

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

In the Matter of	)	
	)	
Applications of Comcast Corporation, Time	)	MB Docket No. 14-57
Warner Cable Inc., Charter Communications, Inc.,	)	
and SpinCo to Assign and Transfer Control of	)	
FCC Licenses and Other Authorizations	)	

**COMMENTS OF CISCO SYSTEMS, INC.**

Cisco Systems, Inc. (“Cisco”) appreciates the opportunity to submit these comments in response to the Commission’s Public Notice regarding the transactions proposed by Comcast Corporation (“Comcast”), Time Warner Cable Inc. (“TWC”), and Charter Communications, Inc. (“Charter”), in the above-referenced proceeding.<sup>1</sup>

Cisco is the world’s largest manufacturer of networking equipment and a market leader in the provision of network solutions and applications that allow for the enhanced management of today’s networks.<sup>2</sup> Our company is one of the leading suppliers of Comcast’s networking equipment, including routers, switches and set-top boxes, and we collaborate with Comcast in the development and deployment of new video distribution products and services. We work closely with Comcast as it upgrades its networks and deploys the latest technology to serve both its residential and enterprise customers, giving Cisco a unique perspective on the proposed transactions. As discussed in detail below, accelerated innovation across the broadband

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<sup>1</sup> See *Commission Seeks Comment on Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations*, DA 14-986 (rel. July 10, 2014).

<sup>2</sup> See, e.g., Comments of Cisco Systems, Inc. GN Docket Nos. 14-28 & 10-127, at 1 (filed July 17, 2014).

ecosystem is needed to address the exploding consumer demand for both fixed and mobile broadband services, and Comcast has demonstrated its commitment to innovation and its leadership in that area. The proposed transactions not only will enhance Comcast's ability to innovate, but also will spur additional innovation by other firms across all broadband platforms (cable, wireline, satellite and wireless), all of which will produce significant public interest benefits. The Commission therefore should approve the transactions without undue delay.

#### **I. DEMAND FOR ROBUST FIXED AND MOBILE NETWORKS IS CONTINUING TO EXPLODE, CREATING A DYNAMIC MARKETPLACE**

As the Commission is well aware, the sheer volume of data traversing the Internet continues to grow at unprecedented rates. Cisco's recent research confirms that "[g]lobal IP traffic has increased more than fivefold in the past 5 years"<sup>3</sup> and forecasts that it "will increase threefold over the next 5 years."<sup>4</sup> To meet the demand, multiple players in the broadband market are making fast-paced investments, resulting in exciting new products and services being brought to consumers. As the Commission recently acknowledged in its Open Internet proceeding, "[w]hole new product markets have blossomed in recent years, and the market for applications has both diversified and exploded."<sup>5</sup>

From just a few of the forecasts from Cisco's recently released Visual Networking Index, one can see that these trends are not abating:

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<sup>3</sup> Consistent with these findings, CTIA reports that wireless data traffic jumped from 388 billion MBs in 2010 to 1,468 billion MBs in 2012. CTIA, *Background on CTIA's Semi-Annual Wireless Industry Survey Results: December 1985-December 2012*, at 9 (2013), available at [http://files.ctia.org/pdf/CTIA-Survey\\_YE\\_2012\\_Graphics-FINAL.pdf](http://files.ctia.org/pdf/CTIA-Survey_YE_2012_Graphics-FINAL.pdf).

<sup>4</sup> Cisco, "The Zettabyte Era: Trends and Analysis," at 1 (June 10, 2014) ("Zettabyte White Paper"), available at [http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI\\_Hyperconnectivity\\_WP.html](http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI_Hyperconnectivity_WP.html).

<sup>5</sup> *Protecting and Promoting the Open Internet*, Notice of Proposed Rulemaking, 29 FCC Rcd 5561, 5571 ¶ 31 (2014).

