

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

In the Matter of)	
)	
Applications of)	MB Docket No. 15-149
Charter Communications, Inc.,)	
Time Warner Cable Inc., and)	
Advance/Newhouse Partnership)	
For Consent to Assign or Transfer Control of)	
Licenses and Authorizations)	

COMMENTS OF CISCO SYSTEMS, INC.

Cisco Systems, Inc. (“Cisco”) respectfully submits these comments in support of the transaction proposed by Charter Communications, Inc. (“Charter”), Time Warner Cable Inc. (“TWC”), and Advance/Newhouse Partnership (“Advance/Newhouse”) in the above-referenced proceeding.¹

BACKGROUND AND SUMMARY

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. It is also a leader in the development of managed Internet Protocol (“IP”) products and solutions used by individuals and enterprises throughout the U.S. and the world. In that capacity, Cisco has worked closely with Charter, TWC, and Advance/Newhouse’s subsidiary, Bright House Networks, LLC (“Bright House”), and it has witnessed first-hand the innovative vision that these companies share. Cisco thus has a unique—and well-informed—perspective on the proposed transaction.

¹ See *Commission Seeks Comment on Applications of Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership for Consent to Transfer Control of Licenses and Authorizations*, Public Notice, DA 15-1010, MB Docket No. 15-149 (rel. Sept. 11, 2015).

As discussed below, based on this experience, Cisco is confident that this transaction will enhance Charter's ability to innovate and improve its network and services within its current footprint and in the acquired systems, allowing it to keep pace with the exploding growth of Internet traffic and to fuel the virtuous cycle that will drive the broadband economy. The combination of Charter's innovative drive, favorable interconnection policies, and customer-friendly practices, along with improved efficiencies, will encourage the use of broadband in general and online video distributors ("OVDs") in particular, thus generating significant public interest benefits and advancing some of the Commission's key policy objectives. The Commission should approve the proposed transaction promptly.

DISCUSSION

I. CHARTER IS WELL POSITIONED TO RESPOND TO THE GROWTH OF INTERNET TRAFFIC, PARTICULARLY FROM ONLINE VIDEO DISTRIBUTION

The volume of data traversing the Internet continues to increase at unprecedented rates. While that trend is uncontested and well documented, the figures continue to amaze. Cisco regularly monitors and forecasts trends in Internet traffic through its ongoing research initiative, the Cisco Visual Networking Index™ ("Cisco VNI™"). Some representative findings from Cisco's most recent report demonstrate the continued rapid growth of Internet traffic:

- Global IP traffic has increased more than fivefold in the past 5 years, and will increase nearly threefold over the next 5 years.
- Global Internet traffic in 2019 will be equivalent to 64 times the volume of the entire global Internet in 2005.
- The number of devices connected to IP networks will be three times as high as the global population in 2019. That is, there will be three networked devices per capita by 2019, up from less than two networked devices per capita in 2014.

- Broadband speeds will double by 2019. Specifically, by 2019, global fixed broadband speeds will reach 43 Mbps, up from 20 Mbps in 2014.²

This growth in overall Internet traffic is due in large part to the explosion of OVDs.

Although the marketplace for Internet-based video distribution remains relatively nascent, it is evolving rapidly, with new entrants and established providers exploring a variety of possible business models. Notwithstanding that flux, video content is now a dominant force on the Internet:

- It would take an individual over 5 million years to watch the amount of video that will cross global IP networks each month in 2019. Every second, nearly 1 million minutes of video content will cross the network by 2019.
- Globally, consumer Internet video traffic will be 80 percent of all consumer Internet traffic in 2019, up from 64 percent in 2014 (excluding video exchanged through peer-to-peer (“P2P”) file sharing). The sum of all forms of video (television, video on demand, Internet, and P2P) will be in the range of 80 to 90 percent of global consumer traffic by 2019.
- Consumer video-on-demand (“VOD”) traffic will double by 2019. HD will be 70 percent of IP VOD traffic in 2019, up from 59 percent in 2014.
- By 2019, the gigabyte equivalent of all movies ever made will cross the global Internet every 2 minutes.
- Globally, IP traffic will reach 511 Tbps in 2019, the equivalent of 142 million people streaming Internet HD video simultaneously, all day, every day.
- Global IP traffic in 2019 will be equivalent to 504 billion DVDs per year, 42 billion DVDs per month, or 58 million DVDs per hour.³

This traffic traverses a range of different platforms—cable, wireless, wireline, satellite—that, to varying degrees, frequently incorporate networking equipment supplied by Cisco. As a

² See Cisco Visual Networking Index: Forecast and Methodology, 2014–2019, at 1-2 (May 27, 2015), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf.

