcast television station on whose behalf Comcast or NBCU negotiates retransmission consent.[1]

"Comcast" means Comcast Corporation together with its Affiliates, successors and assigns.

"Comparable Programming" means Video Programming that is reasonably similar in kind and amount. For purposes of determining whether Video Programming constitutes Comparable Programming, the parties or an arbitrator, as applicable, shall consider the following factors, among others:

(i) the number of channels and/or shows; and

(ii) the similarity of the value of the Video Programming, as evidenced by ratings, affiliate fees and/or advertising revenues and the time elapsed since the programming was first distributed.[2]

The following categories of Video Programming are not Comparable Programming (among others): [3]

(i) programming made available for presentation a day or more after it is first presented to viewers is not comparable to programming made available for presentation the first day;

(ii) sports programming is not comparable to non-sports programming;

(iii) local news programming is not comparable to programming that is not local news programming;

(iv) prior season programming is not comparable to original, first-run programming;

(v) broadcast programming is not comparable to cable programming;

(vi) Children's Programming is not comparable to programming that is not Children's Programming (defined, only with regard to Section XIII, as programming originally produced and aired primarily for an audience of children 12 years old or younger);

(vii) Films are not comparable to non-Film programming; and

[1] Comcast and NBCU are prohibited from acquiring an Attributable Interest in any provider of Video Programming unless that provider is obliged to abide by the conditions set forth in this Appendix.

[2] If an agreement triggering the Benchmark Condition involves substantially all of a Person's linear channel(s), then the C-NBC Programmer may require the OVD to license a bundle of substantially all of C-NBCU's linear channels (plus other rights if included in the triggering agreement) as the Comparable Programming. If the C-NBCU Programmer opts to license less than the bundle described above, then the parties or arbitrator (as applicable) shall take into account any pricing adjustments from the bundled price necessary to reflect fair market value.

[3] Programming shall not cease to be comparable solely because packages of programming contain some programming that is not comparable. For example, a channel, a bundle of channels or a bundle of programs may contain both sports and non-sports programming and still be eligible to trigger the Benchmark Condition or serve as Comparable Programming provided by a C-NBCU Programmer. If a bundle contains a mix of programming, some of which is comparable and some of which is not comparable, the C-NBCU Programmer shall satisfy a demand under the Benchmark Condition to the extent possible by providing programming that is similar in amount to the programming triggering the Benchmark Condition to the extent that programming is comparable to programming of C-NBCU Programmers (*e.g.,* if an OVD obtains 10 shows triggering the Benchmark Condition, 5 of which are comparable to C-NBCU programming, C-NBCU Programmers would have to provide 5 shows).

(viii) Films in the following categories are not comparable to each other: (x) Films less than five years from initial theatrical distribution, and (y) Films over five years from initial theatrical distribution.

"Economic Model" means the primary method by which the Video Programming is monetized (*e.g.*, ad-supported, subscription without ads, subscription with ads, electronic sell through ("EST") or PPV/TVOD) reflected in the terms of the agreement(s) for the Comparable Programming.

"Experimental Deal" means an agreement between an OVD and another Person for a term of six months or less.[4]

"Film" means a feature-length motion picture that has been theatrically released.

"Film Studio" means Warner Bros. Entertainment, Fox Filmed Entertainment, Paramount Motion Pictures, Sony Pictures Entertainment, Walt Disney Motion Pictures Group, and their managed or controlled subsidiaries, successors and assigns, and any other Person that is one of the top five distributors (other than a C-NBCU Programmer) of Films by U.S. box office gross revenue in the latest declared financial year.

"MVPD" means a multichannel video programming distributor as that term is defined in 47 C.F.R. § 76.1200(b).

"MVPD Price Condition" means that an OVD is willing to pay the economic equivalent of the price, terms and conditions on which C-NBCU Programmers provide Video Programming to MVPDs.

"NBCU" means NBC Universal, Inc. and its Affiliates.

"Online Video Programming" means Video Programming that any C-NBCU Programmer has the right to enable others (including but not limited to other MVPDs and OVDs, but not including solely Comcast or C-NBCU) to display by means of the (i) Internet or (ii) other IP-based transmission path provided by a Person other than the OVD.

"Order Date" or "date of this Order" means the date on which the Commission releases its Order in MB Docket No. 10-56 resolving the Application, as defined therein.

"OVD" means any entity that provides Video Programming by means of the (i) the Internet or other IP-based transmission path provided by a Person other than the OVD. An OVD does not include an MVPD inside its MVPD footprint or an MVPD to the extent it is offering Online Video Programming as a component of an MVPD subscription to customers whose homes are inside its MVPD footprint.

"Person" means any natural person, corporation, company, partnership, joint venture, firm, association, proprietorship, agency, board, authority, commission, officer, or other business or legal entity, whether private or governmental.

"Production Studio" means Warner Bros. Television, 20th Century Fox Television, Paramount/CBS Television Studios, Sony Pictures Television, Disney-ABC Studios, and their managed or controlled subsidiaries, successors and assigns, and any other Person that is one of the top five producers (other than a C-NBCU Programmer) of Video Programming for distribution through Broadcast Networks or Cable Programmers by U.S. production revenue in the latest declared financial year.

[4] The fact that an agreement includes termination provisions, including termination for convenience, shall not be deemed to reduce the term of the agreement for purposes of this definition. Agreements shall also be deemed to have a term of more than six months if they have no termination, renew automatically unless cancelled for an aggregate term of more than six months, are renewed so they last more than six months in the aggregate, or are successive agreements containing substantially similar conditions and cover substantially similar programming.

"Qualified OVD" means any OVD that meets either or both of (i) the MVPD Price Condition and (ii) the Benchmark Condition.

"Regional Sports Network" and "RSN" mean any non-broadcast video programming service that (i) provides live or same-day distribution within a limited geographic region of sporting events of a sports team that is a member of Major League Baseball, the National Basketball Association, the National Football League, the National Hockey League, NASCAR, NCAA Division I Football, NCAA Division I Basketball and (ii) in any year, carries a minimum of either 100 hours of programming that meets the criteria set forth in (i) above, or 10% of the regular season games of at least one sports team that meets the criteria set forth in (i) above.

"Similarly Situated MVPD" means an MVPD that is comparable to the OVD seeking a license for Online Video Programming.

"Specialized Service" means any service provided over the same last-mile facilities used to deliver Broadband Internet Access Service other than (i) Broadband Internet Access Services, (ii) services regulated either as telecommunications services under Title II of the Communications Act or as MVPD services under Title VI of the Communications Act, or (iii) Comcast's existing VoIP telephony service.

"Video Programming" means programming provided by, or generally considered comparable to programming provided by, a television broadcast station or cable network, regardless of the medium or method used for distribution, and includes but is not limited to: programming prescheduled by the programming provider (also known as scheduled programming or a linear feed); programming offered to viewers on an on-demand, point-to-point basis (also known as video on demand ("VOD"), pay per view ("PPV") or transactional video on demand ("TVOD")); short programming segments (also known as clips); programming that includes multiple video sources (also known as feeds, including camera angles); programming that includes video in different qualities or formats (including high-definition and 3D); and Films for which a year or more has elapsed since their theatrical release.

"Video Programming Vendor" has the meaning given that term under 47 C.F.R. § 76.1300(e).

II. CONDITION CONCERNING ACCESS TO C-NBCU PROGRAMMING

If negotiations fail to produce a mutually acceptable set of price, terms and conditions for a Carriage Agreement with one or more C-NBCU Programmers, an MVPD or Bargaining Agent may choose to submit a dispute to commercial arbitration in accordance with the procedures in Section VII below.

III. CONDITIONS CONCERNING CARRIAGE OF UNAFFILIATED VIDEO PROGRAMMING

1. Comcast shall not discriminate in Video Programming distribution on the basis of affiliation or non-affiliation of a Video Programming Vendor in the selection, price, terms or conditions of carriage (including but not limited to on the basis of channel or search result placement).

2. If Comcast now or in the future carries news and/or business news channels in a neighborhood, defined as placing a significant number or percentage of news and/or business news channels substantially adjacent to one another in a system's channel lineup, Comcast must carry all independent news and business news channels in that neighborhood.

3. Comcast shall add ten new independently owned-and-operated channels to its digital (D1) tier on customary terms and conditions as follows: (i) one channel within 18 months of the Order Date; (ii) two additional channels within two years of the Order Date; (iii) one additional channel within three years of the Order Date; (iv) two additional channels within six years of the Order Date; and (v) four additional channels within eight years of the Order Date. For purposes of this Condition, independent

entities deemed to be eligible for such channels are those networks that are not carried by Comcast and not an Affiliate of Comcast or a top 15 programming network, as measured by annual revenues.

4. For purposes of enforcing the Conditions of this Section III, any Video Programming Vendor may submit a dispute to the Commission in accordance with the Commission's program carriage complaint procedures, 47 C.F.R. § 76.1302.

IV. ONLINE CONDITIONS

A. ONLINE PROGRAM ACCESS

1. **MVPDs**: For any Online Video Programming that any C-NBCU Programmer licenses to any Affiliated or non-Affiliated MVPD for online display, the C-NBCU Programmer shall provide that Online Video Programming at fair market value and on non-discriminatory prices, terms and conditions to any other MVPD for online display.

2. **Qualified OVDs:**

a. MVPD Price Condition:

(i) For any Qualified OVD that satisfies the MVPD Price Condition, C-NBCU Programmers shall provide Online Video Programming sought by the OVD to the extent that the Video Programming sought is materially the same as Video Programming that C-NBCU Programmers offer to any Similarly Situated MVPD.

(ii) The price, terms and conditions shall be the economic equivalent of the price, terms and conditions that a Similarly Situated MVPD would pay for the Online Video Programming. If any obligation is imposed on the Similarly Situated MVPD to make the programming available through a linear channel, the economic equivalent shall include a materially similar obligation.[5] The economic equivalent should take account of (among other things) (w) any difference in advertising revenues caused by OVD distribution compared with MVPD distribution, (x) the impact on fair market value if Comcast or C-NBCU does not have the rights to enable the OVD to provide all programming as a linear stream over the Internet or other IP-based transmission path, (y) any generally applicable, market-based requirements regarding minimum subscriber and penetration requirements, and (z) any other evidence relevant to whether a C-NBCU Programmer will receive substantially equal Video Programming revenues in connection with the provisioning of Video Programming to the OVD as it would earn from the provisioning of the same Video Programming to an MVPD.

(iii) The failure of a Qualified OVD to identify a specific Similarly Situated MVPD does not relieve Comcast or C-NBCU of the requirement to provide Online Video Programming to the Qualified OVD at fair market

[5] The economic equivalent shall not, however, include any provisions from an MVPD agreement that would frustrate the objectives of these Conditions, including but not limited to a requirement that the Video Programming be distributed over an MVPD system.

value based on agreements of MVPDs that are most similarly situated to the Qualified OVD.

b. Benchmark Condition:

(i) For any Qualified OVD that meets the Benchmark Condition,[6] C-NBCU Programmers shall provide Online Video Programming sought by the OVD that constitutes Comparable Programming.[7]

(ii) The price, terms and conditions shall be the economic equivalent of the price, terms and conditions the OVD paid for the Comparable Programming. The economic equivalent should take account of (among other things) any difference in the value of the programming being sought relative to the Comparable Programming. In addition, economic equivalent terms and conditions shall consist of the same basic Economic Model(s) for the Comparable Programming.

(iii) C-NBCU Programmers shall not at any one time be required to be a party to more agreements triggered by Experimental Deals than the greatest number of agreements then effective between a Broadcast Network, Cable Programmer, Production Studio or Film Studio (including multiple Persons if they are Affiliated) and all OVDs.

3. If negotiations fail to produce a mutually acceptable set of price, terms and conditions for Online Video Programming under Sections IV.A.1 or IV.A.2 above, an MVPD or Qualified OVD, as applicable, may choose to submit a dispute to commercial arbitration in accordance with the procedures set forth in Section VII below. A Claimant may bring a single arbitration for related claims under Section IV.A.1 and IV.A.2 and/or demands under different agreements subject to the Benchmark Condition.

4. A C-NBCU Programmer may require, as a condition of any agreement or award under these provisions (other than pursuant to the Benchmark Condition), that the OVD may display the Online Video Programming only when (i) it would constitute no more than 45% of the Qualified OVD's Video Programming (measured by hours available to subscribers), and (ii) at least one Broadcast Network, Cable Programmer, Production Studio or Film Studio has agreed to provide Video Programming to the OVD (including at least one Broadcast Network providing broadcast programming if the C-NBCU Programmer has agreed to license broadcast programming); provided that the OVD shall have at least two years after the agreement or award to meet this condition (which time limit shall be stayed pending any arbitration and/or appeal), at which point it shall be entitled to display the Online Video Programming.