- Global Internet traffic in 2018 will be equivalent to 64 times the volume of the entire global Internet in 2005, and per capita Internet traffic will nearly triple globally, reaching 14 gigabytes (GB) by 2018, up from 5 GB in 2013.
- Global mobile data traffic will increase 11-fold from 2013 to 2018 (three times faster than fixed IP traffic), growing to 12 percent of total IP traffic by 2018 (up from 3 percent in 2013).
- Fixed broadband connection speed will increase nearly threefold, from 16 Mbps in 2013 to 42 Mbps by 2018.
- Globally, IP video will represent 79 percent of all traffic by 2018, up from 66 percent in 2013.<sup>6</sup>

The proliferation of tablets, smartphones, laptops and a growing array of other Internet-enabled devices is increasingly driving the trend of connectivity to the Internet through wireless technologies. The “Internet of Everything,” with billions of connected devices providing a stream of real-time data for analysis, decision and action, will significantly depend upon wireless connectivity. Wi-Fi is on pace to soon become the most prevalent vehicle for Internet connectivity in the United States and around the globe, and Cisco is proud to have been a global leader in the manufacture of products based on the IEEE 802.11 family of standards for unlicensed wireless local area network devices, developing a range of wireless access points, controllers, antennas and integrated management tools that meet the unique needs of the enterprise and service provider segments of the marketplace.

To address the public’s growing demand for Wi-Fi connectivity, industry has incorporated Wi-Fi capabilities into an increasingly wide range of devices, aggressively deploying new public hotspots, and developed the fifth generation IEEE 802.11 Wi-Fi standard (802.11ac) to maximize the speed and efficiency of the Wi-Fi hotspot constellation.

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<sup>6</sup> See Cisco Visual Networking Index: Forecast and Methodology, 2013–2018 (June 10, 2014), available at [http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white\\_paper\\_c11-481360.html](http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.html).

The high level of capital investments made by America's broadband network providers over the past several years has made the U.S. the worldwide leader in broadband innovation.<sup>7</sup> To maintain this position, and to meet the global demands of the future, more and more investment and innovation will be needed.

## **II. COMCAST HAS PROVEN ITS LEADERSHIP IN INNOVATION BY PROVIDING HIGH-QUALITY, CUTTING-EDGE SERVICES**

Cisco witnessed first-hand Comcast's early recognition of the trends in broadband demand and its move to become a leader in innovation. Comcast demonstrated a commitment to improving its customers' experiences as broadband, advanced video, and voice and business consumers by investing tens of billions of dollars to upgrade its networks, installing a fiber optic infrastructure to support its services. Comcast already has implemented an all-digital platform across its systems.

Comcast is continuing to roll out cutting-edge services with its next-generation entertainment operating system, the X1 platform. It has deployed DOCSIS 3.0 to virtually 100 percent of its broadband footprint, and has increased its broadband speeds every year for the past 12 years.<sup>8</sup> Comcast's Xfinity Internet native IPv6 deployment has grown to become the world's

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<sup>7</sup> According to recent analyses, U.S. broadband network investments totaled roughly \$68 billion (or about \$590 per U.S. household) in 2012 alone: the wireline industry invested nearly \$25 billion, the cable industry spent approximately \$13 billion, and mobile carriers spent over \$30 billion upgrading wireless networks. See Patrick Brogan, *Updated Capital Spending Data Show Rising Broadband Investment in Nation's Information Infrastructure*, USTelecom (Nov. 4, 2013), available at <http://www.ustelecom.org/news/research-briefs/updated-capital-spending-data-show-rising-broadband-investment-nations-informat>; National Cable & Telecommunications Association, Public Policy, *Setting the Record Straight on Broadband Investment* (May 13, 2014), available at <https://www.ncta.com/platform/public-policy/setting-the-record-straight-on-broadband-investment/>; CTIA, Annual Wireless Industry Survey, available at <http://www.ctia.org/your-wireless-life/how-wireless-works/annual-wireless-industry-survey>.

<sup>8</sup> See Comcast-TWC Public Interest Statement, MB Docket No. 14-57 (filed April 8, 2014), at 9-10 ("Comcast-TWC PIS"). Comcast customers benefit from its early and continued investment in DOCSIS

largest, as measured by the Internet Society,<sup>9</sup> and Comcast has indicated its readiness to implement the next-generation DOCSIS 3.1 standard, further cementing its position as the industry leader in innovation.<sup>10</sup>

Comcast's dedication to innovation also is evident in its efforts to expand Wi-Fi connectivity. The company led all broadband providers in deploying in-home Wi-Fi gateways that provide customers with faster performance from their home wireless networks, but it also has focused on out-of-home Wi-Fi hotspot deployment, placing Xfinity Wi-Fi hotspots in shopping and transportation centers, parks, sporting venues, beaches and boardwalks across the country.<sup>11</sup> Other cable companies also have built Wi-Fi access points in their service areas, and together these companies have created the CableWiFi® network so that customers of any of these companies can access the Wi-Fi network of any other participating company.

