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REDACTED – FOR PUBLIC INSPECTION

October 23, 2014

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20544

Re: ***Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo for Consent to Assign or Transfer Control of Licenses and Authorizations,*** **MB Docket No. 14-57**
REDACTED – FOR PUBLIC INSPECTION

Dear Ms. Dortch:

Comcast Corporation ("Comcast") hereby submits its final narrative answers and exhibits responsive to the Commission's August 21, 2014 Information and Data Request (the "Request").[1] These answers and exhibits provide revised and supplemental information responsive to certain Requests pursuant to the Media Bureau's October 3, 2014 Public Notice,[2] as clarified by subsequent discussions between representatives of Comcast and the Commission.[3] Specifically, Commission staff requested additional information regarding the following Requests:

- **Request 2(h)** – Staff requested that Comcast provide internal estimates of facilities-based overbuilder overlap going back to 2009 and requested reports or documents with overbuilder estimates where available. Comcast has provided the requested information to supplement its initial responses.

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1 *See* Letter from William T. Lake, Chief, Media Bureau, to Kathryn A. Zachem, Comcast Corporation, MB Docket No. 14-57 (Aug. 21, 2014).

2 *See Commission Announces Extension of Time to File Replies to Responses and Oppositions for its Review of Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo to Assign and Transfer Control of FCC Licenses and Other Authorizations*, Public Notice, MB Docket No. 14-57, DA 14-1446, at 2 n.7 (Oct. 3, 2014).

3 *See* Letter from Kathryn A. Zachem, Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 14-57 (Oct. 14, 2014); Letter from Kathryn A. Zachem, Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 14-57 (Oct. 9, 2014).

- **Request 12** – Staff requested that Comcast confirm that its initial responses reflected Comcast's own perspective and not that of the other applicants in this proceeding. Staff further requested that Comcast provide various additional information about actual and potential competitors for each of the relevant services. Comcast has provided a revised response to this Request in place of its initial response.

- **Request 13** – Staff requested that Comcast confirm that its initial responses reflected Comcast's own perspective and not that of the other applicants in this proceeding. Staff further requested that Comcast identify all requirements for entry into the provision of each relevant service and an estimate of the time required to meet each requirement. Comcast has provided a revised response to this Request in place of its initial response.

- **Request 15** – Staff requested that Comcast confirm that its initial responses reflected Comcast's own perspective and not that of the other applicants in this proceeding. Comcast has supplemented its initial response with the requested confirmation.

- **Request 19** – Staff requested that Comcast provide or indicate the location within Comcast's initial responses of certain annual data. Comcast has supplemented its initial response with the requested information.

- **Request 51 –** Staff requested that Comcast provide lists of conditions from the Comcast-NBCUniversal transaction that will and will not apply to the systems acquired by Comcast in this transaction, subject to the need for further clarification by the Commission. Comcast has provided a revised response to this Request in place of its initial response.

- **Request 52 –** Staff requested that Comcast indicate the conditions listed in response to Request 51 that have become a part of Comcast's "core" business ethics and operations. Comcast has supplemented its initial response with the requested information.

- **Request 59 –** Staff requested supplemental information regarding Comcast's usage based billing trials, including the costs and benefits of this program and its effects on customer behavior. Comcast has supplemented its initial response with the requested information.

- **Request 68 –** Staff requested that Comcast provide a more complete description of the contractual terms offered for its CDN service. Comcast has supplemented its initial response with the requested information.

- **Request 75 –** Staff requested that Comcast provide, to the extent possible, a measurement of how much traffic in a given DMA comes from a particular IP point of presence; staff acknowledged that such measurement may be impossible due to the nature of how the Internet works, but asked for confirmation. Comcast has supplemented its initial response with the requested information.

- **Request 80 –** Staff requested that Comcast provide a timeline for when transaction-related efficiencies, savings, new or improved products, and synergies will be generated and realized by Comcast. Comcast has supplemented its initial response with the requested information.

- **Request 84(a) –** Staff requested that Comcast provide more specifics regarding the timetable for actions necessary to finalize various financial transactions related to the Time Warner Cable merger. Comcast has supplemented its initial response with the requested information.

- **Request 86** – Staff requested that Comcast confirm that no additional economic analyses exist beyond what Comcast has previously provided. Comcast has supplemented its initial response with the requested information.

- **Request 88(b) –** Staff requested that Comcast provide or indicate the location within Comcast's initial responses of the referenced attachments. Comcast has supplemented its initial response with the requested information.

- **Request 89** – Staff requested various formatting revisions to and explanations of spreadsheet exhibits previously provided, and confirmation that all available data has been submitted. Comcast has provided revised versions of exhibits submitted with Comcast's initial responses and has supplemented its initial response with additional information.

Comcast also provides herewith clarifications and additional information with respect to Requests 4 and 8 that Commission staff separately requested. With the submission of this letter and the attached materials, Comcast now has addressed the Request in full.

Comcast submits herewith one copy of the redacted, public version of this filing. The **{{ }}** symbols denote where Highly Confidential Information has been redacted and the **[[ ]]** symbols denote where Confidential Information has been redacted. A Highly Confidential version of this filing, which includes additional, Highly Confidential exhibits, has been submitted to the Office of the Secretary pursuant to the terms of the Modified Joint Protective Order in effect in this proceeding.[4] The Confidential and Highly Confidential versions of this filing will be made available for inspection pursuant to the terms of the Modified Joint Protective Order.

If you have any questions or require further information, please do not hesitate to contact me.

Respectfully submitted,

/s/ Kathryn A. Zachem

Senior Vice President,
Regulatory and State Legislative Affairs
Comcast Corporation

[4] *Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Assign or Transfer Control of Licenses and Authorizations*, Modified Joint Protective Order, MB Docket No. 14-57, DA 14-1464 (Oct. 7, 2014) ("Modified Joint Protective Order"); *see also Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Assign or Transfer Control of Licenses and Authorizations*, Order, MB Docket No. 14-57, DA 14-1463, ¶¶ 11-12 (Oct. 7, 2014).

OCTOBER 23, 2014 SUPPLEMENTAL RESPONSES OF COMCAST CORPORATION TO THE COMMISSION'S INFORMATION AND DATA REQUEST

2. Identify, as of December 31, 2009, December 31, 2010, December 31, 2011, December 31, 2012, December 31, 2013, and June 30, 2014, each cable system owned by, operated by, managed by, or attributed to the Company, and for each cable system identify the nature of the Company's interests, and state and identify the following:

h. any internal estimates of the percentage of homes passed that are overbuilt by any facilities-based competing provider of MVPD service and Internet access service separately for each such competing provider;

SUPPLEMENTAL RESPONSE:

2(h):

Supplemental information and data responsive to this subpart have been provided in machine-readable Excel spreadsheet format as Exhibit 2.10 (Revised). This supplemental Exhibit 2.10 provides the Company's internal historical estimates of the overbuild of Comcast's current footprint (and current number of homes passed) by AT&T and Verizon fiber-delivered Internet services for each of the requested dates. While the *percentage* of homes passed in Comcast's footprint reflects Comcast's best estimate, the *number* of homes passed by AT&T and Verizon is likely to be overstated as it reflects the percentage share of Comcast's current homes passed by zip code, which is typically higher today than in earlier periods. In addition, Comcast refers the FCC to Exhibit 2.6 and Exhibit 2.7, which were provided in response to subpart (g) of this Request and reflect the presence of video and Internet providers by service technology in zip codes in which Comcast operates (although Comcast notes that presence in a particular zip code does not necessarily indicate that such a provider has completely overbuilt Comcast's footprint).

4. For each zip code identified in Request 2(e) and for the Company as a whole, separately for residential subscribers and other subscribers, and for each month for the period beginning January, 2009, to the present, state and produce in CSV or Excel format:

a. the number of customer locations to which cable services are available, separately for residential customer locations and other customer locations, and the penetration rate;

b. the number of standalone services and bundled services subscribers as of the last day of the month;

c. the average revenue per subscriber in the month for standalone services and bundled services;

d. the number of subscribers who first began subscribing to any of the Company's standalone services and bundled services in the specified month who were not subscribers to any of the Company's cable services in the prior month;

e. the average revenue per new subscriber described in subpart (d) to standalone services and bundled services, and that churned from a competing provider, separately for each competing provider;

f. the number of subscribers discontinuing all subscriptions to the Company's cable services;

g. the average revenue per departing subscriber described in subpart (f) for standalone services and bundled services, and the number of subscribers that churned to competing provider, separately for each competing provider;

h. the number of the Company's current subscribers who first began subscribing to any of the Company's other standalone services or bundled services in the specified month;

i. the number of subscribers discontinuing their subscription to one or more of the Company's standalone services or bundled services, but who remain a subscriber to one or more of the Company's cable services at the end of the specified month;

j. the churn rate for standalone services and bundled services;

k. the per-subscriber acquisition cost or cost per gross addition for standalone services and bundled services and an explanation of how these values were calculated;

l. the cost per subscriber to the Company's MVPD service of acquiring video programming distribution rights and an explanation of how these values were calculated;

m. the cost per subscriber to the Company's MVPD service of acquiring VOD and PPV distribution rights and an explanation of how these values were calculated;

n. the average gross and net advertising revenue per subscriber to the Company's MVPD service and an explanation of how these values were calculated;

o. other variable costs per subscriber for standalone services and bundled services and an explanation of how these values were calculated; and

p. the value of each additional subscriber to the Company for standalone services and bundled services and an explanation of how these values were calculated.

SUPPLEMENTAL RESPONSE:

Comcast clarifies that the average revenue per user ("ARPU") data reflected in Exhibits 4.3(e)-(f) **[[ ]]**. Comcast also clarifies that with respect to the connect and disconnect data provided to the Commission, a customer who disconnects during the month and later reconnects his or her service the following month or thereafter is **[[ ]]**. If the activity occurs in the same month, however, **[[ ]]**.

Additionally, as requested by Commission staff, Comcast provides primary connects, disconnects, and churn for residential and commercial subscribers by product for each of Comcast's sub-regions in machine-readable Excel spreadsheet format as Exhibits 4.16(a) through 4.18(b). For these exhibits, Comcast provides the following clarification:

The data for new Comcast subscribers by product (i.e., "connects") are provided in separate worksheets as follows: (1) product level new connects are new customers of Comcast that have added the product; (2) product level upgrades are existing Comcast customers that had another product at the beginning of the month and added the product that is being upgraded (e.g., a Comcast customer with an Internet service at the beginning of the month who adds a video service is treated as a video "upgrade"); (3) total connects is the sum of (1) and (2) above. The data are provided by product.

The data for disconnecting subscribers by product are provided in separate worksheets as follows (and is the converse of what is provided and set forth above for connects): (1) product level disconnects are customers who removed the product and are no longer a customer of Comcast at the end of the month; (2) product level "downgrades" are existing Comcast customers that had the product at the beginning of the month and disconnected service for that product during the month but still have another product with Comcast; (3) total disconnects is the sum of (1) and (2) above.

The rate of "churn" has been calculated by dividing the number of subscribers that disconnected service in a given month by the total number of subscribers of that service at the beginning of the same month.

8. As of December 31, 2013, and June 30, 2014, and for each DMA, state and produce in CSV or Excel format:

a. the number of subscribers to the Company's MVPD service;

b. the number of the Company's subscribers who will become subscribers of Comcast's, SpinCo's, and Charter's MVPD service, stated as if the proposed TWC transaction and the proposed divestiture transactions had been consummated as of June 30, 2014;

c. the number of TV households, citing the source of this information and explaining how this number was calculated;

d. the number of Hispanic TV households, citing the source of this information and explaining how this number was calculated;

e. the number of Hispanic households that subscribe to MVPD service, citing the source of this information and explaining how this number was calculated;

f. the number of Hispanic households that subscribe to the Company's MVPD service; and

g. the number of the Company's Hispanic households who will become subscribers of Comcast's, Charter's and SpinCo's MVPD service, stated as if the proposed TWC transaction and the proposed divestiture transactions had been consummated as of June 30, 2014.

In the event that as a result of the proposed divestiture transactions, the assets, Hispanic households and the Hispanic subscribers in a single DMA will be divided between Comcast, Charter and SpinCo, for subparts (b) and (g), allocate the subscribers and Hispanic households to the receiving applicant, and provide an explanation of the methodology used to make the allocation.

CLARIFYING RESPONSE:

Comcast confirms that it provided to the Commission in its September 11, 2014 response to this Request all of the responsive data it has, and, therefore, no additional information is being submitted. Comcast further confirms that it provided internal estimates of Hispanic subscribers to its MVPD service for the periods requested in its September 11, 2014 response to this Request.

12. State the name and address of each person that has entered or attempted to enter into, or exited from, the provision of each relevant service, from January 1, 2009, to the present. For each such person, identify the services it provides or provided; the area in which it provided the services, including whether the person has sold or distributed the relevant service in the United States; and the date of its entry into or exit from the market. For each entrant, state whether the entrant built a new facility, converted assets previously used for another purpose (identifying that purpose), or began using facilities that were already being used for the same purpose.