5. For claims to programming made under Section IV, if a reasonable dispute exists or arises regarding whether a C-NBCU Programmer has the right to grant an OVD the right to the Video Programming at issue, the C-NBCU Programmer may require the Qualified OVD to indemnify it and hold it harmless against any breach of contract, tort, copyright violation or other claim arising out of any lack of right of the C-NBCU Programmer to grant the OVD the right to Video Programming.

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[6] As long as the Benchmark Condition is met at the time a request for programming is made under this Order, it shall continue to be satisfied regardless of any breach or termination of the triggering agreement.

[7] A Qualified OVD that has obtained programming under the Benchmark Condition shall become eligible for additional Comparable Programming only to the extent it enters into more than one agreement (i) with different programmers for programming subject to different Economic Models or in different categories of programming (*e.g.*, broadcast, cable or Film) or (ii) with the same programmer for additional programming.

B. RESTRICTIONS REGARDING EXCLUSIVITY/WINDOWING

1. No C-NBCU Programmer shall enter into any agreement or arrangement, or enforce any agreement or arrangement entered into after December 3, 2009, which forbids, limits, or creates economic incentives to limit the distribution of such Video Programming through OVDs; provided that nothing in this Section IV.B.1 prohibits a C-NBCU Programmer from entering into or enforcing agreements or arrangements consistent with reasonable, common industry practice. Evidence relevant to what constitutes reasonable, common industry practice may include (among other things) the contracting practices of a C-NBCU Programmer prior to December 3, 2009 and/or the contracting practices of peer companies.

2. A C-NBCU Programmer may also enter into agreements or arrangements forbidding, limiting or creating economic incentives to limit distribution of Video Programming through OVDs upon Commission approval after following the procedures provided under 47 C.F.R. § 76.1002(c)(5) and demonstrating that the agreement or arrangement serves the public interest under 47 C.F.R. § 76.1002(c)(4), provided that for purposes of such demonstration (i) the term "multichannel video programming distribution market" in 47 C.F.R. § 76.1002(c)(4)(iv) shall include OVDs; and (ii) the term "satellite cable programming" in 47 C.F.R. § 76.1002(c)(4)(iii) shall be replaced with the term Video Programming.[8]

3. No C-NBCU Programmer shall enter into or enforce any agreement or arrangement for carriage on Comcast's MVPD system that forbids, limits or create incentives to limit a broadcast network or cable programmer's provision of its Video Programming to one or more OVDs; provided that nothing in this Section IV.B.3 would prohibit a C-NBCU Programmer from:

a. entering into and enforcing an agreement or arrangement under which a C-NBCU Programmer discourages or prohibits a broadcast network or cable programmer from making Video Programming, for which a C-NBCU programmer has agreed to pay, available to consumers for free over the Internet within the first 30 days after a C-NBCU Programmer first distributes the Video Programming to consumers;

b. entering into and enforcing an agreement or arrangement under which the broadcast network or cable programmer provides Video Programming exclusively to a C-NBCU Programmer, and to no other MVPD or OVD, for a period of time of not greater than 14 days; or

c. entering into and enforcing an agreement or arrangement which requires that a C-NBCU Programmer is treated in material parity with other similarly situated MVPDs with respect to price and non-price terms, except to the extent application of other MVPDs' non-price terms would frustrate the purpose of this Order.

[8] If an arbitration triggered by the Benchmark Condition involves an agreement that would require approval under this Section IV.B.2, and the C-NBCU Programmer has applied for but not received Commission approval (including approval of the Media Bureau on delegated authority) under this Section within 30 days after the demand for arbitration, then the arbitration shall proceed on the basis that the agreement to be arbitrated will not contain provisions that would require approval under this Section.

C. CONTINUED ACCESS TO ONLINE CONTENT AND HULU

1. Comcast and C-NBCU shall continue to provide over nbc.com or an equivalent site, on equivalent terms and conditions (including the lack of any payment requirement), Video Programming of equivalent type, quantity and quality as that provided over nbc.com on the date of this Order so long as at least one Broadcast Network maintains an ad-supported web site displaying at least an equivalent of the nbc.com Video Programming.

2. Except as otherwise provided by Section IV.B, C-NBCU Programmers shall honor any agreement or arrangement entered into before the date of this Order under which they provide rights to Online Video Programming and shall not exercise any right of termination under any such agreement or arrangement other than for material breach by the other party or expiration of the current term of the agreement or arrangement.

3. Provided that the other two content provider partners have renewed their agreements with Hulu on terms that are substantially the same for both partners, C-NBCU shall contemporaneously renew its agreements with Hulu on substantially the same terms and conditions (or enter into agreements on substantially the same terms and conditions as those entered into by the other two content partners), notwithstanding Section IV.B for any agreement materially equivalent to the current agreement between C-NBCU and Hulu. Provided that the other two content provider partners continue to provide Hulu with programming of a type, quantity and quality consistent with their practice during the year period prior to the date of this Order, C-NBCU shall provide its programming on an equivalent basis.

4. Neither Comcast nor C-NBCU shall exercise any right to influence the conduct or operation of Hulu, including those arising from agreements, arrangements or operation of its equity interests (*e.g.*, board seats, voting for directors or other shareholder matters, management and veto rights, etc.) and C-NBCU shall as and from the date of this Order hold its interest in Hulu solely as an economic interest. Within 30 days of the release of this Order, C-NBCU shall submit to the Commission documentation evidencing that its interest in Hulu is purely economic. This provision shall not restrict the rights of a non-Affiliated Person that purchases some or all of C-NBCU's interest in Hulu.

D. STANDALONE BROADBAND INTERNET ACCESS SERVICE

1. Comcast shall continue to provide standalone Broadband Internet Access Service to customers with offerings consisting of speed tiers currently offered in each service area at reasonable market-based prices. At a minimum, Comcast shall offer a service of at least 6 Mbps down at a price no greater than $49.95 for three years (provided that the price can be increased by no more than any increase in the CPI-U for Communications after two years). If Comcast offers additional speeds in conjunction with other bundled service packages, Comcast shall also offer such speeds on a standalone basis at reasonable, market-based prices. In each case, the standalone offering shall be on equivalent terms and conditions (including but not limited to usage caps) to the most comparable Broadband Internet Access Service offered in a bundled offering.

2. Starting no later than 30 days after the date of this Order, Comcast shall visibly offer and actively market standalone retail Broadband Internet Access Service, including but not limited to (i) providing a linkable web page devoted exclusively to describing (*e.g.*, price and speed) and permitting online purchase of all retail Broadband Internet Access Service standalone options; (ii) running at least one major advertising promotion of the standalone retail Broadband Internet Access Service offering annually; and (iii) ensuring that the standalone Broadband Internet Access Service offering appears with prominence equal to that of bundled offerings on any product list or in any window, menu or other similar place on any call center screen.

3. Within 30 days from the date of this Order, annually thereafter and upon any price adjustment of a standalone Broadband Internet Access Service offering, Comcast shall provide to the Commission a report describing (w) its compliance with the condition in Section IV.D.1, including the number of standalone Broadband Internet Access Service lines provisioned; (x) the standalone Broadband Internet Access Service speeds and pricing being offered to customers in its top 30 markets; (y) the Broadband Internet Access Service speeds and pricing being offered as part of each programming or programming and phone package in its top 30 markets as well as the package price; and (z) the prices and speeds at which competitors offer standalone Broadband Internet Access Service (to the extent known by Comcast) in its top 30 markets.

E. BROADBAND INTERNET ACCESS SERVICE

1. Comcast and C-NBCU shall not offer a Specialized Service that is substantially or entirely comprised of Comcast or C-NBCU affiliated content.

2. If Comcast or C-NBCU offers any Specialized Service that makes content from one or more third parties available to (or that otherwise enables the exchange of network traffic between one or more third parties and) Comcast or C-NBCU subscribers, Comcast or C-NBCU shall allow any other comparable third party to be included in a similar Specialized Service on a nondiscriminatory basis.

3. In all DOCSIS 3.0 markets, Comcast shall provide a level of Broadband Internet Access Service that is at least as fast as its current 12 Mbps down speed tier. The 12 Mbps speed tier is subject to modification based on market changes concerning speed availability from other market Broadband Internet Access Service providers. This Condition does not restrict Comcast's ability to impose byte caps or consumption-based billing, subject to the other Conditions in this Order.

F. SET-TOP BOXES

To the extent that a set top box (and/or CPE or software that is functionally equivalent) provided or made available by Comcast or C-NBCU has a capability that enables a customer to access a Specialized Service, the requirements of Sections IV.E.1 & 2 shall apply to that Specialized Service.

G. UNFAIR PRACTICES

1. Neither Comcast nor C-NBCU shall:

   a. engage in unfair methods of competition or unfair or deceptive acts or practices, the purpose or effect of which is to hinder significantly or prevent any MVPD or OVD from providing Video Programming online to subscribers or consumers;

   b. unduly or improperly influence the decision of any vendor in which it has an Attributable Interest to sell, or unduly or improperly influence such vendor's prices, terms and conditions for the sale of, Video Programming to any unaffiliated MVPD or OVD for online distribution to subscribers or consumers;

   c. unduly or improperly influence the decision of any affiliated broadcast station to grant retransmission consent, or unduly or improperly influence such affiliated broadcast station's prices, terms and conditions for the retransmission of, Video Programming to any unaffiliated MPVD or OVD for online distribution to subscribers or consumers; or

   d. retaliate against any Person for (i) exercising (or attempting to exercise) any rights under this Order (regardless of whether those rights pertain to online

issues), (ii) participating in the proceeding resulting in this Order, or (iii) licensing Video Programming to any Person or entity.

2. For the avoidance of doubt, the conditions in Section IV.G do not by themselves create a right for any Person to access a C-NBCU Programmer's Video Programming.

V. NOTICE OF CONDITIONS

No later than 20 Business Days prior to the expiration of Carriage Agreement with an MVPD or a Video Programming Vendor or an agreement for online display of Video Programming with an OVD, Comcast or C-NBCU, as applicable, must provide the MVPD, Video Programming Vendor, or OVD with a copy of the Conditions imposed in this Order. A C-NBCU Programmer must provide a copy of the Conditions imposed in this Order within 10 Business Days of receiving a first time request for carriage.

VI. REPLACEMENT OF PRIOR CONDITIONS

These Conditions shall supersede the program access conditions and commercial arbitration remedy imposed on Comcast in Applications for Consent to the Assignment and/or Transfer of Control of Licenses, *Adelphia Communications Corporation, Assignors to Time Warner Cable, Inc., Assignees, et al.,* Memorandum Opinion and Order, 21 FCC Rcd 8203, 8336–39, Appendix B (2006) ("*Adelphia Order*"); provided that nothing in this Order supersedes or otherwise affects arbitrations involving Comcast pursuant to the conditions adopted in the *Adelphia Order* in which a formal demand or notice for arbitration has been provided up to and including the date of release of this Order.

VII. COMMERCIAL ARBITRATION REMEDY[9]

A. INITIATION OF ARBITRATION

1. No more than five Business Days following the expiration of a Carriage Agreement or an agreement for online display of Video Programming, or no more than 90 days after a first time request for carriage or online display of Video Programming, a Claimant may notify the C-NBCU Programmer or Programmers that provide the Video Programming at issue that it intends to request arbitration to determine the terms and conditions of a new agreement. The notification must describe with specificity the Video Programming covered by the Claimant's request for arbitration.

2. An MVPD Claimant may demand a standalone offer for (i) broadcast programming, (ii) RSN programming, (iii) the bundle of all cable programming, and/or (iv) any bundle of Video Programming (including any standalone bundle of Films) that a C-NBCU Programmer has made available to a similar MVPD.

3. A Claimant may not bring an arbitration over Video Programming that is substantially equivalent to Video Programming included in a currently effective Carriage Agreement.

4. Promptly upon issuing such a request, the Claimant shall notify the Commission and provide a confidential summary of the dispute. Such notice and confidential summary shall also be served on each C-NBCU Programmer involved in the dispute.

[9] These provisions shall apply generally to all arbitrations under Section II and Section IV.A unless otherwise stated. A dispute resolution process validly commenced under procedures established by another governmental entity may be transferred to an arbitrator under these Conditions, and shall be deemed validly commenced for purposes of these Conditions.

5. Upon receiving timely notice of the Claimant's intent to arbitrate, each C-NBCU Programmer must immediately allow and each Claimant must immediately continue carriage, under the terms and conditions of the expired agreement, if any, as long as the Claimant continues to meet the obligations set forth in this condition. In addition, no C-NBCU Programmer shall terminate or interfere with the Claimant's customers' online access to otherwise available programming in connection with a program carriage dispute, regardless of whether the programming is carried pursuant to an agreement. Carriage of the disputed programming during the period of arbitration is not required in the case of first time requests for carriage or online display; provided that the Claimant shall have the option of carrying the disputed programming on the terms of the C-NBCU Programmer's final offer, subject to a true up pursuant to Section VII.B.12 and the requirements of Section IV.A.4.