Led by post-transaction Comcast, accelerated deployment of Wi-Fi will drive the introduction of new services in the new unlicensed spectrum made available at 5 GHz, leading to more efficient use of that spectrum and significant consumer welfare gains. And the availability of ubiquitous and reliable Wi-Fi provides important benefits in public safety, as was seen in the aftermath of the Boston Marathon bombing.<sup>12</sup>

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3.0 technology, its network capacity management, its focus on network and service reliability, and its continual upgrading of Comcast-provided customer equipment.

<sup>9</sup> See <http://www.worldipv6launch.org/measurements/>.

<sup>10</sup> See Comcast-TWC PIS at 2.

<sup>11</sup> Comcast plans to reach eight million Xfinity Wi-Fi hotspots by the end of the year, including throughout 19 of the nation's 30 largest cities, including Boston, Chicago, Houston, Philadelphia, San Francisco, Seattle and Washington D.C. See *Comcast to Reach Eight Million Xfinity WiFi Hotspots in 2014*, Comcast Press Release (April 30, 2014), available at <http://corporate.comcast.com/news-information/news-feed/comcast-to-reach-8-million-xfinity-wifi-hotspots-in-2014>.

<sup>12</sup> After the bombing, when cellular networks could not handle the high volume of traffic, Comcast opened its hotspot network to anyone with a Wi-Fi-enabled device so that they could communicate with family and friends. Boston public safety officials credit this with helping them maintain order in the

Comcast now provides voice service to over 10 million customers, and offers innovative voice services like Voice 2go on the Xfinity Connect App (which provides unlimited talk and text to customers on their mobile devices), Universal Caller ID (which identifies a caller on a customer's TV, compute, or mobile device), and Readable Voicemail (which allows voicemail to be read over email). On the enterprise front, Comcast has focused on small- and medium-sized businesses and offers broadband, voice and video services, website hosting, Ethernet services, and cloud-based solutions like data backup, security, and online storage. Comcast also is active in the wholesale business market, offering cellular backhaul services that allow carriers to more efficiently manage their network bandwidth.

Comcast is one of the most advanced and innovative users of Internet technologies in the world. Comcast was among the first global customers to deploy our highest capacity Internet routing and optical technologies, and was the first to test 1Tb/s links. Comcast and Cisco are jointly investing in startup ventures and research pursuing fundamental advances in optical innovation to enable further dramatic Internet capacity growth. Together we are collaborating across the global Internet community to accelerate and deploy IPv6 advances that are fundamental to scale the number of wired, wireless, and mobile devices in our connected lives. IPv6 is fundamental to unleash the "Internet of Everything" innovation revolution. Comcast is also contributing to the open software community through support of innovation and advances in cloud platform and Internet software technologies. With Comcast, we are advancing Internet connectivity to small businesses, schools, libraries, colleges and universities, and underserved

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aftermath of the bombing. *See* Presentations of Don Denning, Chief Information Officer for Public Safety, City of Boston, and Scott Wilder, Director of Technology, Brookline Police Department, Wireless Research and Development Workshop IV (Apr. 23, 2013).

neighborhoods across the country. We believe the Comcast acquisition of Time Warner Cable will accelerate the national deployment and benefits of these advances in Internet infrastructure.

### **III. THE PROPOSED TRANSACTIONS WILL ACCELERATE MORE ROBUST FIXED AND MOBILE NETWORKS**

With the proposed transactions, Comcast would of course gain greater scale, enabling it to increase its investments in cutting-edge technologies and services and spread the costs across a larger customer base. In addition, the transactions would allow Comcast and Charter to better rationalize their geographic footprints, producing efficiencies that will provide more room for investment and innovation. And perhaps most importantly, the transactions will spur Comcast's competitors across multiple platforms to invest and innovate more to improve their own voice, video and broadband services, thereby fostering a virtuous cycle of innovation.<sup>13</sup>

The Commission recognized this dynamic its 2010 *Open Internet Order* when it described “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.”<sup>14</sup> The Commission explained that novel, improved, or lower-cost offerings spur end user demand, thereby “encourag[ing] broadband providers to expand their networks and invest in new broadband technologies. ... These network improvements generate new opportunities for edge providers, spurring them to innovate further.”<sup>15</sup>

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<sup>13</sup> Comcast competitors already have stated the effect that the merger will have on their spending. *See, e.g.,* Randall Stephenson, Chairman & CEO, AT&T, Inc., Morgan Stanley Technology, Media & Telecom Conference, Tr. at 3 (March 6, 2014) (stating that the Comcast-TWC merger would spur AT&T's build-out of both wired and wireless broadband facilities).