REVISED RESPONSE:

This response replaces Comcast's initial response and includes more information regarding geographic scope and entry as requested by the FCC. This response to Request 12 represents the view of Comcast, as is the case with all of Comcast's responses to the FCC's Information and Data Request, unless otherwise noted.

Information and data responsive to this request have been provided in machine-readable Excel spreadsheet format as Exhibit 12.

Comcast's response to this request is based on information obtained through reasonable inquiry of knowledgeable employees of the company and from publicly available sources, but does not provide a comprehensive list of all entrants since 2009 in each relevant service. Although Comcast believes the sources on which its response is based to be generally reliable, it cannot fully verify the reliability of information obtained from third-party sources, many of which are self-reported.[1]

Comcast identifies the following companies that have entered or exited the provision of CDN service since 2009: Apple, Inc., Cotendo, Fastly, MaxCDN, Telestra, Deutsche Telekom, Telecom Italia, Level 3, British Telecom, AT&T, KDDI, TATA, CenturyLink, Orange, Telefonica, and Verizon. These companies are listed in Exhibit 12.[2] In general, CDNs face low entry barriers. Most major ISPs offer commercial CDN services along with Internet backbone services such as IP transit. Some ISPs partner with equipment vendors like Cisco, some partner with CDNs like Akamai, while others use their own technology. Comcast's IP CDN was **[[ ]]**.

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[1] Exhibit 12 does not include information that is already provided regarding Comcast-owned programming networks to the extent such information is already provided in response to Request 18.

[2] Comcast also refers the FCC to www.cdnlist.com, which provides an updated list of commercial CDN providers, including telecom or carrier-based CDN providers, and CDN-related vendor acquisitions and closures.

With respect to the geographic areas in which the entrants listed in Exhibit 12 provide service, CDN services are available on a nationwide basis. Comcast is unaware of any attempt to enter the provision of CDN service aside from the entrants mentioned herein and in Exhibit 12.

MVPD services provided by DBS providers are available on a nationwide basis, and the availability of other providers varies depending on the geographic reach of the cable systems deployed by cable operators and telephone companies that provide MVPD services. Information with respect to this geographic reach has been provided in Comcast's response to Request 2 above. Comcast is unaware of any attempt to enter the provision of MVPD service aside from the entrants mentioned herein and in Exhibit 12.

OVD services and other edge services are generally available on a nationwide basis to households that have access to the Internet. Comcast is unaware of any attempt to enter the provision of OVD and Internet Edge services aside from the entrants mentioned herein and in Exhibit 12.

Video programming services are generally available on a nationwide basis; the availability of certain specific video programming services may be regional or local (e.g., regional sports or local news networks). Comcast does not track whether any video programming service has attempted to enter the market and subsequently failed to do so. While Comcast does not reach an agreement with all video programmers that seek carriage, a video programming service that Comcast has not yet decided to carry may well be carried by or in the process of exploring carriage on other MVPDs (for example, Comcast is aware of ongoing efforts by the Back9Network to seek carriage from other MVPDs). A video programming distributor may also attempt entry through an OVD: YouTube, for example, is beginning to offer streaming online networks; a programming service might also decide to enter the market as a standalone OVD entrant such as The Blaze. Finally, a video programming service that has not garnered potential interest from MVPDs might repurpose itself (i.e., choose new content and new branding) and try again. Given the multitude of paths to gaining entry for a video programming service, it is difficult to determine whether any potential entrant has actually "failed" to enter in some manner.

Internet access service provided by mobile wireless or satellite providers are generally available on a nationwide basis, and the availability of other providers varies depending on the geographic reach of the cable and telephone company systems that provide these services. Comcast is unaware of any attempt to enter the provision of Internet access service aside from the entrants mentioned herein and in Exhibit 12.

Internet backbone services are generally available on a nationwide basis. Comcast is unaware of any attempt to enter the provision of Internet backbone service aside from the entrants mentioned herein and in Exhibit 12.

Comcast generally does not maintain information concerning the facilities used by the entities listed in Exhibit 12.

13. Provide a list of possible new entrants into the provision of, or a substitute for, each relevant service, stating why the Company believes each person is a possible entrant or could provide a substitute service, including but not limited to, mobile wireless broadband service, and what steps it has taken toward entry. Submit a list of all requirements for entry into the provision of, or a substitute for, a relevant service and an estimate of the time required to meet each requirement, and provide all documents relating to research and development, planning and design, production requirements, distribution systems, service requirements, patents, licenses, sales and marketing activities, and any necessary governmental and customer approvals for entry in to the provision of each relevant service.

REVISED RESPONSE:

This response replaces Comcast's initial response and includes more information regarding entry and timing as requested by the FCC. This response to Request 13 represents the view of Comcast, as is the case with all of Comcast's responses to the FCC's Information and Data Request, unless otherwise noted. Documents responsive to this request will be produced to the FCC.

Comcast's response to this request is based on information obtained through reasonable inquiry of knowledgeable employees of the company and from publicly available sources, but does not provide a comprehensive list of all possible new entrants or possible substitute services, nor of all requirements and timing variations of meeting them, which vary greatly depending on scope of entry (as discussed in greater detail in response to Request 15). Although Comcast believes the sources on which its response is based to be generally reliable, it cannot fully verify the reliability of information obtained from third-party sources, many of which are self-reported.

A. Video Programming Distribution

1. MVPD

MVPD services are currently provided by cable companies (also known as multiple system operators or "MSOs"), telephone companies, Satellite Master Antenna TV companies, and direct broadcast satellite ("DBS") companies. Entry into the MVPD market generally requires significant fixed-cost investment to build out the physical infrastructure (e.g., fiber-optic cables, satellites) needed to deliver multiple channels of content. Nevertheless, companies continue to make these investments and to launch new MVPD options for consumers. For example, CenturyLink, Inc. recently began offering its own MVPD service ("Prism TV") in select markets and has indicated its intention to expand these offerings. Google, Inc. also has begun offering MVPD service in select markets through its Google Fiber service, and has announced its intention to expand to up to 34 communities in nine metropolitan areas. AT&T has also announced plans to accelerate

expansion of its U-verse MVPD service across its footprint.[3] As discussed below with regard to Internet Access, municipal providers may also continue to enter the video programming distribution market.

Based on the success of AT&T U-verse, Verizon FiOS, and CenturyLink Prism, other telephone companies appear to be particularly well positioned to enter the MVPD market. Following Google's example, other technology companies may decide to enter the MVPD market as well, taking advantage of complementary products, brand recognition, customer relationships, and large cash positions.

Like the costs of entry, which are discussed in greater detail in response to Request 15, the time required for entry as an MVPD is variable and cannot be predicted in the abstract. A new MVPD would need to build or purchase a physical infrastructure, acquire the rights to distribute video programming, and meet often substantial regulatory requirements, in addition to marketing the product. The timing of each of these requirements is variable depending on factors such as the scope of entry (e.g., there are many MVPDs with only one thousand subscribers or fewer, and MVPDs may launch with access to comparatively many or few programming networks) or the manner of entry (e.g., creating a new MVPD versus purchasing existing one). In particular, the amount of time required to build physical infrastructure may vary widely depending on how much the new entrant intends to spend on construction (since the time required for a project is generally inversely proportional to the cost).

2. OVD

The OVD industry continues to grow and evolve, and video content available on the Internet has proliferated from numerous sources.[4] As the FCC noted in a recent report, the OVD industry continues to innovate, and "no single business strategy has emerged as the dominant model."[5] OVDs use various business strategies for offering access to content, including free access supported by advertising, subscription services (both with and without advertising), or on-demand purchases or rentals, with some OVDs offering more than one option.[6] OVDs are also increasingly popular among consumers. One OVD, Netflix, reportedly now has over 39 million U.S. subscribers (over 50 million worldwide),

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[3] Remarks of Randall Stephenson, Chairman & CEO, AT&T Inc., Morgan Stanley Technology, Media & Telecom Conference (Mar. 6, 2014) *available at* http://seekingalpha.com/article/2072813-at-and-ts-ceo-presents-at-morgan-stanley-technology-media-and-telecom-conference-transcript.

[4] *See Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Fifteenth Report, 28 FCC Rcd 10496 ¶ 223 & n.787 (2013) ("*Fifteenth Video Competition Report*") (noting that Sandvine, an Internet network equipment and software company, measured over 28,000 unique websites streaming multiple videos online in the U.S. in a single month during Fall 2011).

[5] *See id.* ¶ 269.

[6] *See id.* ¶ 270.

representing half of all Internet customers in the United States and almost twice as many subscribers as the largest MVPD, Comcast. As a result, Netflix accounted for approximately 34 percent of all peak-period Internet download traffic in North America as of May 2014.[7] Hulu, according to the FCC, is "the major player among advertiser-supported OVDs" and makes available over 1,500 TV shows, 21,000 TV episodes, and 1,700 movies.[8] Additionally, Amazon, Google, and Apple each offer their own robust OVD services.

Like the costs of entry, which are discussed in greater detail in response to Request 15, the time required for entry as an OVD is variable and cannot be predicted in the abstract. Launching an OVD requires providing or creating programming content, aggregating the content, transporting the content to the viewer, providing navigation tools to the viewer, and marketing the service. The timing of each of these steps, like the costs, is variable depending on the manner in which the OVD attempts to accomplish them, and each step necessarily depends on the specific characteristics of the proposed services. For example, an OVD may choose to offer programming it creates itself or may choose to negotiate with existing rights holders, each of which requires different time and initial investments. Moreover, the length of time needed to negotiate with content providers and other parties may vary greatly and involves inherently unknown factors. To the extent that a new entrant wished to offer a relatively simple OVD, for example a website that offered streaming standup comedy acts, such entry could be conducted in a matter of months if not weeks (though it would likely take longer to build awareness of the site). To the extent that a new entrant wished to launch a more complicated site with a more robust programming offering, then the variables mentioned above make it impossible to predict the timing in the abstract. Some entrants, like HBO and CBS, may already have all the content rights in place, and thus their time to entry could be shorter. To some extent, with the growth of online video distribution, there is more of an ecosystem around the service, particularly with technology, that can facilitate some of the entry requirements.

Several companies, inside and outside traditional media, are continuing to experiment with new business models and technology platforms, including business models that reportedly will be offered as a potential substitute for MVPD services. A partial list of possible future entrants in the provision of OVD services includes the following:

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[7] Sandvine, *Global Internet Phenomena Report 1H 2014*, at 6 (2014), *available at* https://www.sandvine.com/downloads/general/global-internet-phenomena/2014/1h-2014-global-internet-phenomena-report.pdf; *see also* Drew Fitzgerald, *Netflix's Share of Internet Traffic Grows*, Wall St. J., May 14, 2014, http://online.wsj.com/news/articles/SB10001424052702304908304579561802483718502. Four other OVD services (YouTube, iTunes, Amazon Video, and Hulu) were listed among the top ten applications driving peak period download traffic in North America as of May 2014. *See* Fitzgerald, *supra*.

[8] *See Fifteenth Video Competition Report* ¶ 271.

a. Start-up OVDs

The most popular OVD today, Netflix, launched as a DVD-by-mail company that evolved its business into an Internet start-up and is now the world's leading Internet television network offering more than a billion hours of TV shows and movies each month. Similarly, Machinima.com was founded in 2000 and now bills itself as "the dominant video entertainment network for young males around the world."[9] In addition to making its videos available through its own website, Machinima serves more than 2 billion monthly video views reaching over 175 million unique viewers each month, and features, among other things, scripted series, original content, and weekly and daily shows, all available through an app on a variety of Internet-connected devices. Other OVDs have had even more modest beginnings. Vimeo, for example, was founded by a group of filmmakers who wanted to share their creative work and personal moments of their lives; it enables consumers to produce their own content and share it with others on the Internet, including by developing "Channels" around common themes such as Documentary Films, Animation, Sports, etc. Given the low barriers of entry to distribution of video on the Internet, start-up OVDs are likely to continue to emerge on an ongoing basis.

b. Consumer Electronics Manufacturers

Consumer electronics manufacturers are potential entrants into the provision of OVD services. These manufacturers can use OVD services to stimulate sales of their consumer electronics or diversify their businesses. Manufacturers may also have strong brand recognition and existing marketing and advertising channels that could provide an advantage in starting a new OVD service. Indeed, multiple consumer electronics manufacturers have launched OVDs in recent years. Apple, Inc., for example, primarily sells computers and other devices but also sells video content through its iTunes service. That service, in turn, drives demand for Apple products, including the Apple TV set-top device. Sony Corp. has launched its own OVD service and is developing original exclusive video programming content for Sony PlayStation consoles.[10] Sony also has announced plans to launch a full MVPD replacement service over the Internet and is actively negotiating carriage contracts with programmers.[11] Similarly, Microsoft offers an OVD service, Xbox Video, available on Xbox devices, mobile devices, and web

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[9] *About Machinima*, Machinima, Inc., https://www.machinima.com/overview/ (last visited Sept. 10, 2014).

[10] *See* Chris O'Brien, *E3: Sony VP talks 'Powers,' its first TV series for PlayStation*, L.A. Times, June 13, 2014, http://www.latimes.com/business/technology/la-fi-tn-sony-vp-talks-powers-its-first-tv-series-for-playstation--20140613-story html.