6. "Cooling Off Period." Following the Claimant's notice of intent to submit the dispute to arbitration, but prior to filing a demand for arbitration with AAA, the Claimant and each C-NBCU Programmer shall enter a "cooling-off" period during which negotiations shall continue.

7. Formal Filing with the AAA. The Claimant's formal demand for arbitration, which shall include the Claimant's "final offer," shall be filed with the AAA no earlier than the 10th Business Day after the filing of the Complainant's intent to arbitrate and no later than the end of the 15th Business Day following such filing. If the Claimant makes a timely demand, each C-NBCU Programmer must participate in the arbitration proceeding.

8. Promptly upon demanding arbitration, the Claimant shall notify the Commission and provide a confidential copy of its demand.

9. The AAA shall notify each C-NBCU Programmer and the Claimant upon receiving the Claimant's formal filing.

10. The C-NBCU Programmer or Programmers shall file a single final offer with the AAA within two Business Days of being notified by the AAA that a formal demand for arbitration has been filed by the Claimant. The C-NBCU Programmer or Programmers shall provide a confidential copy of the final offer to the Commission.

11. The Claimant's final offer may not be disclosed to the C-NBCU Programmer or Programmers until the AAA has received the final offer from the C-NBCU Programmer or Programmers. This shall include any final offer made prior to mediation, if the final offer was subsequently revised pursuant to Section VII.A.15.

12. Promptly upon receiving the C-NBCU Programmer or Programmers' final offer, the AAA shall notify all parties to the arbitration that both final offers have been received. At this time, the Claimant and the C-NBCU Programmer or Programmers shall each provide a copy of their final offer to the other party (either directly or through the AAA).

13. The final offers shall be in the form of a contract for carriage of the Video Programming identified in the Claimant's notice of intent to arbitrate for a period of three years. A final offer may not include any provision to carry any other Video Programming.

14. At any time following the exchange of final offers and prior to the conclusion of the arbitration, either party may accept the other party's final offer, at which point the offer shall become a binding contract between the parties.

15. Following the exchange of the final offers and prior to the initiation of an arbitration hearing the parties may, but are not required to, enter mediation to resolve the dispute or narrow the issues in contention. If both parties agree, they may submit revised final offers following such mediation.

B. RULES OF ARBITRATION

1. The arbitration shall be decided by a single arbitrator under the expedited procedures of the AAA Rules, excluding the rules relating to large, complex cases, but including the modifications to the AAA Rules set forth in Section VIII, below.

2. The arbitrator shall issue a decision within 90 days from the date that the arbitrator is appointed. The arbitrator shall consider at the earliest practicable opportunity, however, any motion that is dispositive of the arbitration in whole or that is dispositive of a significant issue in the arbitration and will speed resolution of the arbitration as a whole.

3. The parties may agree to modify any of the time limits set forth above and any of the procedural rules of the arbitration; absent agreement, however, the rules specified herein apply. The parties may not modify the requirement that they engage in final-offer arbitration.

4. In the case of an arbitration under Section II of the Conditions, the arbitrator is directed to choose the final offer of the party which most closely approximates the fair market value of the programming carriage rights at issue.

5. To determine fair market value, the arbitrator may consider any relevant evidence and may require the parties to submit such evidence to the extent it is in their possession or control. The arbitrator may not compel production of evidence by third parties.

6. In the case of an arbitration under Section II of these Conditions, there shall be a presumption that the following types of agreements, unredacted and including all exhibits and related agreements, are relevant evidence of fair market value:

a. for arbitration related to retransmission consent, current or previous contracts between MVPDs and broadcast stations;

b. for arbitration related to RSNs, current or previous contracts between MVPDs and RSNs;

c. for arbitration related to national cable networks, current or previous contracts between MVPDs and national networks; and

d. for arbitration related to non-sports, non-broadcast regional cable networks, current or previous contracts between MVPDs and non-sports, non-broadcast regional cable networks.

The fact that an agreement relates to more than one type of programming shall not be a basis for limiting its production or allowing redaction of its contents. There shall also be a presumption that for each agreement used as evidence of fair market value, the number of subscribers of the MVPD that is party to an agreement, the ratings for the networks covered by the contract, and similar information relating to the value of the contract terms shall be relevant evidence of fair market value. Any party seeking additional evidence from the other party must demonstrate that the likely probative value of such evidence clearly outweighs the burden of searching for and producing it.

7. Each party shall also provide to the other all evidence that it intends to rely on in the arbitration, including any evidence relied on by any expert in the production of an expert report or preparation of testimony.

8. If a C-NBCU Programmer contends that evidence of its costs and related financial information are relevant to the determination of fair market value for the programming at issue, it shall announce that contention in writing not later than ten Business Days after submitting its final offer. The arbitrator shall determine whether such evidence is likely to be unique to the C-NBCU Programmer and

of probative value to his or her determination. If so, discovery of cost and financial information should be commensurate with the limited nature of the evidence and limited solely to the C-NBCU Programmer at issue (unless a showing can be made that costs are spread across affiliates).

9. The arbitrator may not consider offers prior to the arbitration made by the Claimant and the C-NBCU Programmer or Programmers for the programming at issue in determining the fair market value. This shall include any final offer made prior to mediation, if the final offer was subsequently revised pursuant to Section VII.A.15.

10. If the arbitrator finds that one party's conduct, during the course of the arbitration, has been unreasonable, the arbitrator may assess all or a portion of the other party's costs and expenses (including reasonable attorney fees) against the offending party.

11. Following the decision of the arbitrator, the parties shall be bound by the final offer chosen by the arbitrator, regardless of the pendency of any appeal unless the appeal nullifies or modifies the award.

12. To the extent practicable, the terms of the final offer chosen by the arbitrator, including payment terms, if any, shall also become retroactive to the expiration date of the previous Carriage Agreement or agreement for online display, if any.

a. If carriage of the relevant programming has continued uninterrupted during the arbitration process, and if the arbitrator's award requires a smaller amount to be paid than was required under the terms of the expired contract, each C-NBCU Programmer shall credit the Claimant with an amount representing the difference between the amount actually paid under the terms of the expired contract since its expiration and the amount that is required to be paid under the arbitrator's award.

b. If carriage of the relevant programming has continued uninterrupted during the arbitration process, and if the arbitrator's award requires a higher amount to be paid than was required under the terms of the expired contract, the Claimant shall make an additional payment to each C-NBCU Programmer in an amount representing the difference between the amount that is required to be paid under the arbitrator's award and the amount actually paid under the terms of the expired contract since its expiration.

13. Judgment upon an award entered by the arbitrator may be entered by any court having competent jurisdiction over the matter, unless one party indicates that it wishes to seek review of the final award with the Commission and does so in a timely manner.

14. Upon the conclusion of an arbitration demanded under these procedures, whether by settlement or award, the Claimant shall notify the Commission of the conclusion of the proceedings and, if applicable, provide the Commission with (i) a confidential, unredacted copy of the arbitrator's award and (ii) a copy of the redacted version of the arbitrator's award, as produced by the arbitrator pursuant to Section VIII.7, which the Commission will make available to any party who so requests.

C. PROVISIONS APPLICABLE TO ARBITRATIONS UNDER SECTION IV (ONLINE)

1. In the case of an arbitration under Section IV of these Conditions, the arbitration shall take place in two phases if there is a reasonable dispute regarding one or more of the following: (i) whether an OVD is a Qualified OVD; (ii) what Comparable Programming a Qualified OVD is entitled to (for claims under the Benchmark Condition only); and (iii) whether any of the defenses in Section VII.C.3 below would defeat a claim (provided that, with respect to Section VII.C.3, the first phase shall concern defenses based on 47 C.F.R. § 76.1002(b)(1) only). In phase 1, the arbitrator shall determine, as

applicable, the disputes raised in sub-paragraphs (i) through (iii). In phase 2, the arbitrator shall choose the final offer of the party which most closely approximates the fair market value of the programming carriage rights at issue, as defined in Section IV.A.2, above.

2. In the case of an arbitration under the Benchmark Condition, if there is a dispute about what Comparable Programming a Qualified OVD is entitled to, the parties shall submit their final offers for the scope of Comparable Programming at the commencement of the arbitration, as provided under Section IV.A. The arbitrator shall decide which of the two offers for the scope of Comparable Programming most closely approximates the appropriate Comparable Programming. At the conclusion of phase 1, the parties shall submit their final offers for agreements based on the Comparable Programming chosen by the arbitrator.

3. In the case of an arbitration under Section IV of these Conditions, it shall be a defense for Comcast or C-NBCU to demonstrate by a preponderance of the evidence that any of the following reasonably justifies denying the Online Video Programming to a particular Qualified OVD: (i) any of the factors listed under 47 C.F.R § 76.1002(b) as of the date of this Order; or (ii) that providing the Online Video Programming to the particular Qualified OVD would constitute a breach of a contract to which Comcast or NBCU is a party (provided that any provision prohibited under Section IV.B shall not be a defense). For claims under the Benchmark Condition, there shall be a presumption against any defense based on the provisions of part (i) of this paragraph.

4. The arbitrator shall determine allowable discovery and permissible evidence.

D. PROVISIONS APPLICABLE TO SMALL MVPDS

1. An MVPD with 1.5 million or fewer subscribers may appoint an independent bargaining agent to bargain collectively on its behalf ("Bargaining Agent") in negotiating with a C-NBCU Programmer for carriage of Video Programming, and the C-NBCU Programmer shall not refuse to negotiate with such an entity. An MVPD that uses a Bargaining Agent may, notwithstanding any contractual term to the contrary, disclose to such Bargaining Agent the date upon which its then current carriage contract at issue expires.

2. If a Bargaining Agent chooses to submit a dispute to commercial arbitration, it shall state in its notification of intent to arbitrate the MVPDs that it represents for purposes of the arbitration. If the MVPDs that have appointed the Bargaining Agent have contracts with different expiration dates for the Video Programming at issue, or if some MVPDs have expiring contracts and others are making a first time request for carriage, the Bargaining Agent must notify the C-NBCU Programmer or Programmers that provide the Video Programming that it intends to request arbitration no later than five business days after the expiration of the first contract. If all the MVPDs that have appointed the Bargaining Agent are making a first time request for carriage, the Bargaining Agent may submit its notice of intent to arbitrate at any time following 90 days after the Bargaining Agent's first time request for carriage on behalf of any of the MVPDs.

3. Each C-NBCU Programmer must allow continued carriage under the terms and conditions of any expired agreement for any MVPD that appointed the Bargaining Agent and has an expired agreement or an agreement that expires during the course of arbitration. Carriage of the disputed programming during the period of arbitration is not required in the case of any MVPD making a first time request for carriage; provided that the Claimant shall have the option of carrying the disputed programming on the terms of the C-NBCU Programmer's final offer, subject to a true up pursuant to Section VII.B.12 and the requirements of Section IV.A.4.

4. The final offers of the parties shall be in the form of a contract for carriage of the Video Programming (including but not limited to terms concerning both price and carriage) identified in the

Bargaining Agent's notice of intent to arbitrate, for a period of three years, by all MVPDs that have appointed the Bargaining Agent.

5. Following the decision of the arbitrator, all MVPDs that have appointed the Bargaining Agent shall be bound by the final offer chosen by the arbitrator. For each MVPD that has an expired carriage agreement at the time of the award, the terms of the final offer shall become retroactive to the expiration date of that agreement, to the extent practicable. For each MVPD that has a contract that has yet to expire at the time of the award, the final offer shall become effective upon expiration of the existing contract if and to the extent that the term of the arbitrated contract remains in effect (*e.g.*, if the MVPD's contract expired one year after the arbitration award, the effective term of the arbitrated contract would be two years).

6. To determine fair market value, the arbitrator may require the Bargaining Agent as well as all MVPDs that have appointed the Bargaining Agent to submit relevant evidence to the extent it is in their possession. The Bargaining Agent may only be required, however, to produce information in its possession that involves at least one of the MVPDs it has been appointed to represent.

7. If an MVPD with 600,000 or fewer subscribers ("Small MVPD") (including a Bargaining Agent to the extent it is representing Small MVPDs) is the prevailing party in an arbitration, it shall be entitled to recover its legal fees and costs of arbitration. If such an MVPD is not the prevailing party, it shall not be required to reimburse Comcast's or C-NBCU's corresponding fees and costs.