<sup>14</sup> *Preserving the Open Internet; Broadband Industry Practices*, Report and Order, 25 FCC Rcd 17905 ¶ 14 (2010).

<sup>15</sup> *Id.*

Comcast's early investment in fiber optic infrastructure and its speedy upgrade to an all-digital platform spurred its competitors to invest and innovate more rapidly. At least in part because of Comcast's innovation leadership, other players upgraded their networks (*e.g.*, AT&T with U-Verse with GigaPower, and Verizon with FiOS) or established entirely new ones (Google with Google Fiber). On top of all this, Internet and device companies like Amazon and Apple are competing more aggressively in the increasingly mobile and global online video marketplace. Comcast's history of leadership in innovation can leave no doubt that the company sets a high standard for its competitors to meet.

We expect that the same phenomenon will play out if the proposed transactions are approved. Comcast has committed to accelerating the digital upgrade of the current TWC systems, and the combined company will have the geographic reach, economies of scale, and customer density needed to massively expand Wi-Fi hotspot deployment.

Innovation in all areas of the broadband ecosystem – and across multiple platforms – must accelerate in order to keep pace with the expected future demand for fixed and mobile broadband services and applications. In a world in which consumers increasingly demand connectivity everywhere (with mobile broadband usage growing faster than fixed broadband usage), the Commission should recognize that the broadband marketplace is not static but is constantly evolving, and it should take actions to keep the American innovation engine moving.

Cisco is confident that the proposed transactions will spur broadband investment and innovation by Comcast and by others across multiple platforms, and that the benefits will be felt not only by consumers who will receive better services, but also throughout the American economy, which will enjoy enhanced productivity.

#### **IV. THE COMMISSION SHOULD ALLOW MARKETS TO FLEXIBLY ADAPT TO FAST-EVOLVING TECHNOLOGIES AND BUSINESS MODELS**

New technologies and new business models will continue to be developed constantly, with multiple players – network and edge providers as well as application developers – across the full array of wired and wireless platforms offering new and innovative products, services and applications that require existing market players to adapt quickly in the marketplace. These fast-paced technical advances and innovation continue to bring exciting new products and services to consumers.

This is inevitable, and it is as it should be. Players in the media and communications industry today do not coexist in silos as they once did; today's industry is multifaceted and intertwined, with national and global players competing as never before. Cable providers have lost market share to DBS and telco providers in recent years, and new competition in the online video market – from strong players like Netflix, Apple, Google, Amazon, Hulu, Sony, and others – is gaining steam. The proposed transactions are a natural, market-driven attempt to meet the challenges of this increasingly dynamic and highly competitive environment. The Commission's proper role is to maintain a flexible regulatory environment that will allow markets to respond to changing competitive circumstances, thereby encouraging private investment and innovation. In this way, the Commission will foster, and indeed maximize, the dynamism of the broadband ecosystem and best serve the interests of consumers.

The extraordinary level of capital investment by network providers has made the United States the world leader in broadband innovation, placing it at the epicenter of the global broadband economy. Approval of the proposed transactions will help accelerate broadband capital investment and will help us maintain our leadership in the world.

## V. CONCLUSION

Changes in the competitive landscape of the broadband marketplace are happening more and more quickly, as companies with national and even global footprints are offering new competition in new ways to traditional network providers like Comcast and TWC. Cisco believes that the proposed transactions will better position the industry to meet the challenges of the future through increased investment and innovation, and that it will spur more innovation across the broadband ecosystem. Commission approval is therefore consistent with the statutory policy set forth by Congress to “preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation.”<sup>16</sup> Accordingly, the Commission should promptly approve the proposed transactions.

Respectfully submitted,

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<sup>16</sup> 47 U.S.C. §§ 230(b)(2).