[11] Andrew Wallenstein, *Sony in Talks for Virtual MSO Service*, Variety, Jan. 3, 2013, http://variety.com/2013/digital/news/sony-in-talks-for-virtual-mso-service-1118064150.

browsers. Microsoft Xbox also supports multiple third-party OVD applications, including HBO GO, Netflix, Amazon Instant Video, and several others. Given the advantages that consumer electronics manufacturers can capitalize on and the success of OVDs launched by similar companies, these consumer electronics manufacturers may decide to expand or evolve their OVD services, and other consumer electronics manufacturers may decide to launch their own OVD services.

c. Video Programming Providers

A video content provider that decides it is in its business interest to do so can create an OVD service by allowing online access to its content, either through its own website or in partnership with an existing online video service. A substantial number of studios, broadcast networks, sports leagues, and programming networks offer content on the Internet or on mobile applications, including Sony, Warner Brothers, Paramount, ABC, CBS, FOX, NBC, ESPN, NBC Sports Network, Fox Sports, the NFL, NHL, NBA, and MLB, among others.[12] Video content providers that currently do not provide such access, and possess the rights to do so, may enter the provision of OVD services by providing such access.[13]

d. Internet Search Engines, Portals, and Social Networking Sites

Potential entrants into the OVD market may include other Internet-based companies such as Internet search engines, portals, and social networking sites. Online video distribution is complementary to these sites' existing users: online video can be used to attract, retain, and more effectively monetize website users. Moreover, Internet-based companies may be able to use existing servers, network infrastructure, and commercial relationships to facilitate storage and distribution of bandwidth-intensive high-definition online video.

Some existing search engines and social networking sites already distribute video content online. Facebook, for example, entered the OVD market in 2011, offering online movie rentals from Warner Brothers, Miramax, and Universal Studios through applications on Facebook.[14] Google, which already owns the largest

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12 *See Fifteenth Video Competition Report* ¶ 224.

13 For example, HBO just recently announced its intention to launch a standalone Internet streaming service in 2015. *See* Emily Steel, *HBO Plans New Streaming Service, with Eye on Cord Cutters*, N.Y. Times, Oct. 15, 2014, http://www.nytimes.com/2014/10/16/business/media/time-warner-chief-to-brief-investors-on-plans-for-growth html. CBS also recently launched an online subscription video service called CBS All Access that includes current and classic programming as well as a live stream of its broadcast network. *See* Joe Flint, *CBS Launches Online Subscription Video Service*, Wall St. J., Oct. 16, 2014, http://online.wsj.com/articles/cbs-launches-online-subscription-video-service-1413465013.

14 *See id.* ¶ 230.

provider of online video in the world, YouTube,[15] launched an Internet-based entertainment store, Google Play, in March 2012, which includes thousands of episodes of television programs, including content from NBCUniversal, ABC Studios, and Sony Pictures.[16] Yahoo! likewise has an OVD service that includes original content and content from multiple video programming networks.[17] New search engines, Internet portals, and social networking sites are likely to emerge that will also launch OVDs to take advantage of the popularity of online video programming.

e. Retail Companies

Online and brick-and-mortar retailers also are current and potential entrants into the OVD market. Retail companies can use competitive advantages such as an established Internet presence, customer bases, and existing retail relationships with content providers and electronics manufacturers to successfully launch a new OVD service. Large retail companies may also have easy access to capital to finance such a venture.

Amazon, for example, is the leading online retail company, but also has a growing online video business. Amazon currently offers streaming and downloadable television programs and movies on a transactional basis through its Amazon Instant Video service and on a subscription basis through its Prime Instant Video Service. Amazon also has signed a series of agreements with HBO and other programmers for prior seasons of popular TV shows. Amazon recently launched the Amazon Fire TV set-top box, which includes multiple OVD applications in addition to Amazon Instant Video, and also sells a tablet device (the Kindle Fire) that allows for mobile viewing of HD video (either streamed in real time or downloaded to the device).

Similarly, Wal-Mart, primarily a brick-and-mortar consumer goods retailer, owns the OVD Vudu and makes Vudu available to electronics manufacturers to integrate into their products. Best Buy, with its nearly 2,000 retail locations, also has an OVD service, CinemaNow, which allows customers to rent or purchase TV or movie programming.

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15 *See comScore Releases June 2014 U.S. Online Video Rankings*, comScore, Inc. (July 21, 2014), http://www.comscore.com/Insights/Market-Rankings/comScore-Releases-June-2014-US-Online-Video-Rankings.

16 *See Fifteenth Video Competition Report* ¶ 235; *Google play*, Google, https://play.google.com/store (last visited Sept. 10, 2014).

17 *See Fifteenth Video Competition Report* ¶ 229.

f. MVPDs

Cable operators and direct broadcast satellite companies can each offer their own over-the-top services.[18] MVPDs already maintain a presence on the Internet, and many already provide interactive online portals that allow their subscribers to view programming over-the-top or to schedule programs for recording on a digital video recorder ("DVR"), among other functions.

Indeed, several MVPDs, including Verizon and DirecTV, already have begun to offer, or announced plans to offer, such services. For example, earlier this year, Verizon purchased an online video streaming service from Intel that purportedly will enable it to provide a competitive MVPD substitute service over the Internet, including over wireless broadband networks.[19] Similarly, in 2012, DISH Network launched DISHWorld, which offers international movie content that customers can stream on various devices,[20] and more recently, announced that it would offer a new service allowing subscribers to stream live and on-demand content from A&E and Walt Disney networks such as ABC and ESPN over the Internet.[21] DISH is also reported to be considering acquiring T-Mobile, which could give DISH "a national wireless network over which it could deliver mobile video" and "challenge conventional cable television."[22] These recent trends suggest that MVPDs that do not already offer an over-the-top service, but possess online programming distribution rights, are potential candidates for entry into the provision of OVD service. Indeed, IPTV services such as Sky Angel now offer over-the-top access to various cable networks, similar to MVPDs.

In this manner, OVDs and MVPDs can, in some regards, be viewed as providing either complementary or substitute services.

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18 *See id.* ¶ 239 (noting that "[s]everal MVPDs offer services to non-subscribers").

19 Hayley Tsukayama, *Verizon buys Intel's cloud TV service*, Wash. Post, Jan. 21, 2014, http://www.washingtonpost.com/business/technology/verizon-buys-intels-cloud-tv-service/2014/01/21/67e94336-82a5-11e3-9dd4-e7278db80d86_story.html; Janko Roettgers, *Why Verizon is Buying Intel Media: It's All About Taking on Comcast*, Gigaom, Jan. 21, 2014, http://gigaom.com/2014/01/21/why-verizon-is-buying-intel-media-its-all-about-taking-on-comcast.

20 *See Fifteenth Video Competition Report* ¶ 239.

21 Press Release, Dish Network Corp., *ESPN and Disney/ABC Television Group Launch WATCH Authenticated Products to DISH Customers* (Apr. 1, 2014), http://about.dish.com/press-release/programming/espn-and-disneyabc-television-group-launch-watch-authenticated-products-di; Daniel Frankel, *Dish trademarks new name and logo, possible for online video service: 'Nutv'*, FierceCable, Sept. 2, 2014, http://www fiercecable.com/story/dish-trademarks-new-name-and-logo-possibly-online-video-service-nutv/2014-09-02.

22 Alex Sherman et al., *Dish Said to Discuss T-Mobile Deal with Deutsche Telekom*, Bloomberg, Sept. 5, 2014, http://www.bloomberg.com/news/2014-09-05/dish-said-to-discuss-t-mobile-deal-with-deutsche-telekom.html.

B. Video Programming

The number of video programming networks and the diversity of programming available have changed significantly over the last two decades. Looking only at cable television networks, the U.S. Court of Appeals for the D.C. Circuit observed in 2009 that "the number of cable networks has increased by almost 500 percent since 1992 and has grown at an ever faster rate since 2000."[23] Firms that have begun to provide video programming through new cable networks have included not only existing cable network providers and MVPDs, but also movie studios, television production companies, sports teams and associations, venture capital firms, and independent content producers. Moreover, new video programming distributed online or by video-on-demand ("VOD") services continues to emerge.

Like the costs of entry, which are discussed in detail in response to Request 15, the timing of launching a video programming service is based on a number of complex variables, and therefore Comcast is unable to offer a specific estimate of the time required for entry for a video programmer. In order to launch a new linear programming network, critical steps needed include providing content for the network (whether by creating it, acquiring it via license, or a combination of these), delivering the content as a technical matter, arranging for advertising sales (if the programmer anticipates selling advertising for revenue), contracting for distribution (whether via MVPDs as a traditional linear network or VOD service or online), and assembling an executive team. Many of these same steps are required for providing video programming services via online distribution, as the provider still needs to take the steps necessary to create a video product, but no longer has the additional requirement of negotiating distribution agreements with MVPDs. The timing of each of these steps depends upon the particular programming concept and delivery method chosen (e.g., linear networks, video on demand, online a la carte) and as a result cannot be predicted in the abstract. Moreover, each of these steps likely depend upon the result of negotiations between the new programming network and, for example, a content rights holder, a third-party vendor to assist with technical requirements, an MVPD or OVD service for distribution, or potential new executive hires. The length of time needed to negotiate with production studios, content distributors, advertising sale representatives, vendors, and key other parties may vary greatly and involves inherently unknown factors. Uploading video programming to a website like YouTube can be done in a relatively expeditious matter, depending on the nature of the programming. For example, a standup comedy routine created and uploaded to YouTube may generate significant viewership, and can be done in the space of a few hours (exempting the time it takes to create the performance). A more robust programming offering as would be required for a linear programming network would take longer; due to the variables discussed above, the exact timing cannot be predicted in the abstract.

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[23] *Comcast Corp. v. FCC*, 579 F.3d 1, 8 (D.C. Cir. 2009).

Based on recent trends and on the number of entities that have announced their interest in creating new video programming, and the increasing number of available outlets for video programming, it is reasonable to conclude that new video programmers will continue to emerge.

1. Demand for New Video Programming Networks

New video programming likely will be launched to address the changing needs of diverse audiences, evolving interests of the viewing public, and new technologies:

a. Affinity Groups

As the demographic composition of the United States shifts, new video programming will likely emerge to meet the needs of diverse audiences. Over the past 10 years, for example, a number of Spanish-language cable television networks have emerged to satisfy the needs and interests of the United States' growing Hispanic population. As various ethnic populations of the United States continue to grow, video programming options, including new video programming networks, will likely continue to emerge to meet demands for language- and culture-specific content.

b. Evolving Interests

New video programming also will likely emerge in response to viewers' evolving interests. A number of new cable television networks – including Wine TV, Crime & Investigation Network, and Retirement Living TV – have emerged in the past ten years to serve the special interests of niche audiences.[24] Based on these trends, it is likely that new networks will be introduced to address consumers' changing interests.

c. New Technology

New and existing video programming providers also are likely to harness emerging technologies to provide cutting-edge content to consumers. For example, advanced TV set-top boxes with interactive features could allow programmers to develop customizable channels. Viacom recently announced plans to launch a children's programming network that allows viewers to indicate preferences and personalize the content aired on the channel.[25] Other companies also likely will enter the video programming market to take advantage of new opportunities made available by improved technology.

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[24] OVDs such as YouTube have also begun developing video programming to cater to specific interest. *See* Lauren Indvik, *YouTube CEO: The Future of Content Is Niche Channels*, Mashable (Jan. 31, 2012), http://mashable.com/2012/01/31/youtube-niche-content-passive-viewing.

[25] *See* Amol Sharma, *Viacom to Launch Customized Kids' TV Channel*, Wall St. J., Jan. 14, 2014, http://online.wsj.com/news/articles/SB10001424052702303754404579312904182126302.

2. Possible Future Entrants

A partial list of possible future entrants to the provision of video programming includes the following:

a. Existing Video Programming Providers

Existing owners of cable television networks are likely in the future to launch new video programming networks and develop new video programming for distribution in other formats. Existing cable network providers enjoy the benefits of (a) carriage relationships with MVPDs, (b) relationships with advertisers, and (c) experiential knowledge derived from launching other programming networks. News Corp., for example, launched two new networks in 2013 (Fox Sports and FXX).[26] Other large, established cable television networks are likely to continue developing and launching new channels to cater to changing preferences of cable television audiences. Existing owners of cable television networks are also likely to develop new video programming specifically for online distribution. By launching an Internet-based video programming network, an existing video programmer can use existing production assets to develop content to reach specific audiences and broaden their reach. For example, Discovery Communications Inc., which owns a number of cable television networks, recently launched TestTube, a free, online video network targeted at the young male demographic.[27] Other existing video programming providers are likely pursue a similar strategy.