E. REVIEW OF FINAL AWARD BY THE COMMISSION

1. A party aggrieved by the arbitrator's final award may file with the Commission a petition seeking *de novo* review of the award. The petition must be filed within 30 days of the date the award is published. The petition, together with both the redacted and unredacted versions of the arbitrator's award, as produced by the arbitrator pursuant to Section VIII.7, the record before the arbitrator, and transcripts of any arbitration hearings shall be filed with the Secretary's office and shall be concurrently served on the Chief, Media Bureau. An opposition to the petition may be filed within 15 days of the filing of the petition, and a reply to the opposition may be filed within 10 days of the filing of the opposition. The Media Bureau shall issue its findings and conclusions not more than 60 days after receipt of the petition, which period may be extended by the Media Bureau by one period of an additional 60 days. A party may file with the Commission an Application for Review of the Media Bureau's decision.[10] The Claimant shall carry the relevant programming pending the FCC decision, subject to the terms and conditions of the arbitrator's award.

2. In reviewing the award, the Media Bureau or Commission, as appropriate, will examine the same evidence that was presented to the Arbitrator and will choose the final offer of the party that most closely approximates the fair market value of the programming carriage rights at issue.

3. The Media Bureau or Commission, as appropriate, may award the winning party costs and expenses (including reasonable attorney fees) to be paid by the losing party, if the Media Bureau or Commission, as appropriate, considers the appeal or conduct by the losing party to have been unreasonable. Such an award of costs and expenses may cover both the appeal and the costs and expenses (including reasonable attorney fees) of the arbitration.

[10] To the extent a party files a Petition for Reconsideration of the Bureau's decision, if the Media Bureau does not act on the Petition for Reconsideration within 60 days, the Petition for Reconsideration will be deemed denied.

VIII. MODIFICATIONS TO AAA RULES FOR ARBITRATION

1. For purposes of these Conditions, the AAA Rules are modified in several respects as they apply to the arbitration remedy set forth above.

2. *Initiation of Arbitration*. Arbitration shall be initiated as provided in Rule R-4 except that, under Rule R-4(a)(ii), the party initiating arbitration shall not be required to submit copies of the arbitration provisions of the contract, but shall instead refer to this Order in the demand for arbitration. Such reference shall be sufficient for the AAA to take jurisdiction.

3. *Appointment of the Arbitrator*. Appointment of an arbitrator shall be in accordance with Rule E-4 of the Rules. Arbitrators included on the list referred to in Rule E-4 (a) of the Rules shall be selected from a panel jointly developed by the AAA and the Commission and shall be based on the following criteria:

a. The arbitrator shall be a lawyer admitted to the bar of a state of the United States or the District of Columbia;

b. The arbitrator shall have been practicing law for at least seven years;

c. The arbitrator shall have prior experience in mediating or arbitrating disputes concerning media programming contracts; and

d. The arbitrator shall have negotiated or have knowledge of the terms of retransmission contracts.

4. *Exchange of Information*. At the request of any party, or at the discretion of the arbitrator, the arbitrator may direct the production of current and previous contracts between either of the parties and MVPDs or OVDs, broadcast stations and programming networks that is considered relevant in determining the value of the programming to the parties. Parties may request that access to information of a commercially sensitive nature be restricted to the arbitrator and outside counsel and experts of the opposing party pursuant to a Protective Order, the model for which is attached as Appendix E. If a programming contract contains terms that purport to restrict a party from disclosing the entire contract in an unredacted form absent an order from the Commission or a court, an order by the arbitrator directing the parties to produce the contract shall have the same effect as if it were an order adopted and released by the Commission requiring production of the contract.

5. *Administrative Fees and Expenses*. If the arbitrator finds that one party's conduct, during the course of the arbitration, has been unreasonable, the arbitrator may assess all or a portion of the other parties costs and expenses (including reasonable attorneys' fees) against the offending party.

6. *Locale*. In the absence of agreement between the parties, the arbitration shall be held in the city that contains the headquarters of the Claimant.

7. *Form of Award*. The arbitrator shall render a written award containing the arbitrator's findings of fact and reasons supporting the award. If the award contains confidential information, the arbitrator shall compile two versions of the award; one containing the confidential information and one with such information redacted. The version of the award containing the confidential information shall only be disclosed to the Commission or persons bound by the Protective Order issued in connection with the arbitration. The parties shall include such confidential version in the record of any review of the arbitrator's decision by the Commission.

IX. BROADCAST CONDITIONS

1. C-NBCU shall comply with the terms of Sections 2, 3 and 7 of the June 3, 2010 Agreement between Comcast Corporation, NBC Universal, Inc. and the NBC Television Affiliates (the "NBC Affiliates Agreement"), and with all of the terms of the June 21, 2010 Agreement between Comcast Corporation and the ABC Television Affiliates Association, the CBS Television Network Affiliates Association and the FBC Television Affiliates Association (the "ABC, CBS and Fox Affiliates Agreement"), both of which are provided in Appendix F of this Order, with the following clarification and revisions:

a. Section 3 of the NBC Affiliates Agreement and Section 3 of the ABC, CBS and Fox Affiliates Agreement shall each expire on the date on which NBCU and Comcast are no longer commonly owned and/or controlled.

b. The second sentence of Section 3 of the ABC, CBS and Fox Affiliates Agreement shall provide: "Comcast agrees that NBCU shall remain solely responsible for negotiating retransmission consent of NBCU Stations with non-Comcast MVPDs (*i.e.*, multi-channel video programming distributors), and Comcast and the Comcast Cable Systems shall remain solely responsible for negotiating retransmission consent with non-NBCU Stations."

X. DIVERSITY CONDITIONS

1. In order to expand the availability of over-the-air programming to the Spanish language speaking community utilizing a portion of the digital broadcast spectrum of Telemundo's owned-and-operated broadcast television stations ("O&Os") (as well as offering such programming to Telemundo affiliates), within 12 months of the Closing of the Transaction, C-NBCU shall launch a new multicast channel on its Telemundo O&Os utilizing library programming that has had limited exposure. Telemundo shall make this programming available to all Telemundo-affiliated broadcast stations on reasonable commercial terms.

2. C-NBCU shall use its On Demand and On Demand Online platforms to feature Telemundo programming.

3. C-NBCU shall continue expanding the availability of mun2 on the Comcast Cable, On Demand, and On Demand Online platforms. Specifically, C-NBCU shall:

a. within 12 months of the Closing of the Transaction, increase the number of Telemundo and mun2 VOD programming choices available on its Comcast central VOD storage facilities from approximately 35 to 100 choices. By that time, the majority of Comcast's cable systems shall have the ability to connect to those facilities and provide access to this additional VOD content. In addition, Comcast shall make the programming available online to its subscribers to the extent that it has the legal rights to do so.

b. within three years of the Closing of the Transaction, add another 200 VOD programming choices from Telemundo and mun2 on its Comcast central VOD storage facilities, for a total of 300 additional programming choices. In addition, Comcast shall make the programming available online to its subscribers to the extent that it has the legal rights to do so.

4. In 2011, working with an independent producer, C-NBCU shall produce a new weekly business news program, which it shall assist to make available through syndication.

5. For five years after the Order Date, C-NBCU shall file quarterly reports in a uniform format with the Commission containing the following information for the previous three months: the total number of hours of independent programming aired by each broadcast O&O and each owned or controlled programming network, the title of each program, the date(s) and time(s) the program was aired, the length of the program, a short description of the program, and for programs aired by the broadcast O&Os, whether the program aired on the O&O's primary channel or a multicast channel. In addition to filing these reports with the Commission, to enable the public to view the information, C-NBCU shall also post the reports on its website and that of each of its O&Os and programming networks. For purposes of this Condition, independent programming is defined as programming that is: (i) not carried by Comcast as of the date of adoption of this Order by the Commission; and (ii) produced by an entity unaffiliated with Comcast and/or NBCU.

XI. LOCALISM CONDITIONS

1. C-NBCU shall preserve and enrich the output of local news, local public affairs, and other public interest programming on its O&O stations. Through the use of Comcast's On Demand and On Demand Online platforms, time slots on cable channels, and use of certain windows on the O&Os' schedules, it shall expand the availability of all types of local and public interest programming. In furtherance of these objectives, C-NBCU shall:

a. during the five years after the Closing of the Transaction, not reduce the current level of news and information programming at all NBC and Telemundo O&Os.

b. during the three years after the Closing of the Transaction, expand such newscasts as provided herein.

c. during the three years after the Closing of the Transaction, expand local content on Telemundo O&O newscasts, increasing its investment in station newscasts that are produced locally.

2. C-NBCU shall, within 12 months of the Closing of the Transaction and for a period of five years after the launch of such service by its O&O stations:

a. locally produce by the NBC O&Os, collectively, an additional 1,000 hours per year of original, local news and information programming to air on multiple platforms, including the primary or a multicast channel of each such O&O. If the additional news and information programming is carried on a multicast channel of an NBC O&O, that multicast channel shall achieve actual distribution to at least 50 percent of the television households within the station's DMA.

b. locally produce by at least six Telemundo O&Os, collectively, an additional 1,000 hours per year of original, local news and information programming, all of which shall air on the primary channel of each such O&O.

3. For purposes of this Condition, news and information programming shall include local and regional content, including general interest news and public affairs programming, weather, traffic and other informational programming.

4. C-NBCU shall file with the Commission, commencing on the later of three months after the Closing (or from the launch of such service over the station) and ending upon the expiration of this Condition, on a quarterly basis for each O&O, the following information in a uniform format regarding the news and information programming aired on the station during the preceding three months: the title of the program, the date(s) and time(s) the program was aired, the length of the program, whether the program aired on the O&O's primary channel or a multicast channel, and a short description of the

program. Each year, the fourth quarter report must contain a certification attesting to whether or not the station aired the annual requirement for the stations. In addition to filing this information with the Commission, to enable the public to view the information, C-NBCU must also post the same information on each O&O's website.

5. Within 12 months of the Closing of the Transaction, at least half of the NBC O&Os shall have in place cooperative arrangements with locally focused non-profit news organizations that provide reporting on issues of particular concern to each such station's market and/or region ("Online News Partners").

a. The selection of appropriate Online News Partners shall be made by C-NBCU, in its discretion, taking into account such factors as the continuing availability of a viable Online News Partner in each such NBC O&O market; adherence by the Online News Partner to standards of journalism compatible with those of C-NBCU, including accuracy, fairness and independence; and the overall level of professionalism exhibited by the Online News Partner.

b. These cooperative arrangements shall be similar in approach and level of involvement and support to the arrangement, in place as of the date of adoption of this Order, between NBC O&O station KNSD(TV), San Diego, California, and the website Voice of San Diego, including, as appropriate: story development; sharing of news footage and other content resources; financial support; in-kind contributions; shared use of technical facilities and personnel; on-air opportunities; promotional assistance; and cross-linking/embedding of websites.

c. This Condition shall not obligate C-NBCU or any of its NBC O&O stations to broadcast, publish on any C-NBCU-controlled website or otherwise exhibit or endorse any material produced by an Online News Partner, and the decision to broadcast, publish or exhibit any such material shall remain at the sole editorial discretion of C-NBCU and its NBC O&O stations.

d. C-NBCU shall be obligated to maintain a minimum of five such arrangements to the extent that such local non-profit news organizations continue to exist in five NBC O&O markets, as described in the preceding paragraph. The minimum of five such cooperative arrangements described in this Condition shall remain in force for at least three years following the date on which C-NBCU has five such arrangements in place.

e. In the event that C-NBCU terminates any such arrangement, consistent with its obligations under this Condition, it shall use its best efforts to identify and establish a cooperative arrangement with another Online News Partner so that it shall have ongoing relationships with Online News Partners in at least five of its O&O stations' markets.

f. Commencing six months after the Closing of the Transaction and every six months thereafter, until the expiration of this Condition, C-NBCU shall file with the Commission a written report detailing the efforts that it has made pursuant to this Condition during the previous six months, including the following information: identification of the Online News Partner and NBC O&O, a description of their arrangement, including the support provided by C-NBCU, and information about the news and other programming produced by the arrangement, including the overall quantification by market of local content

segments or items generated, as well as their nature (including but not limited to videos, articles, blog posts and photos) and whether such segments or items were exhibited on the station's primary channel, multicast channel(s), website and/or other platforms. To enable the public to view the information, C-NBCU must post the relevant reports on each participating O&O's website.

6. Comcast currently provides approximately 15,000 VOD programming choices free or at no additional charge over the course of a month. C-NBCU shall continue to provide at least that number of VOD choices free or at no additional charge to consumers. In addition, within three years of the Closing of the Transaction, it shall make available over the course of a month an additional 5,000 VOD choices via its central VOD storage facilities for free or at no additional charge to consumers.

7. For the three years after the Closing of the Transaction, C-NBCU shall continue to make available at no additional charge broadcast content of the kind previously made available at a per-episode charge on Comcast's On Demand service and currently made available at no additional charge to the consumer.

XII. JOURNALISTIC INDEPENDENCE CONDITION

C-NBCU shall continue NBCU's policy of journalistic independence with respect to the news programming organizations of all NBCU networks and stations, and shall extend these policies to the potential influence of each of C-NBCU's owners. To ensure such independence, C-NBCU shall continue in effect the position and authority of the NBC News ombudsman to address any issues that may arise.