³ *Id.* at 2; Cisco, The Zettabyte Era: Trends and Analysis, at 4 (May 2015), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI_Hyperconnectivity_WP.pdf.

result, Cisco is quite familiar both with the demands that these increasing traffic volumes place on networks and with the solutions that will be needed to accommodate further growth. In order to facilitate greater use of the Internet going forward, network and service providers will be expected to innovate aggressively to produce the cutting-edge services that consumers have come to expect and on which they depend. They will face constant pressure to invest in infrastructure to ensure that broadband networks are able to satisfy an ever-growing need for bandwidth. And they will need to develop and adhere to customer-friendly policies and practices that allow consumers the freedom to take advantage of this technology. For the reasons discussed below, the proposed transaction will enable Charter to meet each of these directives more efficiently, more effectively, and more expansively than would otherwise be the case.

II. CHARTER IS A DEMONSTRATED LEADER IN INNOVATION AND THE DELIVERY OF A POSITIVE CUSTOMER EXPERIENCE

Charter already has a strong track record with respect to satisfying the relentless demand for higher-quality services and greater bandwidth. Cisco not only has observed Charter's motivation to continually improve the customer experience, but it has been a proud partner in those efforts.

Earlier this year, Cisco worked with Charter to complete its conversion to an all-digital network in 99 percent of its current footprint, in order to support Charter's offer of minimum broadband speeds of 60 Mbps or 100 Mbps throughout almost all of its service areas.⁴ Currently, Cisco is actively working with Charter on a number of other initiatives as well. It is supplying key technologies for Charter's next-generation video solution, known as "Worldbox"—including

⁴ Charter Communications, Inc., Time Warner Cable Inc., and Advance/Newhouse Partnership Public Interest Statement, MB Docket No. 15-149, at 21 (filed June 25, 2015) ("PIS") (describing Charter's broadband speeds).

a downloadable security solution and digital rights management.⁵ Cisco will supply some of Charter's Worldbox volume and will continue to supply CableCARD boxes until Charter migrates all current and acquired systems to the downloadable security solution. These devices also will be offered to video customers in the acquired systems—one of the many merger-specific benefits of the proposed transaction.⁶

While Worldbox would offer enormous benefits to video customers, Cisco also is directly involved in other Charter initiatives that will promote more expansive Internet usage in general and the growth of OVDs in particular. For instance, Cisco currently is working with Charter on a remote DVR trial for IP video to the home, and on backbone and regional access network upgrades to enhance Charter's ability to support streamed video traffic through its network to the customer premises. In addition, Cisco is assisting Charter to enable IP distribution through Wi-Fi in the home and exploring ways to expand that capability outside the home. Again, the proposed transaction would increase the number of consumers who could take advantage of this technological progress. Moreover, Cisco's involvement in these initiatives, some of which are specific to OVD distribution, underscore Charter's observation that, post-transaction, it will have every incentive to promote OVDs and no reason to disadvantage them.⁷

Cisco has longstanding relationships with the other transaction parties as well and can vouch for their shared commitment to innovation. Cisco has long supplied TWC with consumer

⁵ Cisco Systems, Press Release, *Charter and Cisco Enter Agreement in Support of Charter's Breakthrough Next-Gen Video Solution*, Jan. 7, 2015, <http://newsroom.cisco.com/press-release-content?articleId=1570038>; see also, e.g., Jeff Baumgartner, *Charter Unveils Its "Worldbox,"* MULTICHANNEL NEWS, Jan. 6, 2015, <http://www.multichannel.com/news/technology/charter-unveils-its-worldbox/386685>.

⁶ PIS at 8, 25-26.