In addition, video programming providers that currently offer only online content may migrate their programming to cable television networks or television VOD services. Some video programming networks that began as VOD-only networks, such as Anime, Fearnet, and Sprout, have used that programming to launch a linear television network. Similarly, funnyordie.com, which began as an online-only viewing service, now distributes content on HBO.

b. Media Figures, Owners of Established Entertainment Brands, and Individual Entrepreneurs

The uncertainties of launching a new cable television network are diminished when the new network is able to leverage a recognized entertainment brand. Media personalities that enjoy such brand recognition are therefore potential entrants into the provision of cable television networks. For example, political commentator Glenn Beck recently launched The Blaze; musician Sean "Diddy"

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[26] Cynthia Littleton, *Congloms Firing up New Cable Channels as Climate Improves*, Variety, Sept. 13, 2013, http://variety.com/2013/tv/news/congloms-firing-up-new-cable-channels-as-climate-improves-1200609613.

[27] Keach Hagey, *Discovery to Launch 'TestTube' Online Video Network*, Wall St. J., May 23, 2013, http://online.wsj.com/news/articles/SB10001424127887323336104578499540671665824.

Combs recently launched Revolt, a music-oriented network showing music videos, live performances, and news and interviews; and filmmaker Robert Rodriguez recently launched El Rey.[28] Other high-profile media figures may also decide to develop their own video programming networks.

Existing media recognition also provides an advantage in developing new online or VOD content. Media figures with a presence on cable television may be particularly likely to develop new programming for distribution online to reach niche audiences. For example, Jeffrey Hayzlett of the Bloomberg TV show C-Suite is launching an over-the-top on-demand video service called C-Suite TV that provides new content that caters to existing C-Suite viewers.[29] Other media figures, including former Vice Presidential candidate and Alaska Governor Sarah Palin and comedian Louis CK, have also recently launched online-only video programming networks.[30] It is likely that other media figures, entrepreneurs, and owners of entertainment brands will pursue a similar strategy by launching video programming networks on the Internet to reach new audiences.

c. Sports Organizations

Much like established entertainment brands, sports teams and leagues may be able to leverage their current fan base to create new video programming networks. In recent years, several sports teams and leagues, including a number of collegiate sports conferences, have launched cable television networks. In the future, other sports organizations may likewise take advantage of their existing audiences to introduce new video programming networks.

d. Venture Capital Firms

Venture capital firms currently own interests in various video programming networks, including the Gospel Music Channel, Ovation TV, and Tennis Channel. Given their access to capital and existing carriage relationships, these and other venture capital firms could launch new video programming networks in the future.

To the extent that video programming is viewed primarily as a source of entertainment or information, any current or prospective provider of entertainment

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[28] *See* Jeanine Poggi, *New TV Networks Scorecard: Eight Cable Channels to Watch in 2014*, Advertising Age, Dec. 26, 2013, http://adage.com/article/media/tv-networks-scorecard-channels-watch-2014/245770.

[29] *See* Jim O'Neill, *C-Suite's Jeffrey Hayzlett launches an online, on-demand business TV network*, Ooyala, July 15, 2014, http://www.ooyala.com/es/videomind/blog/c-suite-s-jeffrey-hayzlett-launches-online-demand-business-tv-network.

[30] *See* Andrew Kirell, *Sarah Palin Launches Subscription-Based Online Video Channel*, Mediaite, July 27, 2014, http://www mediaite.com/tv/sarah-palin-launches-subscription-based-online-video-channel/; Louis CK, http://www.louisck.net (last visited Sept. 10, 2014).

or information, including many of the potential new entrants in video programming, could potentially be viewed as offering a substitute service.

C. Internet Access Services

1. Subscribers

Internet access services are currently provided by a variety of companies, including cable system operators, telephone companies, satellite companies, and mobile wireless providers. The availability of high-speed Internet access from multiple providers across the United States has increased significantly in recent years, and numerous companies are providing broadband Internet access services across a range of technological platforms.[31]

Telephone companies provide fiber-to-the-premises services to a growing number of American households and are upgrading their DSL-based services, in many cases by building fiber-to-the-node, to offer faster speeds across the country. Today, CenturyLink offers DSL speeds up to 40 Mbps, AT&T offers speeds up to 45Mbps, Verizon offers speeds up to 15 Mbps, and Frontier offers speeds up to 25 Mbps.[32]

CenturyLink has introduced 1 Gbps fiber-to-the-premises service to business and residential customers in 16 cities, including Denver, Seattle, and Minneapolis-St. Paul.[33] CenturyLink also continues to invest in DSL upgrades including VDSL2 and pair bonding to improve broadband speeds across its footprint.[34] Overall, telephone companies appear well-positioned to offer highly competitive broadband speeds well into the future.[35]

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[31] *See* Comcast Corp. and Time Warner Cable Inc., Applications and Public Interest Statement, MB Docket No. 14-57, at 42-56 (Apr. 8, 2014) ("Public Interest Statement").

[32] *See* Letter from Lynn R. Charytan, SVP, 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, at 10 (Feb. 21, 2014) (detailing competitive standalone broadband options in Comcast's top 30 markets).

[33] Press Release, CenturyLink, Inc., CenturyLink expands its gigabit service to 16 cities, delivering broadband speeds up to 1 gigabit per second (Aug. 5, 2014), http://news.centurylink.com/news/centurylink-expands-its-gigabit-service-to-16-cities-delivering-broadband-speeds-up-to-1-gigabit-per-second.

[34] *See, e.g.*, Glen F. Post, President and CEO, CenturyLink, Inc., Q4 2013 Earnings Call, Tr. at 5 (Feb. 12, 2014) ("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").

[35] 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 opportunit[y] against the cable companies continue to be a very good one").

Cable overbuilders, new entrants like Google fiber, municipal providers, fixed wireless providers, and satellite broadband providers also are competing vigorously. And well-capitalized and aggressive nationwide mobile broadband providers now offer services that provide speeds comparable to many of the fixed broadband services that consumers purchase.[36]

Broadband providers are racing to give consumers access to the Internet content and applications that they demand. For example, in 2010, AT&T offered only traditional ADSL service to the significant majority of the 76 million households in its wireline footprint[37] and had announced no plans to upgrade its network in these areas. Today, AT&T is well into the process of deploying a mix of fiber-to-the-premises, fiber-to-the-node, IP-DSLAM, and fixed wireless broadband technologies to as many as 70 million customer locations.[38] Google, CenturyLink, Cox, and others have also announced ambitious plans to roll out fiber-to-the-premises networks and have begun to set these plans into motion.[39]

Notably, in 2010, none of the four nationwide mobile broadband providers had even begun to deploy LTE networks until Verizon began its deployment in December of that year.[40] Now, all four major wireless providers operate LTE

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[36] *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, as Amended by the Broadband Data Improvement Act*, Eighth Broadband Progress Report, 27 FCC Rcd 10342 ¶ 6 (2012) (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").

[37] Press Release, AT&T Inc., AT&T Reports Record 2.8 Million Wireless Net Adds, Strong U-verse Sales, Continued Revenue Gains in the Fourth Quarter (Jan. 27, 2011), http://www.att.com/gen/press-room?pid=18952&cdvn=news&newsarticleid=31519&mapcode=financial (indicating that U-Verse passed 27 million of the living units in AT&T's footprint in Q4 2010).

[38] *See* Press Release, AT&T Inc., AT&T to Acquire DIRECTV (May 18, 2014), http://about.att.com/story/att_to_acquire_directv html ("*AT&T/DirecTV Press Release*").

[39] *See* Milo Medin, VP, Google Access Services, *Exploring New Cities for Google Fiber*, Google Fiber Blog (Feb. 19, 2014), http://googlefiberblog.blogspot.com/2014/02/exploring-new-cities-for-google-fiber html; Press Release, CenturyLink, Inc., CenturyLink Brings 1 Gigabit Fiber Service to Las Vegas (Oct. 9, 2013), http://news.centurylink.com/news/centurylink-brings-1-gigabit-fiber-service-to-las-vegas-2598362; Press Release, Cox Commc'ns, Cox Communications Kicks Off Plan to Offer Residential Gigabit Speeds (May 22, 2014), http://cox mediaroom.com/index.php?s=43&item=753.

[40] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, 26 FCC Rcd 9664 ¶¶ 108-14 (2011) (describing the four nationwide mobile broadband providers' initial efforts to test and deploy LTE services); *see also* Press Release, Verizon Wireless, Blazingly Fast: Verizon Wireless Launches the World's Largest 4G LTE Wireless Network on Sunday, Dec. 5 (Dec. 3, 2010), http://www.verizonwireless.com/news/2010/12/pr2010-12-03.html (touting Verizon's LTE network, which launched in 38 cities in December 2010, as "the world's largest").

networks that collectively blanket the nation.[41] And, the fastest mobile LTE network in the United States can achieve average download speeds close to 20 Mbps and peak speeds over 70 Mbps.[42]

These competitive developments are reflected in the FCC's Form 477 data. The tables below illustrate broadband competition at the 10 Mbps threshold. The most recently released round of this data is from June 2013 and thus does not account for significant additional progress that has been made in the past year, but even the June 2013 data reveal a significant increase in competition since the FCC's previous review:

Number of Fixed Broadband Providers[43]	% of Households as of December 31, 2009	% of Households in June 2013
At Least 3	2%	54%
At Least 2	22%	92%
At Least 1	80%	99%

[41] *See* The Verizon Wireless 4G LTE Network, Verizon Wireless, http://www.verizonwireless.com/news/LTE/Overview.html (last visited Sept. 10, 2014); *About Our Network*, AT&T, http://about.att.com/news/wireless-network.html (last visited Sept. 10, 2014); Press Release, Sprint Corp., 4G LTE Launched Markets (Sept. 9, 2014), http://newsroom.sprint.com/news-releases/4glte-launchedmarkets.htm; *T-Mobile 4G LTE*, T-Mobile, http://t-mobile-coverage.t-mobile.com/4gcitylist.aspx (last visited Sept. 10, 2014). According to NTIA data, 97.3 percent of households in the United States have access to a mobile wireless provider offering downstream speed of at least 10 Mbps. *See* Mark A. Israel, Implications of the Comcast/Time Warner Cable Transaction for Broadband Competition ¶ 62 (Apr. 8, 2014), Exhibit 6, Applications and Public Interest Statement, MB Docket No. 14-57 ("Israel Decl."). The FCC recently noted in its Open Internet NPRM that LTE subscriptions grew by a factor of nearly 500 during this period, *see Protecting and Promoting the Open Internet*, Notice of Proposed Rulemaking, 29 FCC Rcd 5561, ¶ 48 n.110 (May 15, 2014), and SNL Kagan predicts that there will be 224 million unique 4G subscriptions in the United States by 2018, *see* SNL Kagan, *Covered Pops & Subscribers by Technology in U.S. Wireless* (July 2013). Mobile broadband's share of the Internet ecosystem is rapidly growing; mobile data traffic is projected to grow three times faster than fixed IP data traffic between 2013 and 2018. *See Visual Networking Index: Forecast and Methodology, 2013-2018*, Cisco (June 10, 2014), http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.html.

[42] *See* Israel Decl. ¶ 61.

[43] This chart displays the number of households located in census tracts where fixed broadband providers reported offering broadband Internet access service speeds of at least 10 Mbps downstream and 1.5 Mbps upstream. *See* FCC, *Internet Access Services: Status as of December 31, 2009* (WCB Dec. 2010), 7 & fig. 3(a), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-303405A1.pdf; Internet Access Services: Status as of June 30, 2013, Ind. Analysis & Tech. Division, Wireline Competition Bureau, FCC, (June 2014), at 9 & fig. 5(a), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0625/DOC-327829A1.pdf ("*June 2013 IAS Report*").

Furthermore, when accounting for mobile broadband providers the data show that competition is even more vibrant:

Number of Fixed or Mobile Broadband Providers[44]	% of Households in December 2009	% of Households in June 2013
At Least 3	2%	91%
At Least 2	22%	98%
At Least 1	80%	99%

Chairman Wheeler recently stressed the importance of targeting ever-higher broadband speeds in order to meet increasing consumer demand.[45] Although many online activities do not require higher speeds, the demand from consumers noted by Chairman Wheeler illustrates the strong incentives that broadband providers have to upgrade and deploy increasingly better technology, and improve and expand their offerings. Thus it is not surprising that various mobile and fixed broadband providers have undertaken significant investments in recent years and are likely to continue to do so.

Moreover, municipal governments also have begun offering Internet access service to local residents.[46] For example, Santa Cruz County recently announced a plan to build out Internet infrastructure to extend broadband service.[47] Indeed,

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[44] This chart displays the number of households located in census tracts where fixed broadband providers reported offering broadband Internet access service speeds of at least 10 Mbps downstream and 1.5 Mbps upstream *or* mobile broadband providers reported operating a network capable of such speeds. *See* Internet Access Services: Status as of December 31, 2009, Ind. Analysis & Tech. Division, Wireline Competition Bureau, FCC, (Dec. 2010), at 8 & fig. 3(b), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-303405A1.pdf; *June 2013 IAS Report* at 10 & fig. 5(b).

[45] Remarks of Chairman Tom Wheeler, FCC, "The Facts and Future of Broadband Competition," 1776 Headquarters, Washington, D.C. (Sept. 4, 2014), http://www.fcc.gov/document/chairman-remarks-facts-and-future-broadband-competition.

[46] *See* Edward Wyatt, *Fast Internet is Chattanooga's New Locomotive*, N.Y. Times, Feb. 3, 2014, http://www.nytimes.com/2014/02/04/technology/fast-internet-service-speeds-business-development-in-chattanooga.html?_r=0 (describing Chattanooga, Tennessee's taxpayer-owned fiber optic network).