XIII. CHILDREN'S PROGRAMMING CONDITIONS

1. Comcast shall use its On Demand and On Demand Online platforms and a portion of the NBCU O&Os' digital broadcast spectrum to provide children's programming. C-NBCU intends to develop additional opportunities to feature children's content on all available platforms. In this regard, C-NBCU shall:

a. within 12 months of the Closing of the Transaction, add an additional 500 VOD programming choices appealing to children and families to its central VOD storage facilities, and make the same programming available online to its authenticated subscribers to the extent it has the rights to do so.

b. within three years of the Closing of the Transaction, add another 1,000 VOD choices of such programming to its central VOD storage facilities, and make the same programming available online to its authenticated subscribers to the extent it has the rights to do so.

c. within nine months from the Closing of the Transaction, and for three years thereafter, provide one additional hour per week of children's educational and informational ("core") programming, as defined by and aired in the manner called for by 47 C.F.R. § 73.671, over the primary channels of all Telemundo O&Os, and over either the primary or the multicast channels of all NBC O&Os. If this additional children's programming is carried on a multicast channel of an NBC O&O, that multicast channel shall achieve actual distribution to at least 50 percent of the television households within the station's DMA. This hour per week shall be in addition to the current three hours aired weekly by each such station pursuant to the Commission's core license renewal application processing guidelines.

2. C-NBCU shall provide clear and understandable on-screen TV ratings information for all original entertainment programming across all of its networks (broadcast and cable), and apply the cable industry's best-practice standards for providing on-screen ratings information in terms of size, frequency, and duration. Specifically, C-NBCU shall:

a. within 90 days after the Closing of the Transaction, triple the time that program ratings information remains on the screen (from five to 15 seconds) after each commercial break. Such information shall also be presented in a larger format, to make it more visible to viewers.

b. provide improved parental controls for C-NBCU program guides and set-top box applications, including navigation and blocking upgrades to legacy set-top boxes, by the end of 2011.

c. provide a parental dashboard, which shall place all parental controls in one place, and white listing capabilities on tru2way boxes, by the end of 2013.

d. provide, for IP-based set-top boxes, (i) the same capabilities as the tru2way boxes and additional restrictions on interactive applications within 12 months of the launch of IP-based set-top boxes; and (ii) additional blocking capabilities, within 24 months of the launch of IP-based set-top boxes.

e. within nine months of the Closing of the Transaction, include program ratings information in its produced or licensed programming that NBC networks provides to nbc.com, to other NBCU websites, and to Hulu.com.

3. In an effort to constantly improve the tools and information available for parents, C-NBCU shall expand its partnership with organizations offering enhanced information to help guide family viewing decisions including, but not limited to, Common Sense Media ("CSM"). Comcast shall work to creatively incorporate the information from such organizations in its emerging On Demand and On Demand Online platforms and other advanced platforms, and shall look for more opportunities to work with such organizations on all C-NBCU platforms.

4. For five years from the Closing of the Transaction, in its capacity as a programmer and insofar as it can control advertising accepted, C-NBCU shall not air interactive advertising in: (i) broadcast programming and (ii) the feeds delivered to MVPD linear channels, in programs originally produced and transmitted primarily for an audience of children 12 years old and younger. In its capacity as an MVPD and insofar as it exerts control pursuant to affiliation agreements, Comcast shall not insert interactive advertising into networks comprised of programming originally produced and transmitted primarily for an audience of children 12 years old or younger.

5. For purposes of this Condition, interactive advertising is any marketing for commercial purposes on broadcast or cable television that requires or requests consumer interaction. Interactive advertising includes, but is not limited to:

a. interactive overlay pop-up advertising, which can consist of:

(i) requests for further information to be sent to a consumer;

(ii) telescoping, also known as long form advertising, where a consumer can click on a pop-up and view more expanded advertising information that would potentially lead to a commercial transaction, but shall not include enabling a consumer to telescope to particular programs; and

(iii) voting or polling requests that promote a product or service, and/or gain information about consumer commercial preferences;

b. T-Commerce, which enables a consumer to purchase advertised products using a remote control; and

c. branded interactive gaming, which promotes a product via interactive gaming.

6. C-NBCU shall provide public service announcements ("PSAs") with a value of $15 million each year on digital literacy, parental controls, FDA nutritional guidelines and childhood obesity. The PSAs on digital literacy, parental controls and FDA nutritional guidelines shall run on networks or programming that have a higher concentration than the median cable network (viewers-per-viewing-household) of adults 25-54 with children under 18 in the household. For the PSAs on childhood obesity, C-NBCU shall air one PSA during each hour of NBC's "core" educational and informational programming, as defined by 47 C.F.R. § 73.671, on the broadcast stations' primary channels, and an average of two PSAs per day shall run on PBS KIDS Sprout. This Condition shall remain in place for five years.

XIV. PEG CONDITIONS

1. Comcast shall not migrate PEG channels to digital delivery on any Comcast cable system until the system has converted to all-digital distribution (*i.e.*, until all analog channels have been eliminated), or until the governmental entity that is responsible for the system's PEG operations pursuant to the law of the state in question otherwise expressly agrees, whichever comes first. In any event, Comcast shall provide advance written notice to the system's franchising authority and to its local community of its intent to migrate the PEG channels of the system in question.

2. Comcast shall carry all PEG channels on its digital starter tier (D0), or on an equivalent tier that reaches at least 85 percent of the subscribers of the Comcast system.

3. C-NBCU shall not implement a change in the method of delivery of PEG channels that results in a material degradation of signal quality or impairment of viewer reception of PEG channels, provided that this Condition shall not prohibit Comcast from implementing new technologies also utilized for commercial channels carried on its cable systems (including, but not limited to, digitization and switched digital video). Comcast shall continue to meet FCC signal quality standards when offering PEG channels on its cable systems and shall continue to comply with closed captioning pass-through requirements.

4. To enhance localism and strengthen public access, educational and governmental programming, Comcast shall develop a platform to host PEG content On Demand and On Demand Online within three years of the Closing of the Transaction.

a. To develop the new platform, within three years of the Closing of the Transaction, Comcast shall select five locations in Comcast's service area to serve as trial sites. Sites shall be chosen to ensure geographic, economic and ethnic diversity, with a mix of rural and urban communities. They shall not include the community of any system that currently has a PEG VOD or online presence.

b. Comcast shall consult with leaders in the trial communities to determine what programming (public access, educational and/or governmental) would most benefit residents by being placed on VOD and online. It shall not exercise editorial control in determining which PEG programming shall be available on either platform.

c. Comcast shall meet the following benchmarks in its development of these platforms:

(i) within 30 days of the Closing of the Transaction, it shall announce the final locations of the five pilot communities.

(ii) within nine months of the Closing of the Transaction, it shall initiate On Demand placement of available PEG programming in each PEG pilot community. Additional programming shall continue to be provided throughout the remaining trial period.

(iii) within one year of the Closing of the Transaction, it shall initiate On Demand Online placement of available PEG programming in each PEG pilot community through existing or newly created online platforms. Additional programming shall continue to be provided throughout the remaining trial period.

(iv) within 18 months of the Closing of the Transaction, it shall initiate marketing support of the On Demand and On Demand Online platforms in each PEG pilot community.

(v) within two years of the Closing of the Transaction, it shall complete surveys of the user experience for both the On Demand and On Demand Online platforms in each PEG pilot community, and shall begin to implement recommended changes.

(vi) within three years of the Closing of the Transaction, it shall complete the pilot phases and evaluate results of the pilots.

(vii) starting six months after the Closing of the Transaction, it shall submit semi-annual reports to the Commission, on the progress of its online and VOD platform development, including the details of its activities in meeting each of the above-noted benchmarks. In addition to filing this information with the Commission, to enable the public to view the information, it must also post the same information on its website.

d. This Condition is designed to enhance existing PEG channel carriage and shall not affect Comcast's existing franchise requirements for traditional linear PEG channel carriage.

XV. CONDITION REGARDING CARRIAGE OF PROGRAMMING OF NON-COMMERCIAL EDUCATIONAL TELEVISION STATIONS THAT HAVE RELINQUISHED THEIR SPECTRUM

1. For Qualified Noncommercial Educational ("NCE") Stations and Qualified Local Noncommercial Educational ("Local NCE") Stations, as those terms are defined in 47 C.F.R. §§ 76.55(a) and 76.55(b), respectively, that have must-carry rights as of December 31, 2010 and relinquish their broadcast spectrum as part of the Commission's efforts to allocate more spectrum to mobile broadband pursuant to Recommendation 5.8.5 of the National Broadband Plan (collectively, "Stations"), Comcast shall carry the applicable programming stream(s) of such Stations as follows:

a. For Stations that are carried on Comcast cable systems as of December 31, 2010 pursuant to the signal carriage obligations for such Stations, as set forth in 47 C.F.R. § 76.56(a), Comcast shall continue to carry any such Stations, in digital format, on such cable systems.

b. For Stations carried on Comcast cable systems as of December 31, 2010 pursuant to digital carriage agreements between the Station and Comcast, including but not limited to for purposes of this Condition, the agreement between the National Cable & Telecommunications Association ("NCTA") and (i) the Association of Public Television Stations ("APTS") and (ii) the Public Broadcasting Service ("PBS") dated January 31, 2005 (the "NCTA/APTS Agreement"), Comcast shall continue to carry such Stations, in accordance with the terms of the relevant agreement, on such cable systems. To the extent that a Station's digital carriage agreement with Comcast expires prior to the expiration of this Condition, Comcast commits to continue to carry such Station after the expiration of the agreement in accordance with the terms of paragraph (a) for the full term of this Condition.

2. These carriage obligations shall only apply to the extent that: (i) each such Station continues to deliver a good quality (non-broadcast) signal of the covered programming stream(s) to the relevant Comcast headends; (ii) each such Station certifies that it has the necessary copyrights to provide the programming contained in each programming stream delivered to Comcast, and conveys, without charge to Comcast, such copyrights and clearances as Comcast needs to distribute the programming; (iii) each programming stream contains noncommercial programming and other material that would be consistent with a broadcast station's charter as a Qualified NCE or Qualified Local NCE; and (iv) each programming stream delivered to Comcast does not include programming that substantially duplicates the programming of any then-existing broadcast or cable programming service carried by the relevant Comcast system(s).

3. This Condition shall not be construed to extend the term of any existing agreement, nor to require any Comcast cable system to carry any Station or Station's programming stream that Comcast is not: (i) already carrying as of December 31, 2010; or (ii) obligated to carry pursuant to the terms of the Station's digital carriage agreement, including but not limited to the NCTA/APTS Agreement. This Condition shall expire on December 31, 2017, or upon the FCC's promulgation of rules of general applicability regarding the subject matter of this Condition.

XVI. CONDITIONS TO EXPAND BROADBAND DEPLOYMENT AND ADOPTION

1. Comcast Broadband Footprint Expansion

a. Comcast shall expand its existing broadband network by at least 1,500 miles per year during the three years after the Closing of the Transaction (during 2011, 2012 and 2013), extending its broadband plant to approximately 400,000 additional homes.

b. Comcast shall also upgrade for Internet service at least six additional rural communities in 2011.

c. Comcast shall provide an additional 600 courtesy video and Broadband Internet Access Service account locations (for schools, libraries, and other community institutions, targeted to underserved areas in which broadband penetration is low and there is a high concentration of low income residents) over the three years after the Closing of the Transaction, at a rate of 200 additional locations per year. This continuing Condition shall include Comcast's bearing 100 percent of the construction costs to bring Internet connections and providing the Broadband Internet Access Service without charge to these locations.

2. Expanding Broadband Adoption – Comcast Broadband Opportunity Program

   a. Within nine months of the Closing of the Transaction, Comcast shall commence a program, the Comcast Broadband Opportunity Program ("CBOP"), to substantially increase broadband adoption in low income homes throughout Comcast's service area.

   b. CBOP shall address the three key barriers to adoption identified in the National Broadband Plan: (i) reducing the cost of broadband access for low income homes; (ii) the lack of a computing device in the home; and (iii) the absence of digital literacy. Its objective is to boost the number of low income homes using broadband within Comcast's service areas.

   c. Under CBOP, each eligible participating household shall:

      (i) receive the Economy version of Comcast's Broadband Internet Access Service for $9.95 per month – a rate for which the household shall qualify so long as it meets the "Eligibility Criteria" below.

      (ii) pay no installation or modem charges or fees (although Comcast may use its self-install program).

      (iii) be eligible for one piece of pre-configured, quality computer equipment (which may include rebuilt PCs, netbooks, or other devices) for less than $150 (the equipment shall be sold to the customer by a third-party vendor-partner of Comcast's, with Comcast providing any subsidy required to bring the equipment cost below $150).