⁷ See, e.g., *id.* at 6, 23 n.56.

devices (including set-top boxes and digital adapters) and networking equipment, including equipment to support TWC's deployment of Wi-Fi access points throughout its footprint.⁸ Cisco also has partnered with Bright House, which the parties' application notes was the first cable operator in the United States to achieve a Cisco Master Service Provider Certification for delivery of the Cisco Cloud and Managed Service Program.⁹ This certification, earned through a rigorous third-party audit process, recognizes Bright House's capabilities to sell and deliver cloud and managed services, and rewards Bright House for its expertise and investments in creating, selling, and delivering cloud and managed services. Bright House also has deployed the Cisco Network Convergence System, a network fabric family designed to serve as the foundation of a massively scalable, smarter, and more adaptable Internet.¹⁰

In short, Cisco can attest to Charter's innovative drive and to the benefits it is poised to deliver to customers in Charter's current footprint and beyond.

III. THE PROPOSED TRANSACTION WILL ACCELERATE THE DEPLOYMENT OF MORE ROBUST BROADBAND NETWORKS

The proposed transaction will make it far easier for Charter to pursue its mission of improving the user experience. Charter's increased scale as a result of its merger with TWC and Bright House will produce efficiencies for all parts of the supply chain. Post-transaction Charter

⁸ Mike Robuck, *Time Warner Cable enables Hotspot 2.0 across Wi-Fi network*, CED MAGAZINE, Apr. 17, 2014, <http://www.cedmagazine.com/news/2014/04/time-warner-cable-enables-hotspot-20-across-wi-fi-network>. Cisco has 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.

⁹ PIS at 13, 38.

¹⁰ Cisco Systems, Press Release, *Bright House Networks Deploys Cisco Network Convergence System to Offer Cloud-Based Business and Residential Services* (Apr. 17, 2014), <http://newsroom.cisco.com/press-release-content?articleId=1408016>.

will be a more economical partner in innovation—rather than collaborating separately with three separate companies as Cisco does today, Cisco will be in a position to unify its efforts in a manner that will benefit consumers, by making new innovations more widely available at less cost. The proposed transaction also will allow Charter, TWC, and Bright House to rationalize their geographic footprints, producing further efficiencies that will further facilitate investment and innovation.

It warrants emphasis that, in leveraging its larger scale and other merger-related synergies, Charter will build on an already solid foundation due to its work to date. Charter already is 99 percent all-digital—a milestone that Cisco assisted it to reach, as noted above—enabling it to increase broadband speeds dramatically. Building on that success, Charter plans to accelerate the digitization of the TWC and Bright House service areas, permitting higher broadband speeds as well as more high-definition and on-demand channels and thereby ensuring an even more robust platform.

The result of such advancements will be a robust broadband platform that drives innovation by participants from throughout the ecosystem, whether they are OVDs, device manufacturers, programmers, or other contributors—all of which benefit from the increased broadband use that will result from the proposed transaction.

IV. CHARTER'S INTERCONNECTION AND CONSUMER POLICIES WILL FACILITATE AND ACCOMMODATE THE CONTINUED GROWTH OF INTERNET AND ONLINE VIDEO TRAFFIC

While Charter's technological innovations are noteworthy, its contributions to a positive broadband experience extend beyond network and service upgrades to the policies and practices it has put in place to ensure the seamless flow of Internet traffic. Charter's merger-specific commitment to facilitate interconnection—not only through its ongoing investments in interconnection capacity, but also through its pledge to continue to engage in reasonable and

nondiscriminatory interconnection (and to submit any interconnection disputes to the Commission for resolution)—will allow customers to continue accessing content and services as they wish, notwithstanding the amount of data involved. That, in turn, will provide a stable platform on which OVDs and edge providers may thrive.

Charter’s customer-friendly practices nicely complement its approach to interconnection, as those practices will afford subscribers substantial freedom in terms of what they do online and preserve their ability to respond appropriately if they face unwanted restrictions. Charter’s commitment to promoting a free and open Internet is representative of its desire to empower consumers by ensuring that they can reap the benefits of Charter’s broadband investments and innovation and by protecting them against the prospect, however remote in practice, of being unable to access the content and services of their choice.¹¹ When such policies are considered in conjunction with the technological advances referenced above, it is difficult to imagine an environment that would be more hospitable to the growth of OVDs and edge providers. But that is exactly the environment that the proposed transaction would help to foster.

¹¹ PIS at 3.

CONCLUSION

Cisco is confident that the proposed transaction will spur broadband innovation and investment by Charter and others, including the OVDs that are at a critical juncture in their development. Because of these and other public interest benefits described more fully in the parties' application, the Commission should approve the proposed transaction without delay.

Respectfully submitted,

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