[47] Jason Hoppin, *Santa Cruz County to get new Internet backbone*, Santa Cruz Sentinel, Apr. 11, 2014, http://www.santacruzsentinel.com/news/ci_25549462/santa-cruz-county-get-new-internet-backbone.

as of May 2013, there were approximately 135 municipal fiber-optic networks in the United States.[48]

Potential new entrants into the provision of Internet access services may include telephone companies, technology companies, cable overbuilders, wireless companies, or more government municipalities. DISH Network also has begun trials partnering with wireless providers such as Sprint to provide fixed wireless services.[49] In recent trials, DISH and Sprint achieved download speeds of 200 Mbps.[50] And, as innovations in wireless technology lead to faster speeds and greater capacity,[51] other wireless options are likely to emerge and begin offering high speed fixed and mobile broadband products. Indeed, the price per gigabyte of transmitting data over mobile wireless networks is likely to continue decreasing as available spectrum and spectral efficiency both increase.[52] These reductions in cost will likely cause reductions in prices for consumers and greater usage of mobile wireless broadband.[53]

Like the costs of entry, which are discussed in greater detail in response to Request 15, the time required for entry as an Internet access service provider is variable and cannot be predicted in the abstract. A new Internet access service provider would need to build or purchase a physical infrastructure; enter into interconnection relationships with other ISPs, CDNs, and content providers; and meet often substantial regulatory requirements, in addition to marketing the product. The timing of each of these requirements is variable depending on factors such as the scope of entry or the manner of entry (e.g., building new infrastructure versus purchasing existing systems). In particular, the amount of time required to build physical infrastructure may vary widely depending on how much the new entrant intends to spend on construction (since the time required for a project is generally inversely proportional to the cost).

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48 Masha Zager, *Number of Municipal FTTP Networks Climbs to 135*, Broadband Communities, May/June 2013, http://www.bbpmag.com/Features/0513feature-MuniCensus.php.

49 Press Release, Sprint Corp., Sprint and DISH to Trial Fixed Wireless Broadband Service (Dec. 17, 2013), http://newsroom.sprint.com/news-releases/sprint-and-dish-to-trial-fixed-wireless-broadband-service.htm.

50 Sarah Reedy, *Son: Dish Could be Sprint's Great Ally*, LightReading, Mar. 27, 2014, http://www.lightreading.com/mobile/4g-lte/son-dish-could-be-sprints-greatally/d/d-id/708408.

51 *See* Sacha Segan, *Fastest Mobile Networks 2014*, PC Magazine, June 11, 2014, http://www.pcmag.com/article2/0,2817,2459185,00.asp.

52 *See* Israel Decl. ¶ 67.

53 *Id.*

2. Edge Providers[54]

Comcast believes that the provision of Internet access services to edge providers is similar to that for subscribers. Accordingly, it incorporates by reference Section C.1 of this response. In addition, it notes that potential new entrants into the provision of Internet access services for edge providers may include telephone companies, technology companies, cable overbuilders, Internet backbone providers, or government municipalities.

Like the costs of entry, which are discussed in greater detail in response to Request 15, the time required for entry as an Internet access service provider to edge providers is variable and cannot be predicted in the abstract. A new Internet access service provider would need to build or purchase a physical infrastructure, enter into interconnection relationships with other ISPs, CDNs, and content providers, and meet often substantial regulatory requirements, in addition to marketing the product. The timing of each of these requirements is variable depending on factors such as the scope of entry or the manner of entry (e.g., building new infrastructure versus purchasing or leasing access to existing systems). In particular, the amount of time required to build physical infrastructure may vary widely depending on how much the new entrant intends to spend on construction (since the time required for a project is generally inversely proportional to the cost).

D. Internet Backbone Services

The Internet backbone service industries are dynamic and continue to evolve in response to changes in technology and consumer preferences. In the order approving the Level 3/Global Crossing merger, the FCC noted that "the number of Tier 1 ISPs appears to have grown since 2005" and that "[t]he emergence of several new Tier 1 peers . . . undercuts the argument that there are overwhelming barriers to entry into the Tier 1 market."[55] Several other companies in addition to traditional Tier 1 ISPs offer combinations of direct peering, transit, and Content Delivery Network ("CDN") services, and that number is likely to continue to grow. Indeed, evidence suggests that the traditional view of a "hierarchy" of Internet backbone services, in which Tier 1 ISPs typically peer with one another on a settlement-free basis and other ISPs purchase transit from the Tier 1 providers, no longer describes the range of relationships in Internet backbone services.[56] Instead, Internet companies in need of Internet backbone services have multiple alternatives, including CDNs, as well as direct peering or partial transit.[57]

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54 OVDs are discussed above under Video Programming Services.

55 *Fifteenth Video Competition Report* ¶ 28.

56 *See* Israel Decl. ¶ 74.

57 *Id.*

Internet-based companies including Google, Facebook, and Amazon have also begun investing in their own Internet backbone infrastructure.[58] By investing in fiber networks, Internet-based companies may be able to reduce their own content delivery costs and improve performance. As overall Internet traffic increases with the proliferation of high-definition streaming video and other bandwidth-intensive applications, more Internet-based companies are likely to invest in infrastructure and enter the Internet backbone service market, making them possible entrants into the CDN market as well.

Like the costs of entry, which are discussed in greater detail in response to Request 15, the time required for entry as an Internet backbone service provider is variable and cannot be predicted in the abstract. A new Internet backbone service would need to build or purchase network infrastructure, acquire server space in interconnection facilities, and enter into interconnection relationships with other Internet backbone service providers and Internet access service providers. The timing of each of these requirements is variable depending on factors such as the scope of entry (e.g., some Internet backbone providers operate globally while some have a more regional focus) or the manner of entry (e.g., building new Internet backbone infrastructure versus purchasing or leasing access to existing networks). In particular, the amount of time required to build a backbone network may vary widely depending on how much the new entrant intends to spend on construction (since the time required for a project is generally inversely proportional to the cost). The amount of time needed to negotiate peering and transit relationships with other Internet backbone service providers also involves inherently unknown factors.

Comcast's entry into Internet backbone services is just one example of the requirements, timing, and costs of entry, but each of these elements varies substantially from one provider to the next. In Comcast's case, it invested in and built out its Internet backbone network **[[ ]]** to support its cable operations. It began by developing the concept for an Internet backbone network **[[**

]] {{

}} It continued to **[[**

]] and completed [[

[58] *See* Drew Fitzgerald & Spencer E. Ante, *Tech Firms Push to Control Web's Pipes*, Wall St. J., Dec. 16, 2013, http://online.wsj.com/news/article_email/SB10001424052702304173704579262361885883936-lMyQjAxMTAzMDEwNjExNDYyWj.

[[**]]** Comcast has continued to **[[** **]]**.

E. Content Delivery Networks

CDNs are, like Internet Backbone services, part of the process of delivering content over the Internet to ultimate end users. As discussed with regard to Internet Backbone services, the industry for the process of delivering content over the Internet is in flux and dynamic. CDNs are part of a broader trend towards increasing the number of traffic delivery options beyond relying on transit services provided by traditional global backbone networks. In response to overall increases in Internet traffic and demand for higher quality, various companies have been developing innovative traffic exchange solutions. Indeed, the lines distinguishing among backbone networks, Internet access providers, and content providers are increasingly blurry.[59]

The companies discussed above as potential new entrants for providing Internet Backbone services are likely potential providers of CDNs as well. For example, Level 3 Communications began providing CDNs after having established an Internet Backbone service. Other Internet Backbone services providers, as well as other content providers, may begin investing in CDNs. Content providers that invest in a CDN for their own content (such as Google and Apple) may later be able to use that CDN in order to provide capacity to third parties.

Like the costs of entry, which are discussed in greater detail in response to Request 15, the time required for entry as a CDN is variable and cannot be predicted in the abstract. A new CDN would need to build or purchase network infrastructure, invest in equipment and software necessary to provide CDN services, acquire server space in interconnection facilities, and enter into interconnection relationships with other Internet backbone service providers, content providers, and Internet access providers. In general, many of the same factors affecting the time required for entry of an Internet backbone service provider apply to a CDN. Additionally, there are a variety of software components that have to be built or acquired and integrated into a unified platform to enable the core delivery of data and to allow for management of the CDN. For instance, software infrastructure is needed to log transactions and provide customer support and analytics.

The timing of each of these requirements is variable, depending on factors such as the scope of entry (some CDNs may only seek to serve smaller content providers while others may seek to carry larger traffic volumes), the manner of entry (e.g., creating a new CDN service versus acquiring an existing platform or partnering with an existing vendor or provider), and the amount of time needed to negotiate

[59] Dennis Weller, *The Internet Market For Quality*, 84 Comm. & Strategies 35, 38 (2011).

peering and transit relationships with other Internet backbone providers and potential customers (providers with Internet backbone networks can utilize existing relationships, while other providers will need to enter into interconnection arrangements).

Comcast's entry into content delivery network services is just one example of the requirements, timing, and costs of entry, but each of these elements varies substantially from one provider to the next depending on many factors described above. In Comcast's case, it began working on its latest IP CDN in **[[ ]]** Thus far, Comcast has spent **{{ }}** on IP CDN infrastructure, **{{ }}** on software development, and **{{ }}** on deployment and maintenance. These costs and the associated timeline relate to [[**]]**; Comcast [[**]]**.

15. Separately for each relevant service (i) describe the minimum viable scale necessary for entry, including but not limited to, hurdle rates, the capital required for entry, construction of new facilities, spectrum and/or licensing requirements, whether carriage on any particular MVPD or OVD is necessary and if so, the identity of each such provider, and the number of subscribers and advertisers needed to break-even, and to the extent not already produced, (ii) produce all documents relating to the Company's entry into each of the above services since January 1, 2009. Indicate in your response whether your response would vary based upon the type of video programming (e.g., movies, sports, Spanish-language).

SUPPLEMENTAL RESPONSE:

In addition to the information provided in response to Request 15 in its initial response, Comcast provides the following supplemental response:

This Response to Request 15 represents the view of Comcast, as is the case with all of Comcast's responses to the FCC's Information and Data Request, unless otherwise noted.

19. For each non-broadcast programming network identified in response to Request 18, state separately, and produce in CSV or Excel format, for each month from January, 2009, to the present:

a. the identity of any MVPD that carries the network, and for each MVPD state (1) the total and per subscriber license fee paid by the MVPD to the Company, (2) the total number of the MVPD's subscribers that receive the network, (3) the number of minutes per hour granted to the MVPD for local advertising sales and (4) the tier on which the network is carried;

b. for all MPVDs carrying the network, state (1) the total per subscriber license fees and average per subscriber license fees paid by all MVPDs to the Company, (2) the total number of MVPD subscribers that receive the network, and (3) the average number of minutes per hour granted to MVPDs for local advertising sales;

c. the average gross advertising revenue per subscriber and the average net advertising revenue per subscriber and an explanation of how these values were calculated; and

d. the identity of each OVD, including but not limited to Apple, Amazon.com, Google, Netflix, Hulu, and the Company that publishes, sells or distributes, in whole or part, content produced or distributed by the non-broadcast programming network, and the total fees paid each year by the OVD to the Company for the right to distribute such programming.

CLARIFYING RESPONSE:

As confirmed with FCC staff, and as indicated in Comcast's initial submission, annual data were provided in Exhibits 19.2(a) and 19.3(a). (Exhibits 19.2(b) and 19.3(b) additionally provide monthly data around any changes in Comcast's ownership interest of a particular programming network.)

51. On page 106 of the Public Interest Statement, the Applicants state that various Comcast-NBCU Order Conditions, commitments and obligations will be extended to the TWC cable systems. Provide the following information:

a. List all the conditions, commitments and obligations that will be extended to the assets acquired after consummation of the proposed TWC transaction, and after consummation of the proposed divestiture transactions, and the date the conditions, commitments and obligations will expire.

b. List all the conditions, commitments and obligations that will not be extended to the assets acquired after consummation of the proposed TWC transaction, and after consummation of the proposed divestiture transactions, and explain why each condition, commitment and obligation will not be extended to the acquired assets.

REVISED RESPONSE:

This response replaces Comcast's initial response.

51(a):

Conditions That Apply (Note that Conditions listed with an asterisk ("*") are those that would require additional clarification or transition time in order for Comcast to comply. Except where noted, each of these conditions expires on January 17, 2018.)

Condition II: Access to C-NBCU Programming

II. Access to programming.

Condition III: Carriage of Unaffiliated Video Programming

III.1. Nondiscriminatory Carriage.

III.2. Neighborhooding.* (Additional time for compliance).

III.3. Requirement to Launch Independently Owned-and-Operated Channels to the Digital Tier (required to be completed by January 17, 2019).

III.4. Online Program Access; Program Carriage Complaints.

Condition IV: Online Conditions

IV.A.1. Online Program Access; MVPDs.

IV.A.2.a. Online Program Access; Qualified OVDs, MVPD Price Condition.

IV.A.2.b. Online Program Access; Benchmark Condition.