      (iv) have access to web-based, print and classroom-based training programs, provided in partnership with One Economy and other current and future Comcast community partners in its digital literacy efforts, including Boys and Girls Clubs, and Urban League and National Council of La Raza ("NCLR") affiliate organizations. Comcast shall create and fund these programs, although it may seek Foundation and other funds to defray these costs.

   d. CBOP shall run for a total of 36 months (through three school years) after the program commences (although households that qualify during the three-year program shall remain eligible for the program for the discounted Broadband Internet Access Service rate so long as they have a student in the household who qualifies), but in any event Comcast shall maintain CBOP through three full school years.

   e. Comcast shall implement CBOP in coordination with state education departments and local school districts, which shall be responsible for certifying household eligibility for participation in the program.

   f. The "Eligibility Criteria" for CBOP are: (i) there is at least one child in the household eligible for a free lunch under the National School Lunch Program ("NSLP"); (ii) the household is not the subject of a current Comcast collections activity; and (iii) the household has not subscribed to a Comcast Internet service within 90 days prior to installation.

g. Comcast shall solicit participation in CBOP through participating school districts' NSLP enrollment processes. It shall rely on this established certification process to qualify participants in CBOP.

h. Comcast shall request that school districts include information about CBOP with their first communication to families in advance of the school year and in each NSLP communication, as feasible and appropriate. The goal is to ensure that families that qualify for the free NSLP are aware of the program at the beginning of the school year and have the opportunity to register in conjunction with the NSLP process. Comcast shall provide appropriate collateral materials and request that they be included in all NSLP mailings, as appropriate.

i. Comcast shall endeavor to educate school professionals who work closest with NSLP-eligible families about CBOP. This outreach shall include the various education-related associations, including PTAs and associations representing guidance counselors and social workers, in order to reach those who are most likely to work closely with students and families who qualify for the free NSLP.

j. Prospective participants shall be directed to a Comcast phone number dedicated to this program to verify eligibility. Qualifying callers shall be transferred to a centralized order-entry center. When service installation is complete, the participating household shall receive a voucher and instructions on how to obtain the subsidized computer equipment noted above.

k. Comcast shall engage in efforts, in coordination with community partners, to publicize the availability of the program, targeted to areas with high concentration of low-income residents and especially through vehicles that are targeted to eligible households. Among other things, Comcast shall promote CBOP through public service announcements, as well as through segments of Comcast Newsmakers featuring guests who shall describe CBOP and how to take advantage of it. Comcast shall distribute the CBOP information to its partners who work with low-income communities – on a national and local level (*e.g.*, One Economy, National Urban League, NCLR). Comcast shall also coordinate with state and local education administrative entities to enable notification of certified NSLP families of CBOP.

l. Comcast shall offer several computer training and support options to all households participating in CBOP:

   (i) At the time of installation, each participating household shall receive basic instructional materials and a phone number for a dedicated support desk.

   (ii) The computer equipment shall be pre-configured with a "wizard" to facilitate e-mail set-ups and the setting of parental controls.

   (iii) Shortcuts to "getting started" tutorials shall appear on the desktop.

   (iv) Each piece of equipment shall ship with Norton security pre-installed.

   (v) Comcast and its partner organizations shall offer "training days" at NSLP-participating schools in Comcast's service areas, as well as at instruction facilities operated by Comcast's community partners.

m. Comcast shall submit an annual report to the Commission beginning on July 31, 2012 and for three years thereafter. That report shall include a description of Comcast's compliance with the adoption conditions listed above. Comcast shall identify the total number of households participating in CBOP, perform an analysis of CBOP's effectiveness, and describe any adjustments Comcast plans to implement to improve its effectiveness. Comcast shall make this annual report available on its website.

XVII. GENERAL

No C-NBCU Programmer shall enter into any agreement or arrangement or take any other action that has the purpose or effect of impairing the effectiveness of these Conditions.

XVIII. VIOLATIONS

Any violation of these Conditions shall be a violation of the Order.

XIX. REPORTING REQUIREMENTS

Except as otherwise expressly provided, Comcast and C-NBCU shall report to the Commission annually regarding compliance with these Conditions and shall post each such report on its website.

XX. TERM

Except as expressly stated, these Conditions shall remain in effect for seven years following the date of this Order.[11]

[11] The Commission will consider a petition from Comcast or C-NBCU for modification of a Condition if they can demonstrate that there has been a material change in circumstances, or that the Condition has proven unduly burdensome, such that the Condition is no longer necessary in the public interest. *See, e.g., News Corp. and DIRECTV Group, Inc. and Liberty Media Corp. for Authority to Transfer Control*, Memorandum Opinion and Order, 23 FCC Rcd 3265, 3345 (2008).

EXHIBIT 11

Selected Comcast-NBCUniversal Diversity Awards
2010-2014

Overall/Multiple Focus Areas

- Comcast-NBCUniversal was named among *DiversityInc* magazine's prestigious "The 2013 ***DiversityInc Top 50 Companies for Diversity***" list. The "Top 50" includes companies from a wide range of industries that *DiversityInc* recognizes for "using diversity management to attract and retain a global, multicultural workforce and gain market share." Companies participate in the annual survey assessing four areas of diversity management:
    - CEO Commitment: accountability for results, communications, visibility
    - Human Capital: management, professional development, and promotions
    - Corporate and Organizational Communications: mentoring, employee resource groups, philanthropy, consistency/effectiveness of diversity-management initiatives
    - Supplier Diversity: spend with certified minority-owned and women-owned companies, as well as spend with companies owned by people with disabilities, veterans, and members of the LGBT community

  Comcast was recognized as one of ***DiversityInc's 25 Noteworthy Companies*** for the three consecutive prior years.
- The ***National Association for Multi-ethnicity in Communications (NAMIC)*** honored Comcast and NBCUniversal with its ***2013 Industry Diversity Champion Award***, which is given to a company demonstrating an exemplary effort to address diversity and inclusion among its workforce and within the communities it serves.
- In November 2013, Comcast and NBCUniversal were both designated a ***2013 Top Company for People of Color by NAMIC***, based on the findings of NAMIC/WICT's (Women in Cable Telecommunications) Cable Telecommunications Workforce Diversity Survey.
- ***OCA - Asian Pacific American Advocates***, a national membership driven organization dedicated to advancing the social, political, and economic well-being of Asian Pacific Americans (APAs), awarded Comcast-NBCUniversal its ***2013 Outstanding Corporate Partner Award*** during the National Asian Pacific American Corporate Achievement Awards in November 2013. The distinction recognizes Comcast-NBCUniversal for its demonstrated commitment to diversity and to partnering with OCA on community investment efforts.
- ***Black EOE Journal*** (BEOEJ) named Comcast among its ***2013 Best of the Best*** lists for "Top Diversity Employers" and "Top Supplier Diversity Programs." In determining the Best of the Best companies, the BEOEJ polled hundreds of Fortune 1000 companies for its 2013 Best of the Best evaluations. BEOEJ is a leading African American career and business magazine. Its annual review is an evaluation of the nation's employers, initiatives, government agencies, and educational institutions.
- ***Hispanic Network Magazine*** named Comcast and NBCUniversal among its ***2013 Best of the Best*** lists for "Top Diversity Employers" and "Top Supplier Diversity Programs" for 2013.
- ***U.S. Veterans Magazine*** (USVM) named Comcast-NBCUniversal among its ***2013 Best of the Best*** lists for "Top Veteran-Friendly Companies" and "Top Supplier Diversity Programs."

- ***Professional Woman's Magazine*** recognized Comcast-NBCUniversal among its 2013 Best of the Best lists for "Top Diversity Employers for Women" and "Top Supplier Diversity Programs for Women."

- In March 2013, ***Calvert Investments***, a mutual fund firm that invests in companies that engage in sustainable and responsible practices, released its ranking of diversity among companies in the S&P 100. Using an in-depth methodology, Calvert examines diversity policies, programs, and performance metrics that these companies employ. This year, ***Comcast scored 90 points out 100 for its record on including women, minorities, and LGBTs***. Among other initiatives, Calvert highlighted Comcast's diversity recruiting events, new Office of Corporate Diversity and Inclusion, and restructured Internal Diversity Council.

- Comcast Corporation was honored with the ***New York Urban League's (NYUL) 2013 "Champions of Diversity" Award***, presented at the 10th Anniversary Champions of Diversity (COD) Awards Breakfast in February 2013. The COD Awards Breakfast recognizes companies that understand the need for diversity in the job market, embracing diversity to its fullest potential, and understanding that, to be successful in today's competitive market, diversity must be reflected in every aspect of the workplace. Corporate leadership, employment policy, supplier relations, and corporate giving are fundamental tenets of NYUL's philosophy. In listing Comcast-NBCUniversal among its COD honorees, the NYUL recognized that our "top-down commitment to diversity is evident through its leadership, hiring, supplier relations and philanthropic activities."

- ***Black Enterprise*** magazine selected Comcast as one of its 40 Best Companies for Diversity in 2012. *Black Enterprise* compiles its 40 Best Companies for Diversity list with a survey measuring diversity among employee base, senior management, board of directors, and procurement.

- Comcast-NBCUniversal ranked No. 9 among ***HispanicBusiness.com's 2013 Best Companies for Diversity***. Each year, *Hispanic Business* magazine analyzes top corporation's efforts on diversity in recruitment and retention, governance, supplier development, and philanthropy.

    - 2013 marks Comcast's 9th consecutive year on *Hispanic Business's* Top 60 list (Comcast was also ranked 9th in 2012, moving up from 37th in 2011, and 38th in 2010).

- For the second year in a row, Comcast was named among ***Asian Enterprise Magazine's Fortune 500's Best Companies for Asian Americans and Pacific Islanders***, recognizing Comcast's "invaluable contribution to the Asian American and Pacific Islander community." (August 2012)

Governance

- Comcast received a score of 85 on the Hispanic Association of Corporate Responsibility's (HACR) 2013 Corporate Inclusion Index (CII). The HACR CII, a component of HACR's Corporate Accountability Strategy, takes a comprehensive measurement of Hispanic inclusion at *Fortune 100* and HACR corporate member companies by focusing on HACR's four pillars of corporate social responsibility and market reciprocity: Employment, Procurement, Philanthropy, and Governance.

    - Comcast earned a score of 75 on the 2012 CII, 60 points on the 2011 CII, and 50 points on HACR's 2010 CII.

- Comcast and NBCUniversal's Diversity Councils are ranked ***3rd*** among the ***2013 Top 25 Diversity Councils by the Association of Diversity Councils*** (a practice group of the diversity and inclusion training firm PRISM International, Inc.).

    - 2013 is the fifth consecutive year that Comcast has made the *Top 25* list.

- In 2010, Comcast was ranked #13; in 2011, Comcast was #8; in 2012, Comcast and NBCUniversal's Diversity Councils were ranked #5.

- In May 2012, the ***Equality Forum*** honored NBCUniversal with its ***International Business Leadership Award***.

- Comcast received a ***Corporate Impact Award*** at the California Asian & Pacific Islander Policy Summit, *iADVOCATE*, in April 2012.

- At the National League of Cities' (NLC) Congress of Cities and Exposition in 2012, Comcast officials accepted awards of appreciation from Asian Pacific American Municipal Officials (APAMO), Women in Municipal Government (WIMG), National Black Caucus of Local Elected Officials (NBC-LEO), Hispanic Elected Local Officials (HELO) and the Gay Lesbian Bisexual Transgender Officials (GLBTO).

Workforce

All Communities

- ***Equal Opportunity*** magazine ranked Comcast #22 in among its 2014 "Top 50 Employers." Readers of *Equal Opportunity* select the top companies in the country for which they would most prefer to work or believe would provide a positive working environment for members of minority groups.

- In March 2014, ***The Legal Intelligencer*** named Comcast's legal team among Pennsylvania's Best In-House Legal Departments of the Year for its commitment to diversity and critical victory in *Comcast v. Behrend.*

- The Legal Department of Comcast Cable Communications was selected to receive the ***Minority Corporate Counsel Association's 2013 Employer of Choice Award for the Mid-Atlantic Region***. Comcast was selected from law department applicants of corporations across the Mid-Atlantic for demonstrating a commitment to diversity and creating and maintaining an inclusive workplace.

- Comcast ranked 19th on the ***2013 CareerBliss Leap Awards*** list. CareerBliss is a leading online career community helping people find joy and success at every step in their careers—in determining the top 50 deserving companies, CareerBliss evaluated more than 250,000 independent company reviews. Common themes amongst all recipients include a company's dedication to employee incentive programs, work-life balance, comprehensive benefits, and career advancement programs.

    - Comcast ranked 26th on the 2011 CareerBliss Leap Awards list.

