

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.

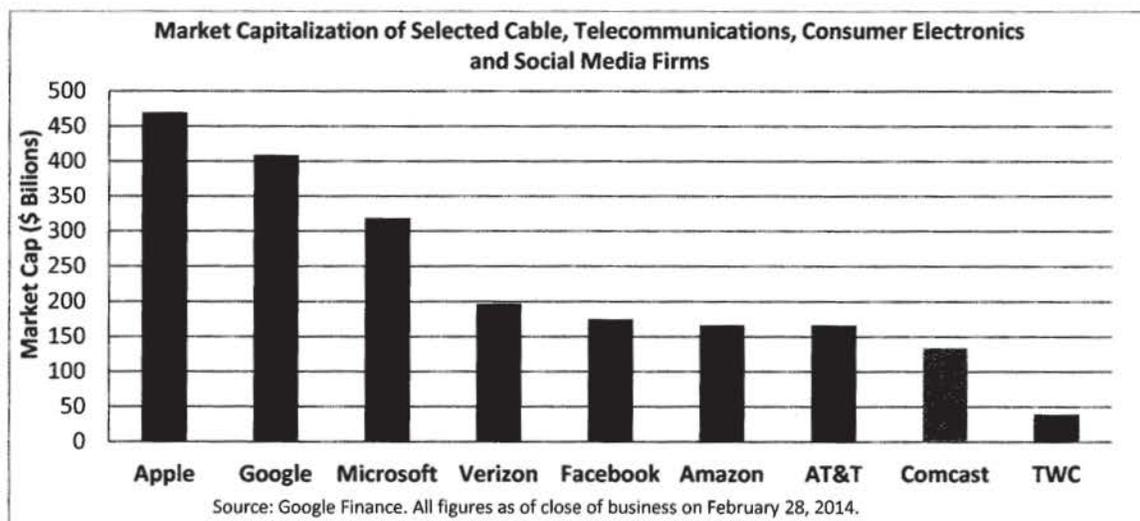
The combination of Comcast and TWC will create a world-class communications, media, and technology company significantly better positioned than either company alone to bring consumers the advanced services they want now and will need in the future and to keep America at the forefront of technology and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

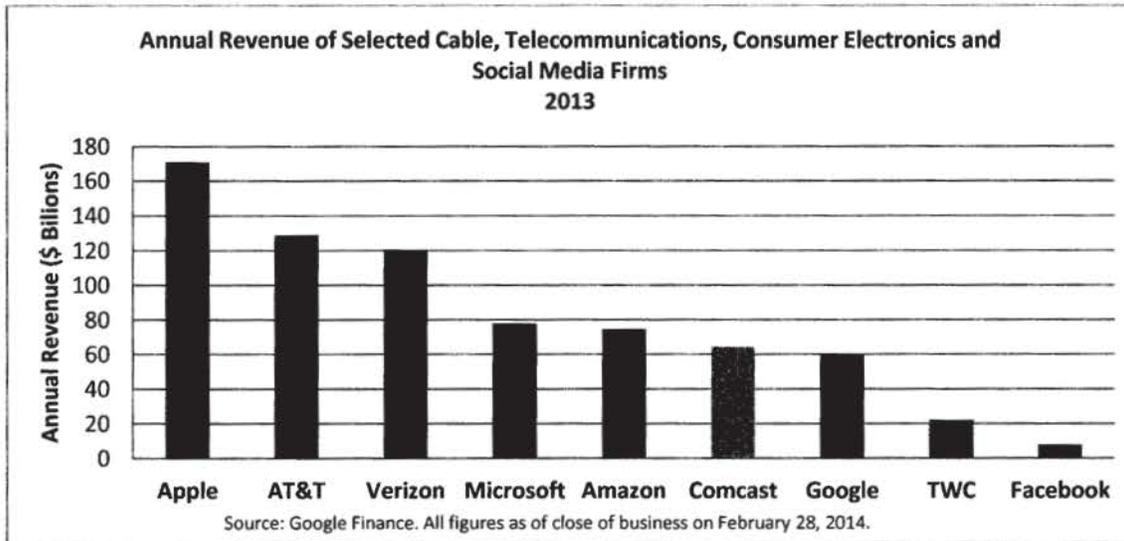
programming” to wireless devices.²² Today, Google increasingly competes as a network, video, and technology provider; Apple tablets now serve as a viewing platform for IP cable services even while Apple offers an online video service, Apple TV, and explores development of an Apple set-top box; Microsoft 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.

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

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.

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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:

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.”).

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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

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.”).

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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

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-ehrllich-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'").

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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

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 speeds⁴⁶ – 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