IV.A.3. Online Program Access; Commercial Arbitration.

IV.A.4. Online Program Access; Conditions on Display of Online Video Programming.

IV.A.5. Online Program Access; Indemnification.

IV.B.1. Restrictions Regarding Exclusivity/Windowing, Prohibition on Limiting Distribution to OVDs.* (Clarification needed regarding December 3, 2009 date for determining what constitutes common, reasonable industry practices).

IV.B.2. Restrictions Regarding Exclusivity/Windowing, Permitting Petitions for Exclusivity.

IV.B.3. Restrictions Regarding Exclusivity/Windowing, Carriage on Comcast MVPD System.

IV.C.2. Continued Access to Online Content & Hulu; Honoring Existing Programming Agreements.* (Clarification needed regarding the January 17, 2011 date for honoring agreements).

IV.D.1. Standalone Broadband Internet Access Service.

IV.D.2. Marketing of Standalone Broadband Internet Access Service.* (Additional time for compliance).

IV.D.3. Standalone Broadband Internet Access Service, Reporting.* (Additional time for compliance).

IV.E.1. Broadband Internet Access Service; Specialized Services.

IV.E.2. Broadband Internet Access Service; Nondiscriminatory Access.

IV.E.3. Broadband Internet Access Service; 12 Mbps Tier.

Condition IV.F: Set-Top Boxes

IV.F. Set-Top Boxes.

Condition IV.G: Unfair Practices

IV.G.1. Unfair Practices.

IV.G.2. No Automatic Right to Access Video Programming.

Condition V: Notice of Conditions

V. Notice of Conditions.* (Additional time for compliance).

Condition VII: Commercial Arbitration Remedy

VII.A.Commercial Arbitration, Initiation of Arbitration.* (Clarification needed as to what constitutes a full bundle of cable programming made available to MVPDs as it relates to TWC and Charter).

VII.B. Commercial Arbitration, Rules of Arbitration.

VII.C. Commercial Arbitration, Provisions Applicable to Arbitrations Under Section IV (Online).

VII.D. Commercial Arbitration, Provisions Applicable to Small MVPDs.

VII.E. Commercial Arbitration, Review of Final Award by the Commission.

Condition VIII: Modifications to AAA Rules for Arbitration

VIII.1-7. Modifications to Arbitration Rules.

Condition IX: Broadcast Condition

IX. Broadcast Condition.

Condition X: Diversity

X.2. Telemundo Programming on VOD.* (Additional time for compliance).

X.3.a-b. Telemundo and mun2 Programming on VOD and Online.* (Additional time for compliance).

X.5. Independent Programming Reports.* (Additional time for compliance).

Condition XI: Localism

XI.6. Increased VOD Choices at No Additional Charge.* (Additional time for compliance).

XI.7. Broadcast Content on VOD at No Additional Charge.* (Additional time for compliance).

Condition XIII: Children's Programming

XIII.1.a-b. Children's VOD Programming.* (Additional time for compliance).

XIII.2.a. Improved Ratings Icons.* (Additional time for compliance).

XIII.2.b. Improved Parental Controls.* (Additional time for compliance).

XIII.2.c. Parental Dashboard.* (Additional time for compliance).

XIII.2.d. Blocking Capabilities of IP-based STBs.* (Additional time for compliance).

XIII.3. Partnership with Common Sense Media ("CSM").* (Additional time for compliance).

XIII.4. Interactive Advertising.

XIII.5. Definition of Interactive Advertising.

XIII.6. Public Service Announcements.

Condition XIV: PEG

XIV.1. No Migration to Digital Delivery.

XIV.2. PEG Carriage on Digital Starter Tier.

XIV.3. Quality of PEG Delivery.

Condition XV: Carriage of Programming of Non-Commercial Educational Stations

XV.1-3. Requirement to Carry.

XVII. General Condition

Condition XIX: Reporting Requirements

XIX. Reporting Requirements.

Open Internet Commitment. (*Comcast-NBCUniversal Order* ¶ 285)

51(b):

As noted, several conditions have expired and/or have been satisfied in full. In addition, a number of conditions have no particular applicability to the proposed transaction because they are specifically directed to the NBCUniversal assets.

A. Conditions That Have Expired

Condition VI: Replacement of Prior Conditions

VI. Replacement of Prior Conditions. This provision made clear that the conditions supersede the commercial arbitration remedy imposed in the Adelphia

Transaction. Because the Adelphia Order has now expired, this provision is moot.

Condition XIV: PEG

XIV.4.a-d. Platform to Host PEG Content On Demand and On Demand Online. Comcast was required to develop a platform to host PEG content On Demand and On Demand Online. Comcast has fully satisfied the terms of this Condition. In addition, this Condition expired at the end of 2013.

Condition XVI: Expanding Broadband Deployment and Adoption

XVI.1.a-c. Comcast Broadband Footprint Expansion. The Comcast-NBCUniversal Conditions required Comcast to expand its then-existing broadband network by at least 1,500 miles per year for each of the three years and to an additional 600 courtesy account locations following the closing the NBCUniversal Transaction (i.e., during 2011, 2012 and 2013). Comcast has fully satisfied the terms of this Condition. In addition, this Condition expired at the end of 2013.

XVI.2.a-m. Expanding Broadband Adoption. This Condition required that Comcast offer its Internet Essentials broadband adoption program for three school years. Comcast has fully satisfied this requirement, and the obligation to continue to offer the program to new customers has expired. Although Comcast is required to continue offering the service to families who enrolled during the past three years at the fixed $9.95 price, the Condition has otherwise expired. Nevertheless, as Comcast committed on the day the transaction was announced and in its Public Interest Statement, we are committed to expanding its highly successful Internet Essentials program to the acquired systems.

B. Conditions that Apply Specifically to the NBCUniversal Programming Assets

Condition IV.C: Continued access to online content and Hulu

IV.C.1. Continued Programming on nbc.com. Comcast must continue to provide programming over nbc.com. This Condition is applicable to nbc.com and has no applicability to the proposed transaction.

IV.C.3. Provision of Content to Hulu. Comcast must renew its agreements with Hulu on certain terms. This Condition is applicable to NBCUniversal's agreement with Hulu and has no applicability to the proposed transaction.

IV.C.4. Relinquishment of Control Over Hulu. Comcast must relinquish management control over Hulu. This Condition is applicable to NBCUniversal's agreement with Hulu and has no applicability to the proposed transaction.

Condition X: Diversity

X.1. Diversity Channel. Comcast-NBCUniversal was required to launch a new multicast channel on its Telemundo owned-and-operated broadcast television stations utilizing library programming that has had limited exposure. This Condition has been satisfied, and in any event applies only to Telemundo owned-and-operated broadcast television stations.

X.4. New Weekly Business Program. Comcast was required to work with an independent producer to project a new weekly business news program and assist to make the program available through syndication. Comcast has fulfilled the terms of this Condition.

Condition XI: Localism

XI.1. News, Public Affairs, and Other Local Public Interest Programming. Comcast was required to preserve and enrich the output of local news, local public affairs, and other public interest programming on the NBCUniversal-owned stations and cable programming networks. This Condition applies specifically to NBC and Telemundo owned-and-operated broadcast television stations.

XI.2-3. 1,000 Hours of Additional Local News and Information. The NBC owned-and-operated broadcast television stations were required to produce an additional 1,000 hours per year of original, local news and information programming. This Condition applies specifically to NBC owned-and-operated broadcast television stations.

XI.4. News and Information Programming Reports. Comcast is required to file quarterly reports regarding the news and information programming aired on the NBC and Telemundo owned-and-operated broadcast television stations. This Condition applies specifically to NBC and Telemundo owned-and-operated broadcast television stations.

XVI.5. Non-Profit News Partners. The Conditions require that half of the 10 NBC owned-and-operated broadcast television stations establish cooperative arrangements with locally focused non-profit news organizations. This Condition applies specifically to NBC owned-and-operated broadcast television stations.

Condition XII: Journalistic Independence Condition

XII. Journalistic Independence. Comcast is required to continue NBCUniversal's policy of journalistic independence with respect to the news programming organizations of all NBCUniversal networks and stations. This Condition applies only to NBCUniversal news.

Condition XIII: Children's Programming

XIII.1.c. Additional E/I Programming. Requirement to provide one additional hour per week of children's educational and informational programming over the primary channels of all Telemundo owned-and-operated broadcast television stations and over the primary or multicast channels of all NBC owned-and-operated broadcast television stations. This Condition applies only to NBC and Telemundo owned-and-operated broadcast television stations.

XIII.2.e. Online Ratings Icons. Program ratings information is required to be included in programming provided by NBCUniversal to nbc.com, to other NBCUniversal websites, and to Hulu.com. This Condition applies only to nbc.com and other NBCUniversal websites.

52. For each of the conditions and commitments contained in the Comcast-NBCU Order, state whether it has "become part of Comcast's core business ethics and operations," as described on page 107 of the Public Interest Statement, and explain how the Company has implemented each of the identified conditions and commitments.

SUPPLEMENTAL RESPONSE:

While, as described in detail in Comcast's initial response to this Request, each of the Commitments and Conditions contained in the *NBCUniversal Order* has been fully incorporated into the Company's business, operations, and practices, the following have become particularly core to Comcast's business ethics and operations:

- Condition III. Conditions Concerning Carriage of Unaffiliated Video Programming
- Condition IV.A. Online Conditions; Online Program Access
- Condition IV.B. Online Conditions; Restrictions Regarding Exclusivity/Windowing
- Condition IV.D. Online Conditions; Standalone Broadband Internet Access Service
- Condition IV.G. Online Conditions; Unfair Practices
- Condition IX. Broadcast Condition
- Condition X. Diversity
- Condition XII. Journalistic Independence
- Condition XVI. Conditions to Expand Broadband Deployment and Adoption
- Commitment Regarding Adherence to Open Internet Rules

59. Describe and produce all documents relating to data caps, including but not limited to: (i) any data caps imposed by the Company for each tier of Internet access service identified in response to Request 3 in any relevant area and the criteria used for imposing them and selecting the limit; (ii) the size of the data cap and the price of the Company's Internet access service both with and without the data cap; (iii) the Company's usage-based pricing (UBP) trials, rationale for them, and the findings or results of each such trial; (iv) video programming and other services subject to, and not subject to, the cap; (v) the cost, detriments and benefits to the Company and to the Company's subscribers of offering Internet access service with data caps, including the effect of the data caps on the Company's network; (vi) the effect of the data cap on the Company's customer's behavior (e.g., downloading of OVD content, purchase of the Company's PPV and VOD services); (vi) the effect of the data cap on competition for any relevant service and persons who provide video programming; and (vii) whether different UBP trials are planned, and if so, a description and timetable for each.

SUPPLEMENTAL RESPONSE:

The FCC requested additional information regarding (1) "the cost, detriments and benefits to the Company and to the Company's subscribers of offering Internet access service with UBP, including the effect of the data caps on the Company's network" and (2) "the effect of the UBP on the Company's customer's behavior (e.g., downloading of OVD content, purchase of the Company's PPV and VOD services)." (These responses have already been provided with regard to data caps in Comcast's response to the initial Request 59.)

With regard to part 1 of the amended request, Comcast provides the following information:

Comcast is not aware of any effect on its network from the implementation of UBP. As noted in Comcast's initial response, **{{**

}}. Across Comcast's footprint, from September 2013 to September 2014, median data use has grown by approximately **{{ }}** percent. Median usage in two of Comcast's larger trial markets, Atlanta and Nashville, also has grown by **{{ }}** percent over that same period. In general, median usage in the trial markets has generally approximately **{{ }}**. In terms of benefits from UBP, Comcast receives some incremental revenue from users who go over the data threshold in certain markets. Additionally, UBP helps to ensure that Comcast customers are treated fairly such that those customers who choose to use more, pay more, and customers that choose to use less, pay less. In terms of costs and detriments, administering the program in trial markets has some incremental expenses, there may be customers

that are unhappy if they have to pay for more usage, and UBP may be exploited by a competitor with no UBP to try to capture market share.

With regard to part 2 of the amended request, Comcast provides the following information:

The UBP practices in place in these trial markets **{{ }}**. As explained in Comcast's initial submission, usage behavior has generally **{{ }}** in markets where Comcast is conducting data usage trials. **{{ }}**, both in terms of overall usage growth, as well as median usage. **{{**

}}.

68. Describe the Company's CDN, including the products and services it offers, and the contractual terms, and produce all documents relating to the Company's CDN, including but not limited to, interconnection agreements with other networks, business plans, expansion plans, budgets, forecasts of sales, costs and profits, and analyses of the market, competition or competitors.

SUPPLEMENTAL RESPONSE:

Comcast stated in its initial response to this request that **{{ }}**. This supplemental response provides additional information and an update regarding this statement.

{{

}}.

In addition, since Comcast filed its initial response to this request, **{{**

}}.

75. For each day during the period from January 1, 2012, to May 31, 2014, and for each DMA where the Company provides VOD and PPV services, identify each IP point of presence through which traffic from (i) Cogent Communications Inc., and (ii) Level 3 Communications Inc., was delivered to the Company's Internet access service subscribers in that DMA.