- Comcast received the Hall of Fame award among extra-large companies in the Philadelphia Business Journal's list of "Best Places to Work." (2013)

- The National Business Group on Health honored Comcast as the Special Recognition Winner for Best Family Engagement in the Best Employers for Healthy Lifestyles 2013 Awards.

- Comcast was named one of the ***2012 Best Adoption-Friendly Workplaces*** by the Dave Thomas Foundation for Adoption. The list recognizes the top 100 companies with the best adoption benefits available to their employees. Comcast tied for #3 with Verizon Communications in the Communications and Telecommunications category.

- In 2012, for the seventh year in a row, Comcast ranked among ***CableFAX: The Magazine's "Top Places to Work in Cable."***

    - Numerous executives from across the Comcast-NBCUniversal family of businesses were featured among CableFAX's "***Most Influential Minorities in Cable***" in 2011.

- In late May 2012, *Forbes* magazine ran a story on "best internships" for 2012 and ranked NBCUniversal in the top 20.
- Comcast placed 9th out of 50 among ***Diversity MBA Magazine's "Top 50 Companies for Diverse Managers to Work."*** (April 2010)
- In 2010, Comcast earned second place in the Philadelphia Business Journal's "Best Places to Work" Survey.

African American

- Comcast received the ***National Association of Black Accountants' (NABA) 2012 Workforce Diversity Award***.
- Comcast received the ***"Outstanding Achievement in Workforce Initiatives"*** honor from the ***Philadelphia Association of Black Accountants*** in 2012.
- Comcast was recognized as the ***2011 National Black MBA Association, Inc.'s Corporate Partner of the Year.***
- NBCUniversal won the ***2010 National Association of Black Journalists Best Practices Award***, given annually to a news organization for extraordinary coverage of issues of great importance to the black community and for efforts in increasing diversity among newsroom staff and management.

Asian

- Comcast received the ***Asian American Justice Center's 2011 Bridge Builder Award***. (October 2011)
- Craig Robinson, NBCUniversal's EVP and Chief Diversity Officer, was honored by the ***Japanese American Citizens League (JACL)*** in September 2012 with its ***Salute to Champions Award***. Comcast received the JACL's Salute to Champions Award in September 2011.
- ***Hmong American Partnership*** featured Comcast as its ***"Partner of the Month."*** (August 2011)
- Comcast Cable received the ***APIsCAN Corporate Vision and Leadership Award from the Asian Pacific Islanders California Action Network***. (July 2011)

Hispanic

- In its Fall 2013 issue, *Latino Magazine* recognized Comcast among the LatinoSTEM10 as a top 15 company actively encouraging Latinos to enter STEM (science, technology, engineering and mathematics) careers.
- In its Spring 2013 issue, *Latino Magazine* recognized Comcast-NBCUniversal among its first-ever LATINO 100, a listing of the top 100 companies providing the most opportunities for Latinos.
- Comcast was selected as one of the ***Top 12 companies in the 2013 LATINA Style 50 Report***.
- Comcast was selected as the ***Company of the Year (#1)*** for the ***2012 LATINA Style 50 Best Companies for Latinas to Work***. (July 2012)
    - 2012 marked the sixth consecutive year Comcast has been ranked among ***LATINA Style Magazine's 50 Best Companies for Latinas to Work***.

- Comcast ranked 45th on LATINA Style's 2011 list. In 2010, Comcast ranked 46th.

Women

- Women in Cable Telecommunications (WICT) ranked Comcast (and Cox Communications) first among Best Operators for Women in Cable; and NBCUniversal ranked first among Best Programmers for Women in Cable in ***WICT PAR's 2013 Best Companies for Women in Cable Telecommunications*** survey.
- Comcast ranked third among operators and NBCUniversal ranked first among programmers in ***WICT PAR's 2011 Best Companies for Women in Telecommunications*** Survey.
- Comcast was named "***Regional Corporation of the Year***" by the Woman's Business Enterprise Council of PA NJ DE. (May 2010)

Veteran

- In November 2013, *G.I. Jobs* and *Military Spouse* magazines ranked Comcast-NBCUniversal No. 76 among the Top 100 Military Friendly Employers for 2014. Companies compete for this elite title through a data-driven survey, with criteria scoring key programs and policies such as the strength of company military recruiting efforts, percentage of new hires with prior military service, and retention programs.
- Due to an unprecedented number of participants in its annual survey, ***G.I. Jobs***, for the first time, awarded a new "Military Friendly Employers®" designation in 2012, recognizing employers that offer tremendous benefits for military personnel but fall outside of *G.I. Jobs'* Top 100 list. Comcast was named among this elite group of ***Military Friendly Employers***® in *G.I. Jobs* magazine's January 2013 issue, having qualified for this designation based on our survey score, which meets *G.I. Jobs'* stringent criteria and exceeds an established baseline.
    - Comcast was listed among *G.I. Jobs'* 2011 Top 100 Military Friendly Employers (at 87th); Comcast also ranked No. 87 on the 2010 *G.I. Jobs'* Top 100 list.
- Comcast/NBCUniversal was named one of ***U.S. Veterans Magazine's* "2012 Best of the Best: Top 100 Companies Recruiting Veterans."** *U.S. Veterans Magazine's "Best of the Best"* lists are compiled from market research, independent research, confidential employee interviews, and responses to surveys conducted by DiversityComm representatives and/or its affiliates. This objective review evaluates the nation's top employers, providing a valuable resource for job seekers, business owners, veterans, consumers, senior management, business associations, employment agencies, and consumer groups.
- In November 2012, the U.S. Chamber of Commerce and its National Chamber Foundation announced Comcast and NBCUniversal among its ***2nd Annual Lee Anderson Hiring Our Heroes Award Winners***, honoring employers that have gone above and beyond to honor the sacrifices made by our nation's military families. Specifically, Comcast and NBCUniversal received the Lee Anderson Veteran and Military Spouse Employment Award, which recognizes Comcast and NBCUniversal's proven dedication in addressing the challenges faced by veterans, transitioning service members, and military families in their search for meaningful employment.

LGBT

- For the second year in a row, Comcast-NBCUniversal earned a 100% score on the Human Rights Campaign's (HRC) 2014 Corporate Equality Index (CEI), and was recognized among ***HRC's "Best Places to Work"*** list. HRC's CEI rates large U.S. employers and their policies and procedures pertinent to LGBT employees.

- Comcast scored 80 points out of 100 on HRC's 2012 CEI, 95 out of 100 on HRC's 2011 CEI, and 90 out of 100 on HRC's 2010 CEI.

- For the second year in a row in 2012, NBCUniversal was selected as one of ***Work Life Matters magazine's Top Companies for LGBT Equality***, honoring the trailblazing company's work for LGBT equality, both within and outside the company. (June 2011 and November 2012)

People with Disabilities

- Comcast was listed No. 27 among ***Careers & the disABLED Magazine's Readers' Choice Top 50 Employers for 2014***. The Readers' Choice Awards include public and private sector employers for which the publication's readers would most like to work or that they believe would provide a progressive environment for people with disabilities.
    - Comcast ranked No. 9 on the 2013 list and No. 41 on the 2012 list.

- Universal Orlando won a ***2012 Exceptional Employer Award from the State of Florida's Agency for Persons with Disabilities***. Lighthouse Central Florida nominated Universal Orlando for its work with them on providing employment opportunities for persons with disabilities.

- NBCUniversal won the ***Disability Rights Legal Center's Corporate Diversity Award***. (November 2011)

<u>Procurement</u>

- 2012 marked the sixth consecutive year in which Comcast was named among NaVOBA's *10 Best U.S. Corporations for Veteran-Owned Businesses*.

- DiversityBusiness.com ranked Comcast-NBCUniversal 27th among its ***Top 50 Organizations for Multicultural Business Opportunities*** (Div50) for 2014. The Div50 award recognizes commitment to diversity throughout the nation's multicultural business community and commitment to growing this economic sector. The award is based on factors such as volume, consistency, and quality of business initiatives a company grants to multicultural suppliers. 2014 marked our ninth consecutive year on the list.

- In December 2013, the ***PA-NJ-DE Minority Supplier Development Council (MSDC)*** recognized Comcast as ***National Corporation of the Year*** based on the company's supplier diversity policies, contracting activity, MBE development, leadership, and engagement. The PA-NJ-DE MSDC is one of 37 regional councils of the National Minority Supplier Development Council, which certifies minority-owned businesses and creates access to opportunities for them.

- In September 2013, Comcast-NBCUniversal was honored among United States Hispanic Chamber of Commerce's (USHCC)'s Million Dollar Club ($100M-$250M category), which recognizes corporations and procurement executives who actively demonstrate an unwavering commitment to Hispanic Business Enterprises (HBEs) through their work with Hispanic suppliers.

- In September 2013, the ***National Association for Multi-ethnicity in Communications (NAMIC)*** announced the winners of its 2013 ***Excellence in Multi-cultural Marketing Awards (EMMAs)***. Comcast garnered five first place wins to lead the Cable Distributors division. Additionally, Telemundo Media, including mun2, garnered three first place wins, and International Media Distribution earned two first place awards.

- In August 2012, NAMIC awarded Comcast and NBCUniversal multiple ***EMMAs***. Presented in conjunction with the Annual NAMIC Conference, the awards competition showcases marketing efforts designed to acquire and retain culturally diverse customers including African American,

Asian, Hispanic, and other market segments. The EMMA competition recognizes the cable industry's commitment to facilitating best practices, while developing creative, strategic, and innovative approaches to ethnic-targeted marketing.

- Cable Distributors Division – Marketing Tactics – Direct Mail
  - First Place Entry Title: Filipino Movies TOD Summer Entertainment; Company: Comcast; Agency: International Media Distribution.
  - Third Place Entry Title: XFINITY Carefree Minutes Worldwide300 DM; Company: Comcast; Agency: Améredia Inc.
- Cable Distributors Division – Marketing Tactics – Grassroots
  - First Place Entry Title: Comcast Experience Store Launch; Company: Comcast
- Cable Distributors Division – Marketing Tactics – Print
  - First Place (Tie) Entry Title: Chinese Authorized Dealer Experience; Company: Comcast; Agency: Améredia Inc.
- Cable Distributors Division – Marketing Tactics – All Other Media
  - First Place Entry Title: Comcast-Multilingual-OnScreen Guide; Company: Comcast; Agency: Améredia Inc.
- Networks/Industry Suppliers Division – Case Studies/Campaigns
  - Third Place (Tie) Entry Title: STAR India GOLD Comcast GPW Campaign; Company: International Media Distribution; Agency: MCWM Group
  - Third Place (Tie) Entry Title: Chase "Y Vuelvo a Ti"; Company: Telemundo Media; Agency: Zubi Advertising
- Networks/Industry Suppliers Division – Marketing Tactics – Direct Mail
  - Second Place Entry Title: TV JAPAN Cherry Blossom 2012; Company: International Media Distribution; Agency: Améredia Inc.
- Networks/Industry Suppliers Division – Marketing Tactics – Diversity Awareness
  - First Place Entry Title: Lunar New Year Video Greeting; Company: International Media Distribution
  - Second Place Entry Title: Black and Latino; Company: mun2-NBCUniversal
- Networks/Industry Suppliers Division – Marketing Tactics – Premium
  - First Place Entry Title: IMD 2012 Q4 Holiday Gifts; Company: International Media Distribution; Agency: DesignRacy
- Networks/Industry Suppliers Division – Marketing Tactics – Print
  - First Place Entry Title: "A little piece of home" TFC 3Q GWP; Company: International Media Distribution
  - Second Place Entry Title: Cox San Diego Asian Film Festival; Company: International Media Distribution

- Comcast was named one the ***Best Companies for Asian American and Pacific Islanders*** in 2012 by *Asian Enterprise* magazine, which recognized Comcast's "unwavering and continued commitment to the small business community" and "invaluable contribution to the Asian American and Pacific Islander community."

- The ***Rocky Mountain Minority Supplier Development Council*** named Comcast its ***Corporate Partner of the Year*** in July 2012.
- Comcast was ranked #1 among the ***"Top 50 Green Fleets"*** in 2012 by ***Fleet Central Magazine***, thanks in part to Comcast's effective outsourcing relationship with Burt Fleet. Burt Fleet, an MSDC-certified supplier, has provided in excess of 20,000 vehicles to Comcast across our service footprint, making Comcast the 4th largest fleet in the U.S., and aiding Comcast's commitment to lowering our carbon footprint by purchasing flex-fuel and hybrid vehicles.
- NBCUniversal was named ***2012 Corporation of the Year*** by the Greater Los Angeles African American Chamber of Commerce (GLAAACC).
- Comcast was recognized as the ***National Black Chamber of Commerce's Corporate Partner of the Year***. (August 2011)
- In 2011, Comcast's "excellent supplier-diversity program" was recognized by *DiversityInc* in its ***25 Noteworthy Companies*** listing. (May 2011)
- Comcast, in collaboration with GRM Marketing, won first place in the Tactics Category for Experimental Marketing of NAMIC's 2011 ***Excellence in Multicultural Marketing*** Awards (EMMAs) for La Academia de Comcast. (October 2011)
- The Hispanic Chamber of Commerce in Philadelphia recognized Comcast as the 2010 "***Corporate Advocate of the Year***."