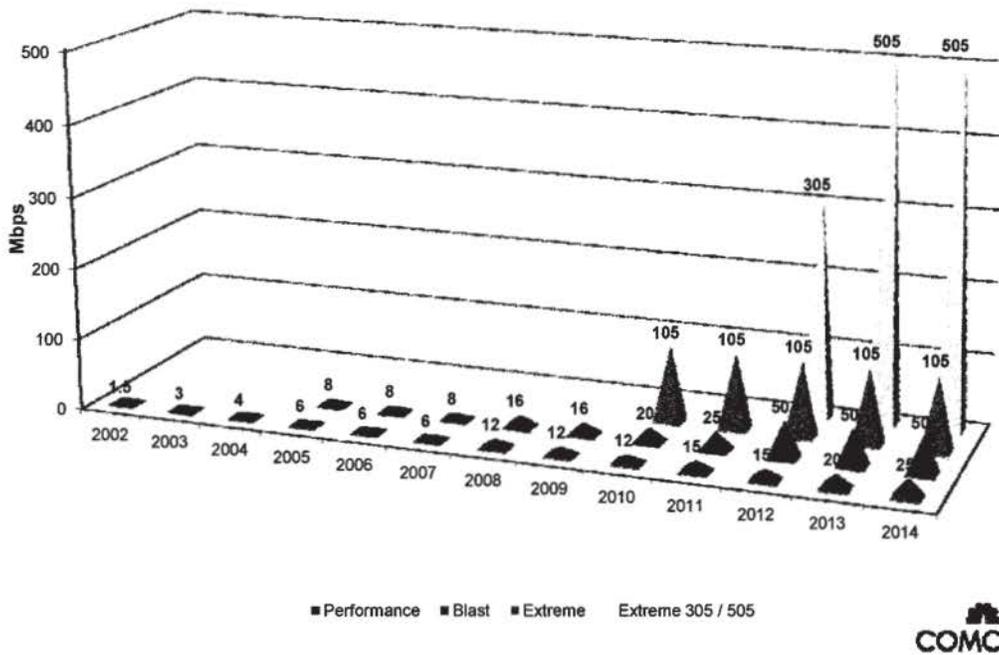
⁴⁴ *Id.* § 1302(b).

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.

XFINITY Internet Speeds 2002 – 2014:
Increased Speeds 12 Times in 12 Years



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.

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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

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 <i>downstream</i>	[[]]	
≥ 25 Mbps <i>downstream</i>		
≥ 3 Mbps <i>upstream</i>		
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,

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.

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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

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

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.

⁵⁹ Israel Decl. ¶ 187.

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

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

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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.

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/110rqC6> (noting that, with respect to the upgrade of the former AT&T systems, Comcast “outperformed even its own stated expectations”).

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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.

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.

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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

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.

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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

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-moffett-nathanson-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

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

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.

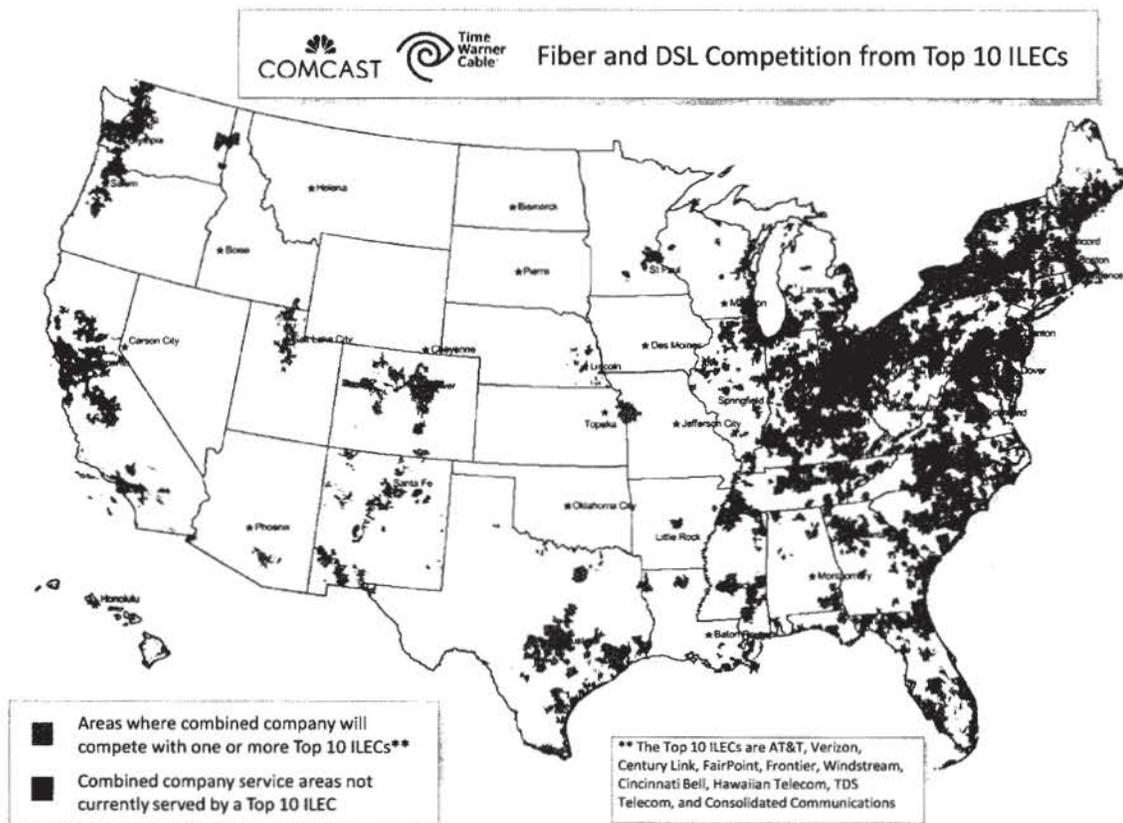
⁸² See Israel Decl. ¶ 197 (describing potential entry by combining Wi-Fi infrastructure with a mobile virtual network operator option); Rosston-Topper Decl. ¶ 99 & n.95 (same).

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>.

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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.



Cable & Telecom Boundaries Provided by **GeoResults**

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.