CLARIFYING RESPONSE:

It is not possible to provide any reliable answer to this question. As Comcast explained in its September 11, 2014 response, **[[**

]]. That is equally true for all other senders of Internet traffic to Comcast's network, each of which determines directly or via its transit or CDN agents the IP point(s) of presence to which its traffic is delivered, which may or may not be the IP point of presence in the DMA closest to the ultimate traffic recipient. As the initial response to this request explains, for many providers, "the typical default behavior for Internet routing is to send traffic to the IP point of presence nearest to where it received the data, regardless of that traffic's ultimate destination. This action is commonly referred to as 'shortest exit' or 'hot potato' routing.[60]"

[60] Content delivery networks ("CDNs"), by contrast, typically work to deliver traffic to the IP point of presence closest to the requesting party.

80. To the extent the Applicants contend that the proposed TWC transaction and the proposed divestiture transactions will result in (i) savings in any costs or expenditures, (ii) geographic efficiencies, (iii) an enhanced ability to introduce new products, provide more products and services to customers and to improve service quality and management of communications security risks, and (iv) any other synergies:

a. describe in detail all of the claimed efficiencies, savings, new and improved products and synergies that are projected by the Applicants to result from the proposed TWC transaction and the proposed divestiture transactions, and submit a timeline for when these efficiencies, savings, new or improved products and synergies will be generated and recognized by the Company;

SUPPLEMENTAL RESPONSE:

Comcast provides the following supplemental response to subpart (a) of this request.

f. Timeline for Efficiencies and Synergies

As discussed in its initial response, Comcast estimates that the efficiencies resulting from the proposed 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). Comcast expects to achieve 50 percent of the operating efficiencies in the first year after closing, another 25 percent in year two, and the remaining 25 percent in year three. These efficiencies primarily represent savings from corporate overhead, cable operations, and programming costs. There are many unknowns when projecting the efficiencies of a transaction, both as to timing and as to amount of efficiencies ultimately realized, including regulatory uncertainty.

Based on planning efforts to date, Comcast provides the following additional information regarding the timing of benefits that can be achieved through investments and product rollout. These benefits, **[[**

]], will begin immediately after close. For example, Comcast is planning the transition of TWC systems to all-digital in three waves, **{{**

}}. Within the first year after closing, Comcast anticipates **{{**

}} Within the first 18 months after closing, Comcast expects to offer **{{**

}} in select major markets and **{{** **}}** in as many markets as possible. During that period, it also expects to provide **{{** **}}** Comcast anticipates **[[** **]]** over the first 18 months, **{{** **}}** Such synergies are examples of the greater investment in technology and new products over a broader footprint that would occur following the Transactions. These will begin immediately after close, but the precise timing of such synergies depends on a number of factors and objectives which are still being assessed.

The timeline for the efficiencies and synergies identified in connection with the Divestiture Transactions is still being determined. The timeline and realization of the efficiencies identified above is not expected to be impacted by the Divestiture Transactions. Synergies related to enhanced investments to deliver advanced products and services over an expanded footprint will likely follow a similar timeline as those related to the TWC transactions.

84. Produce all documents (except documents solely relating to environmental, tax, human resources, OSHA, or ERISA issues) relating to the proposed TWC transaction and the proposed divestiture transactions, and provide for each transaction:

a. a timetable for each transaction, a description of all actions that must be taken prior to consummation of each transaction, and any harm that will result if the transactions are not consummated;

SUPPLEMENTAL RESPONSE:

84(a):

Comcast provides the following supplemental response to subpart (a) of this request.

2. Divestiture Transactions

The Divestiture Transactions will require additional time to close following the close of the Time Warner Cable Transaction.

Even after all the regulatory approvals required for the divestiture transaction have been received, certain financing transactions will need to be finalized before the Divestiture Transactions can be completed, including the following sequence of events:

- a tender offer by third party financial institutions for outstanding Comcast debt, which tender offer will be open for a minimum of 10 business days and can be further extended up to a total of 30 business days;

- a period of 14 calendar days following completion of the tender offer, during which time the third party financial institutions will hold the tendered Comcast debt; and

- an exchange by Comcast of newly issued SpinCo notes for the tendered Comcast debt prior to the spin-off.

The financing transactions described above will not commence until after completion of the Time Warner Cable Transaction and will themselves take at least 30 days to complete. Accordingly, even if all regulatory approvals for the Divestiture Transactions are received prior to completion of the Time Warner Cable Transaction, the time necessary to execute the financing transactions means that the Divestiture Transactions cannot close until at least 30 days after completion of the Time Warner Cable Transaction.

Further, because Comcast and Charter recognized that the regulatory approval process and the financing transactions would require that the Divestiture

Transactions be completed sometime after completion of the Time Warner Cable Transaction, they agreed to an "end date" for the Divestiture Transactions (i.e., a date by which, if the Divestiture Transactions are not completed, either party can terminate the Divestiture Transactions) that comes after completion of the Time Warner Cable Transaction. The "end date" for the Divestiture Transactions has two prongs: (1) if all necessary regulatory approvals (FCC, DOJ, LFA, PUC) for the Divestiture Transactions are received on or before the completion of the Time Warner Cable Transaction, the parties have 60 days (from completion of the Time Warner Cable Transaction) to complete the Divestiture Transactions (or 90 days if the financing transactions have started by the 60th day); (2) alternately, if all necessary regulatory approvals for the Divestiture Transactions are not received on or before the completion of the Time Warner Cable Transaction, the parties have 150 days (from completion of the Time Warner Cable Transaction) to complete the Divestiture Transactions (or 240 days if by the 75th day the parties have received all approvals except for the LFA/PUC approvals).

86. Produce all vertical foreclosure analysis, or other vertical competitive effects analysis, econometric modeling, or similar analyses, including those regarding market concentration or pricing, that have been undertaken by the Company or any consultant or expert hired by the Company to analyze the effect of the proposed TWC transaction and the proposed divestiture transactions, including all documents and data used in these analyses.

CLARIFYING RESPONSE:

Comcast **[[ ]]** what Comcast previously provided in response to Requests 23-25 along with the backup data and documents submitted related to those responses[61] and the backup data and documents submitted related to the initial and reply declarations of Dr. Mark Israel and Drs. Gregory Rosston and Michael Topper in this proceeding.[62] Any other materials **[[ ]]** would have been provided in Comcast's production of responsive documents to the FCC.

[61] *See* Letter from Kathryn A. Zachem, Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, MB. Docket No. 14-57 (Sept. 18, 2014) (enclosed CD-ROM).

[62] *See* Letter from Francis M. Buono, Counsel to Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, MB. Docket No. 14-57 (June 27, 2014) (enclosed CD-ROM); Letter from Francis M. Buono, Counsel to Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, MB. Docket No. 14-57 (Sept. 29, 2014) (enclosed CD-ROM).

88. Describe in detail the Company's plans to migrate subscribers acquired as a result of the proposed TWC transaction and the proposed divestiture transaction, including but not limited to:

b. any plans for relevant services and devices necessary to access the services to be offered to the acquired subscribers, including but not limited to (1) a detailed description of the Company's plans to provide these subscribers with devices that may be used on the Company's network and any associated charges to an acquired customer who is required to acquire such a device, and (2) the service plans, bundled services and pricing to be offered to the acquired customers;

CLARIFYING RESPONSE:

88(b):

Comcast hereby confirms that the "attached documentation" referred to in Comcast's September 11, 2014 response is a reference to Exhibits 88.1-88.4.

89. Provide the Company's data as specified in Attachment A, which seeks data relating: to active and potential business service addresses; internet traffic exchange and interconnection; subscriber and plan data; daily data on the capacity and use of IP points of presence; and, for Comcast, Charter and SpinCo after the consummation of the proposed divestiture transactions, monthly data for cable service on subscribers and locations served.

SUPPLEMENTAL RESPONSE:

Comcast provides the following responses to this request:

"CTWC Congestion spreadsheet table Final"

Information and data responsive to this exhibit request have been provided in machine-readable Excel spreadsheet and CSV format as Revised Exhibits 89.1 through 89.4. Revised Exhibits 89.1 through 89.3, which provide the data requested for Level 3 (Exhibit 89.1), Global Crossing (Exhibit 89.2), and Cogent (Exhibit 89.3), contain the following changes: (1) they conform the headers to the variable names set forth in the CTWC Congestion spreadsheet table Final, and also provide data for outbound traffic (i.e., traffic delivered by Comcast to Level 3, Global Crossing, and Cogent) that is marked "outbound"; (2) they list all dates from January 1, 2013, to May 31, 2014, for each IP point of presence in which Comcast exchanged traffic with the requested counterparty at any point during the requested period and provide data on all dates on which Comcast exchanged data traffic with each party **{{**

}}; (3) where Comcast did not interconnect with the party at a given IP POP on a particular date, entries contain a "dash"; where the parties did interconnect but data were not available (e.g., due to the unavailability of the measurement device), the entries contain a "dash"; otherwise, if the parties did interconnect but no traffic was actually exchanged, the entries would contain a "0."

Revised Exhibit 89.4 provides VOD and PPV revenue and usage. Transactional VOD and PPV revenue are provided in actual dollars; Free VOD usage is provided in the number of hours. PPV revenue has now been provided for all DMAs and for all days during the requested period where available.

"Interconnection Table – HB"

Information and data responsive to this exhibit request have been provided in machine-readable Excel spreadsheet as Revised Exhibit 89.5. Revised Exhibit 89.5 provides the following: traffic and capacity data are not available **[[**

]] and such entries contain a "dash"; where the parties did not interconnect and there was no revenue, such entries contain a "dash"; where the parties did interconnect but data were not available **[[**

]], the entries were left blank; otherwise, if the parties did interconnect but no traffic was actually exchanged or there was no revenue, non-recurring revenue, or recurring revenue, the entries contain a "0."

"CTWC Cable Services Final"

The FCC identified an error in Exhibit 89.12 as originally submitted, resulting in available Internet speeds being reported to exceed the maximum available speeds in some census blocks. This error was traced back to a coding error in the script that was used to create Exhibit 89.12 A revised version of Exhibit 89.12 is provided in machine-readable Excel spreadsheet format as Comcast FCC Exhibit 89.12 (Revised).

As stated in Comcast's Supplemental Responses dated September 19, 2014, Comcast maintains residential location data on a **[[**

]]. Consequently, the number of residential locations for each census block group is reported for every census block within the census block group. In other words, the residential location data reported in Exhibit 89.12 for an individual census block will be identical to the data reported for all other census blocks within the same census block group and will correspond to the residential location data for the census block group as a whole.

The residential location data reported in Exhibit 89.12 (Revised) were obtained by **[[**

]].

The subscriber information contained in Exhibit 89.12 (Revised) and Exhibit 89.13 was compiled as follows. For dates prior to 2011, subscriber data were sourced from the **[[** **]]** maintained by Comcast. To determine whether a customer subscribed to an Internet service, and if so, the speed of the customer's Internet service, data were provided by Comcast's Network Engineering & Technical Operations ("NE&TO") group. **[[**

]].

For dates subsequent to 2011, broadband subscriber data were obtained from the **[[**

]].

EXHIBIT 12

Exhibit 12

Entries to and Exits from Internet Traffic Exchange and CDN[1]			
Name and Address of Company	**Services Provided**	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area**
Global Crossing	Transit and peering links, Virtual Private Network (VPN), Leased lines, Audio and Video conferencing, Long distance telephone, managed services, dialup, colocation and VoIP.	Exit: October 2011	National
Apple, Inc. 1 Infinite Loop Cupertino, CA 95014	CDN	Entry: 2014	National
Cotendo	CDN	Exit: 2011	National
Fastly PO Box 78266 San Francisco, CA 94107	CDN	Entry: 2011	National
MaxCDN 3575 Cahuenga Blvd. West Suite 330 Los Angeles, CA 90068	CDN	Entry: 2009	National
Telestra 500A Huntmar Park Drive Herndon, VA 20170	CDN	Entry: 2009	National
Deutsche Telekom Friedrich-Ebert-Allee 140 53113 Bonn Germany	CDN	Entry: 2009	National
Telecom Italia 622 3rd Ave New York, NY 10017	CDN	Entry: 2009	National
Level 3 1025 Eldorado Boulevard Broomfield, Colorado 80021	CDN	Entry: 2010	National
British Telecom 7301 N State Highway 161 Suite 400 Irving, TX 75039	CDN	Entry: 2010	National
AT&T (EdgeCast) 208 S. Akard Street Dallas, TX 75202	CDN	Entry: 2011	National
KDDI 825 Third Avenue, 3rd Floor New York, NY 10022	CDN	Entry: 2011	National
TATA 1700 North Moore St, Suite 1520 Arlington, VA 22209-1911	CDN	Entry: 2011	National
CenturyLink 100 CenturyLink Drive Monroe, Louisiana 7201	CDN	Entry: 2011	National
Orange S.A. 78 rue Olivier de Serres Paris 75015 France	CDN	Entry: 2012	National
Telefonica Ronda de la Comunicación, s/n, 28050 Madrid, Spain	CDN	Entry: 2012	National
Verizon 140 West Street New York, NY 10007	CDN	Entry: 2013	National

[1] Comcast also refers the FCC to www.cdnlist.com, which provides an updated list of commercial CDN providers, including telecom or carrier-based CDN providers, and CDN-related vendor acquisitions and closures.