Programming

- The National Hispanic Media Coalition (NHMC) honored Comcast for its Outstanding Diversity Practices during NHMC's 17th Annual Impact Awards Gala in February 2014. The Impact Awards Gala celebrates the artistic achievement of American Latino artists shows work is so creative and outstanding that it must be recognized. NHMC also honors those individuals or entities whose achievements have greatly benefited the welfare of the Latino community in front of and behind the camera.
- Comcast-NBCUniversal was awarded the ***2014 Multicultural TV Front Runner Award*** for the company's commitment and efforts to support multicultural communities -- in particular, for noteworthy efforts like *His Dream, Our Stories*, the interactive and comprehensive multimedia package we unveiled to honor the 50th anniversary of the March on Washington for Jobs and Freedom.
- ***25th Annual GLAAD Media Awards***. In 2014, sixteen Comcast-NBCUniversal productions were nominated for GLAAD Media Awards, which recognize and honor media for their fair, accurate, and inclusive representations of the LGBT community and the issues that affect their lives.
    - Dallas Buyers Club (Focus Features) – Outstanding Film
    - "There's the Door" Necessary Roughness (USA Network) – Outstanding Individual Episode
    - Days of Our Lives (NBC) – Outstanding Daily Drama
    - "Gay Rights at Work" MSNBC Live (MSNBC) – Outstanding TV Journalism Segment
    - "Pride & Prejudice" Melissa Harris-Perry (MSNBC) – Outstanding TV Journalism Segment
    - "Scouts Dishonor" The Last Word with Lawrence O'Donnell (MSNBC) – Outstanding TV Journalism Segment

- "Wild Blue Yonder: Scott Hines" The Rachel Maddow Show (MSNBC) – Outstanding TV Journalism Segment
- "Entregando a mi nieta" Caso Cerrado (Telemundo) – Outstanding Daytime Talk Show Episode [Spanish Language]
- "Exclusivas Declaraciones" Al Rojo Vivo (Telemundo) – Outstanding Daytime Talk Show Episode [Spanish Language]
- "Matrimonios del mismo sexo: Entrevista con Daniel Zavala y Yohandel Ruiz" Un Nuevo Día (Telemundo) – Outstanding Daytime Talk Show Episode [Spanish Language]
- "Decisión Histórica" Noticiero Telemundo (Telemundo) – Outstanding TV Journalism Segment [Spanish Language]
- "Hasta que la corte nos una" Noticias Telemundo 51 (WSCV-51 [Miami, Fla.]) – Outstanding Local TV Journalism [Spanish Language]
- "Natalia: rompiendo barreras" Noticiero Telemundo Arizona (KTAZ-39 [Phoenix, Ariz.]) – Outstanding Local TV Journalism [Spanish Language]
- "Reportaje Especial: Derechos Homosexuales" Noticiero Telemundo Washington (WZDC-25 [Washington, D.C.]) – Outstanding Local TV Journalism [Spanish Language]
- Brooklyn Nine-Nine (Universal Television) – Outstanding Comedy Series category
- "Fred Rosser" The Ellen DeGeneres Show (syndicated/airs on NBC's 10 Owned Stations) – Outstanding Talk Show Episode

- In July 2013, NAMIC announced winners of its 19th Annual Vision Awards. Presented in partnership with **NAMIC - Southern California**, the awards recognize original, multi-platform television programming that depicts the lives, spirit and contributions of people of color and best reflects the diversity of the global viewing audience. This year's winners include:
  - COMEDY: The Rickey Smiley Show (TV One)
  - DIGITAL MEDIA – LONGFORM: Black and Latino (mun2)
  - DIGITAL MEDIA – SHORT FORM: The Secret of Chancla (mun2)
  - REALITY (UNSCRIPTED): Tia and Tamera (Style Network)
  - REALITY (SOCIAL SERIES): Save My Son (TV One)
- ***24th Annual GLAAD Media Awards* (2013)**. Eighteen NBCUniversal productions were nominated for the 2013 GLAAD Media Awards.
  - In March 2013, NBC's "Smash" took home the award for Outstanding Drama Series. Titulares Telemundo was honored for Outstanding Talk Show interview, "Entrevista con Orlando Cruz." The GLAAD Media Awards recognize and honor media for their fair, accurate, and inclusive representations of the lesbian, gay, bisexual and transgender community and the issues that affect their lives. They also fund GLAAD's work to amplify stories from the LGBT community that build support for equality. NBCUniversal was nominated for 20 awards this year, the most of any media company.
  - In April 2013, GLAAD announced the recipients of several Media Awards, including NBC's "The New Normal" for Outstanding Comedy Series and NBC's "Days of Our Lives" as Outstanding Daily Drama.

- According to the National Association of Black Journalists' 2012 Diversity Census, NBC again led the industry with 27% newsroom management diversity, up from the prior year's 24%.
- Comcast Cable was the first-ever recipient of ***Broadcasting & Cable and Multichannel News' new award for Leadership in Hispanic Television***. (October 2012)
- MSNBC was announced as the recipient for the DANDI Award in the Media category at the first annual DANDI Awards Ceremony held in July 2012. The Diversity and Inclusion Awards, better known as the DANDI Awards, was founded in 2012 to recognize exemplary commitment and focus on diversity and inclusion. The mission of the DANDIs is to celebrate the contributions of any individual, group or organization that is truly making a difference toward creating a more diverse and inclusive world. MSNBC prepared a video that was presented during the awards ceremony, featuring Phil Griffin and emphasizing the network's commitment to diversity.
- The American Association of People with Disabilities honored NBCUniversal's USA Network with its Image Award at the annual AAPD Leadership Awards Gala in March 2012. USA was acknowledged for Characters Unite, which has helped promote equal rights and opportunities for people with disabilities.
- Comcast and NBCUniversal were recognized at the 23rd Annual ***GLAAD Media Awards*** in **2012**. Among other mentions:
    - Neil Meron and Craig Zadan, producers of "Smash," were honored with the Vito Russo Award, which is presented annually to openly LGBT media professionals who have made a significant difference in promoting equality;
    - FOCUS Features' "Pariah" was honored as Outstanding Film–Limited Release; and
    - Telemundo's "Lesbianas celebran 10 años" Caso Cerrado was honored as Outstanding Daytime Talk Show Episode.
    - GLAAD's Acting President took a special moment in his remarks to thank Comcast for sharing GLAAD's anti-bullying PSA with Comcast's nearly 23 million video customers.
    - Tina Fey and Rachel Maddow were featured in GLAAD's video clip recognizing media personalities who were committed to the positive representation and inclusion of LGBT community members and issues in the media.
- In February 2012, the ***National Latino Media Council*** (NLMC) released its 2011 Network Diversity report card, awarding NBC an overall B+ grade (an improvement over 2010's B grade). NBC earned an A+ for "Actors: On-Air Primetime Reality Shows," the highest score in any category for any network. NBC also earned an A in the "Entertainment Creative Executives" category, as well as the "Network Commitment to Diversity Initiatives and Submission of Data" category. The NLMC noted that there have been "tangible and incremental" results since NBC's 2000 MOU was signed.
- In December 2011, NBCUniversal received an overall grade of B from the ***Asian Pacific American Media Coalition***, the highest grade ever given by the group.
    - In December 2011, the Asian Pacific American Media Coalition (APAMC) issued its annual report card. Overall, NBC, with a B (up from a B- in 2010), ranked highest in this year's APAMC report cards, which marks the 10th anniversary of judging the inclusion of APAs in eight categories: actors, unscripted show participants, writers/producers, directors, development, procurement, executives, and network initiatives. No other network has ever received this high a grade from the coalition. Out of 12 report cards since 2000, NBC has received the highest overall grade 8 times (5 of them ties with other networks). NBC has also received the highest grade for actors, development deals, and

writers/producers, and tied for top honors in procurement, executives, and diversity initiatives. Guy Aoki, Co-Chair of the APAMC, stated, "last season, NBC had 13 regulars of Asian Pacific descent (boosted by five regulars on *Outsourced*). This was the highest number any network has been able to achieve in the 11 years the Coalition has released report cards. Accordingly, we have issued our highest grade in the actors category ever, a B+. NBC is the only network to receive this high a grade, which they also received in 2004."

- NBCUniversal was named to the WICT Foundation/PAR Initiative ***Best Programmers for Women in Telecommunications*** in 2011**.**
- NBCUniversal won ***GLAAD's award for Outstanding Individual Episode*** for the "Klaus & Greta" episode of 30 Rock. (March 2011)
- MSNBC's The Last Word with Lawrence O'Donnell won the ***2011 GLAAD Media Award*** for Outstanding TV Journalism Segment for its "Fort Worth Speech" segment. (April 2011)
- MSNBC President Phil Griffin was honored by the ***National Action Network*** as a recipient of its 13th annual ***Keepers of the Dream Award***. (April 2011)
- NBC's Parenthood was selected to receive the American Federation of Television and Radio Artists, AFL-CIO's (AFTRA) 2011 American Scene Award in the Television Dramatic Program category for its diversity of age and ethnicity, as well as groundbreaking storylines that accurately and honestly depict the intricacies of relationships. In addition, NBCUniversal's The Voice was selected as recipient of AFTRA's 2011 American Scene Award in the Talent competition. (July 2011)

Community Investment

- In March 2014, the Denver Indian Center presented its Excellence in Corporate Partnership Award to Comcast-NBCUniversal for the company's outstanding work with American Indian communities in Colorado and across the United States. Comcast Denver was recognized separately as Local Partner of the Year.
- Comcast/NBCUniversal received a ***Distinguished Corporation Award*** from the ***Congressional Black Caucus Foundation, Inc. (CBCF)*** for the our work in promoting digital literacy. This award honors corporations that have demonstrated a commitment to cultivating minority and civic engagement, public discourse on African American history, or the preservation of important historic artifacts through philanthropic or programmatic support. The award was presented at CBCF's Avoice Heritage Celebration on February 2014.
- In December 2013, Comcast was recognized among ***The Civic 50***, an initiative to identify the 50 most community-minded companies in the nation. Additionally, Comcast was recognized as #3 – Best in Communications industry. Launched in 2012, *The Civic 50* is an initiative to survey and rank S&P 500 corporations on how they engage with the communities they serve and institutionalize these practices in their corporate culture. Specifically, *The Civic 50* recognizes companies seeking to best use their time, talent, and resources to improve the quality of life in the communities where they do business.
- During its 2013 Corporate Philanthropy Summit, the *Philadelphia Business Journal* presented Comcast with the ***Top Community Impact Award*** and the ***Top In-Kind Donor Award*** in the extra-large company category. Comcast was also ranked as the fifth-largest corporate charitable giver in the Philadelphia region.
- In May 2013, the ***Gay, Lesbian & Straight Education Network (GLSEN)*** honored USA Network's *Characters Unite* campaign with its ***Inspiration Award*** during GLSEN's Respect

Awards in New York City. *Characters Unite* is USA Network's public service campaign to address the social injustices and cultural divides still prevalent in our society. Inspired by USA's iconic *Characters Welcome* brand and, with the support of leading national nonprofit organizations, the ongoing initiative is dedicated to supporting activities and messaging that combat hate and discrimination while promoting understanding and acceptance — on-air, online, and in communities around the country.

- During the ***United Way Spirit of America® and Summit Awards*** program in April 2013 in Indianapolis, the United Way recognized Comcast Corporation with awards for ***Philanthropic Engagement and Volunteer Engagement***. The Spirit of America and Summit Awards program, celebrating its 26th year, is United Way's highest national honor for corporations, recognizing United Way Global Corporate Leaders with the most comprehensive commitments to strengthening communities.
- Comcast received a Beacon Award® from the Association of Cable Communicators for its Internet Essentials Ambassadors Program. (2013)
- In June 2012, Comcast was honored with the ***Communications Pillar Award at the United Way's Annual Community Celebration***. The award recognizes a company that strategically raises visibility and awareness through outstanding communication to employees about the impact United Way makes in the Chicagoland community. Among other mentions:
    - Comcast's Angie Wells received the Outstanding Volunteer of the Year Award, which recognizes a United Way volunteer whose work has gone above and beyond the defined requirements and resulted in groundbreaking achievements towards the advancement of United Way's LIVE UNITED 2020 vision.
    - Comcast was also recognized for giving 110% year-over-year with our Comcast United Way employee campaign.
- Comcast received a ***Platinum PR Award*** in 2011 for Comcast Cares Day.
- Comcast Cable Communications was honored with a ***2011 Visionary Award presented by United Spinal***.