Exhibit 12

Entries to and Exits from Internet Access Service		
Name and Address of Company	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area[1]**
Google Fiber 1600 Amphitheatre Parkway Mountain View, CA 94043	Entry: 2011	Kansas City, MO; Austin, TX; Provo, UT
Qwest	Exit: 2011	
Towerstream Corp. Tech IV 88 Silva Lane Middletown, RI 02842	Entry: 2010	Boston, MA; Chicago; IL; Dallas, TX; Houston; TX; Los Angeles, CA; Miami, FL; New York, NY; San Francisco, CA; Seattle, WA; Philadelphia, PA; Nashville, TN; Las Vegas, NV; Reno, NV; Providence, RI
Leap Wireless International, Inc.	Exit: 2014	Nationwide
Clearwire Corporation	Exit: 2013	Various areas within the following states: California; Colorado; Connecticut; Delaware; Florida; Georgia; Hawaii; Idaho; Illinois; Kansas; Maryland; Massachusetts; Michigan; Minnesota; Minnesota; Missouri; Nevada; New Jersey; New York; North Carolina; Ohio; Oregon; Pennsylvania; Rhode Island; Tennessee; Texas; Utah; Virginia; and Washington
Insight Communications	Exit: August 2011	Various areas within the following states: Indiana; Kentucky; and Ohio
Knology Inc.	Exit: April 2012	Various areas within the following states: Alabama; Georgia; Florida; Iowa; Kansas; Minnesota; South Carolina; South Dakota; and Tennessee

[1] Company's footprint within each listed area may not reach all homes within that area.

Exhibit 12

Entries to and Exits from MVPD		
Name and Address of Company	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area[1]**
Google Inc. (Google Fiber) 1600 Amphitheatre Parkway Mountain View, CA 94043	Entry: 2011	Kansas City, MO; Austin, TX; Provo, UT
Centurylink Prism TV 100 CenturyLink Drive Monroe, Louisiana 7201	Entry: 2010	Phoenix, Mesa, Chandler, and Gilbert, AZ; Colorado Spring, Eagle, and Highlands Ranch, CO; Fort Myers, Orlando, and Tallahassee, FL; Columbia and Jefferson City, MO; Omaha, NE; Las Vegas, NV; Fayetteville and Wake Forest, NC; La Crosse, WI
Insight Communications	Exit: August 2011	Various areas within the following states: Indiana; Kentucky; and Ohio
Knology Inc.	Exit: April 2012	Various areas within the following states: Alabama; Georgia; Florida; Iowa; Kansas; Minnesota; South Carolina; South Dakota; and Tennessee

[1] Company's footprint within each listed area may not reach all homes within that area.

Exhibit 12

Entries to and Exits from Online Video Distribution			
Name and Address of Company	**Services Provided**	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area**
AOL, Inc. 770 Broadway New York, NY 10003	Internet-based video streaming through SlashControl	Entry: 2009	National
AT&T Inc. 208 S. Akard Street Dallas, TX 75202	Internet-based video streaming through AT&T Entertainment	Entry: September 2009	National
Clicker Media Inc. 6824 Melrose Avenue Los Angeles, CA 90038	Internet-based programming directory and video streaming at clicker.com	Entry: November 2009	National
Epix Studio 3 Partners LLC 1515 Broadway New York, NY 10036	Internet-based video streaming, VOD service, cable channel	Entry: October 2009	National
Home Box Office, Inc. 1100 Avenue of the Americas New York, NY 10036	Made-for-mobile television programming	Entry: February 2010	National
Ideal Media Financial Ltd. 6 The Coppens Stotfold, Hitchin Herts, SG5 4PJ United Kingdom	Internet-based video streaming at iReel.com	Entry: 2009	National
Jumpcut	Internet-based video streaming	Exit: June 2009	National
Vevo 825 8th Avenue, 23rd Floor New York, NY 10019	Internet-based video streaming	Entry: December 2009	National
Vreel Address Unknown	Internet-based video streaming	Exit: January 2010	National
National Geographic Channel 1145 17th Street NW Washington, DC 20036	Internet-based video streaming	Entry: March 2010	National
Better Black TV	Internet-based video streaming	Entry: November 2010	National
Joost c/o Adconion Media Group Ltd. 131-151 Great Tichfield Street London, W1W 5BB	Internet-based video streaming	Exit: 2012	National
Mediaflo Technologies 5775 Morehouse Drive San Diego, CA 92121	Internet-based video streaming through video console	Exit: 2011	National
MLB Advanced Media, LP 40 Hartz Way, Suite 10 Secaucus, NJ 07094	Internet-based video streaming	Entry: January 2009	National
Microsoft (Bing Video) One Microsoft Way Redmond, WA 98052	Internet-based video streaming	Entry: 2009	National
Net2Vu Harman Enterprises Ltd. C/o Trident Trust P.O. Box 146 Tortola, BVI	Internet-based video streaming	Exit: 2012	National
ZapmyTV 2207 Concord Pike Suite 619 Willmington, DE 19803	Internet-based video streaming	Entry: 2010	National

Entries to and Exits from Online Video Distribution			
Name and Address of Company	**Services Provided**	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area**
Zillion TV 3131 Jay Street Suite 200B Santa Clara, CA 95054	Internet-based video streaming	Entry: 2009	National
Oprah Winfrey Network, LLC	Internet-based video streaming	Entry: January 2011	National
RightNetwork	Internet-based video streaming	Entry: September 2010 Exit: 2011	National
Better Black TV	Internet-based video streaming	Entry: November 2010	National
UltraViolet Paramount Pictures 5555 Melrose Ave. Los Angeles, CA 90038	Internet-based video streaming	Entry: January 2012	National
Facebook 1601 Willow Rd. Menlo Park, CA 94025	Internet-based video streaming	Entry: 2011	National
DirectTV 2230 E Imperial Hwy El Segundo, CA 90245	Internet-based video streaming	Entry: May 2011	National
DISH Network 9601 S Meridian Blvd. Englewood, CO 80112	Internet-based video streaming	Entry: March 2012	National
Barnes & Noble NOOK Video 122 Fifth Avenue New York, NY	Internet-based video streaming	Entry: 2012	National
Aereo 455 Broadway New York, NY 10013	Internet-based video streaming	Entry: 2012 Exit: (Temporarily Suspended)	National
Sky Angel	Internet-based video streaming	Exit: 2013	National
Bohemia Visual Music 2328 E Van Buren Street Phoenix, AZ 85006-3949	Internet-based video streaming	Entry: 2011	National
Discovery Communications One Discovery Place Silver Spring, MD 20910	Internet-based video streaming	Entry: 2013	National
The Hayzlett Group 101 South Main Avenue, Fourth Floor Sioux Falls, SD 57104	Internet-based video streaming	Entry: 2014	National
Louisck.net 3 Arts Entertainment Inc. 9460 Wilshire Boulevard Floor 7 Beverly Hills, CA 90212	Internet-based video streaming	Entry: Approximately 2011	National
CBS Corporation 51 W. 52nd Street New York, NY 10019	Internet-based video streaming	Entry: 2014	National

Exhibit 12

Entries to and Exits from Video Programming				
Name and Address of Company	**Name of Programming Service**	**Programming Provided**	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area**
Black Entertainment Television 1235 W Street, NE Washington, DC 20018	Centric	General interest	Entry: September 2009	National
Discovery Communications One Discovery Place Silver Spring, MD 20910	TestTube	Internet-based educational programming	Entry: 2013	National
Studio 3 Partners LLC 1515 Broadway New York, NY 10036	Epix	Premium	Entry: October 2009	National
Liberman Broadcasting, Inc. 1845 Empire Avenue Burbank, CA 91504	Estrella TV	Spanish-language	Entry: September 2009	National
Fox Entertainment Group 10201 West Pico Boulevard Los Angeles, CA 90035	FOX Reality	Reality TV	Exit: March 2010	National
MLB Advanced Media, LP 40 Hartz Way, Suite 10 Secaucus, NJ 07094	MLB Network	Sports	Entry: January 2009	National
National Geographic Channel 1145 17th Street NW Washington, DC 20036	National Geographic Wild	Wildlife	Entry: March 2010	National
NHL Network 9 Channel Nine Court Scarborough, ON M1S 4B5 Canada	NHL Network	Sports	Entry: October 2007	National
Next One Interactive 2400 North Commerce Parkway, Suite 105 Weston, FL 33326	Resort & Residence TV	Lifestyle	Entry: November 2009	National
The Walt Disney Company 500 South Buena Vista Street Burbank, CA 91521	Disney XD	Children's Programming	Entry: February 2009	National
Oprah Winfrey Network, LLC 5700 Wilshire Blvd. Los Angeles, CA 90036	Oprah Winfrey Network	Entertainment	Entry: January 2011	National
RightNetwork	RightNetwork	News	Entry: September 2010 Exit: 2011	National
Better Black TV	Better Black TV	Entertainment	Entry: November 2010	National
Revolt TV 1800 N. Highland Avenue Los Angeles, CA 90028	Revolt TV	Music	Entry: October 2013	National
Participant Media 331 Foothill Rd. Beverly Hills, CA 90210	Pivot	Entertainment	Entry: May 2013	National
Magic Johnson Enterprises 9100 Wilshire Boulevard Suite 700 East Beverly Hills, CA 90212	Aspire	Entertainment	Entry: June 2012	National
The Walt Disney Company 500 South Buena Vista Street Burbank, CA 91521	Disney Junior	Children's Programming	Entry: February 2011	National
Discovery Communications 6505 Blue Lagoon Drive, Suite 190 Miami, FL 33126	Hub Network	Children's Programming	Entry: October 2010	National
Mint Entertainment 1918 N Mendell St. Chicago, IL 60642	Cinémoi	Movies	Entry: February 2009	National
Studio 3 Partners 1515 Broadway 43rd Floor New York, NY 10036	Epix	Movies	Entry: October 2009	National
Bohemia Visual Music 2328 E Van Buren Street Phoenix, AZ 85006-3949	Bohemia Visual Music	Music	Exit: March 2010	National
Cool Music Network 641 E. 22nd Street Lawrence, KS 66046	The CoolTV	Music	Entry: March 2009	National
Al Jazeera Media Network PO Box 23127 Doha - Qatar	Al Jazeera America	News	Entry: August 20, 2013	National
The Walt Disney Company 500 South Buena Vista Street Burbank, CA 91521	Fusion	News	Entry: October 28, 2013	National
Herring Networks	One America News Network	News	Entry: July 4, 2013	National
Weather Nation TV 8101 East Prentice Avenue Suite 700 Greenwood Village, CO 80111	Weather Nation TV	News	Entry: October 2010	National
Al Jazeera Media Network PO Box 23127 Doha - Qatar	BeIN Sports	Sports	Entry: August 2012	National

Entries to and Exits from Video Programming				
Name and Address of Company	**Name of Programming Service**	**Programming Provided**	**Date of Entry Into and, if Applicable, Exit From the Market**	**Service Area**
Channel Zero 2844 Dundas St. W Toronto, ON M6P 1Y7	Fight Now TV	Sports	Entry: May 2011	National
Fox Entertainment Group 10201 West Pico Boulevard Los Angeles, CA 90035	Fox Soccer Plus	Sports	Entry: March 2010	National
Fox Entertainment Group 10201 West Pico Boulevard Los Angeles, CA 90035	Fox Sports 1	Sports	Entry: August 2013	National
Fox Entertainment Group 10201 West Pico Boulevard Los Angeles, CA 90035	Fox Sports 2	Sports	Entry: August 2013	National
ESPN, Inc. ESPN Plaza 935 Middle Street Bristol, CT 06010	Longhorn Network	Sports	Entry: August 2011	National
Pac-12 Network 360 3rd Street 3rd Floor San Francisco, California 94107 United States	Pac-12 Network	Sports	Entry: August 2011	National
DIRECTV Sports Networks Seattle, WA 98101 United States	Root Sports	Sports	Entry: April 2011	National
The Genuine Gemstone Company Eagle Road Studios, Eagle Road Redditch Worcestershire B98 9HF	Rocks TV	Shopping	Entry: July 2012	National
Soundview Africa	Afrotainment	Movies	Entry: October 2012	National
Mercury Studios/TheBlaze P.O. Box 143189 Irving, TX 75014	The Blaze	News	Entry: 2012	National
El Rey Network Tres Pistoleros Studios 4900 Old Manor Road Austin, TX 78723	El Rey	General entertainment	Entry: 2013	National
The Hayzlett Group 101 South Main Avenue, Fourth Floor Sioux Falls, SD 57104	C-Suite TV	Internet-based news programming	Entry: 2014	National
TAPP Media LLC	Sarah Palin Channel	Internet-based news programming	Entry: 2014	National
Louisck.net 3 Arts Entertainment Inc. 9460 Wilshire Boulevard Floor 7 Beverly Hills, CA 90212	Louisck.net	Internet based general entertainment	Entry: approximately 2011	National