

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D. C. 20549**

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 001-36713

LIBERTY BROADBAND CORPORATION

(Exact name of Registrant as specified in its charter)

State of Delaware
(State or other jurisdiction of
incorporation or organization)

47-1211994
(I.R.S. Employer
Identification No.)

12300 Liberty Boulevard
Englewood, Colorado
(Address of principal executive offices)

80112
(Zip Code)

Registrant's telephone number, including area code: **(720) 875-5700**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Series A common stock	LBRDA	The Nasdaq Stock Market LLC
Series C common stock	LBRDK	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: Yes No

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the voting and non-voting stock held by non-affiliates of Liberty Broadband Corporation computed by reference to the last sales price of such stock, as of the closing of trading on June 28, 2019, was \$18.0 billion.

The number of outstanding shares of Liberty Broadband Corporation common stock as of January 31, 2020 was:

	Series A	Series B	Series C
Liberty Broadband Corporation common stock	26,493,289	2,451,828	152,957,753

Documents Incorporated by Reference

The Registrant's definitive proxy statement for its 2020 Annual Meeting of Stockholders is hereby incorporated by reference into Part III of this Annual Report on Form 10-K.

**LIBERTY BROADBAND
CORPORATION
2019 ANNUAL REPORT ON FORM 10-K**

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PART I.

Item 1. Business.

General Development of Business

Spin-Off of Liberty Broadband from Liberty Media Corporation

During May 2014, the board of directors of Liberty Media Corporation and its subsidiaries (“Liberty”) authorized management to pursue a plan to spin-off to its stockholders common stock of a wholly-owned subsidiary, Liberty Broadband Corporation (“Liberty Broadband” or the “Company”), and to distribute subscription rights to acquire shares of Liberty Broadband’s common stock (the “Broadband Spin-Off”). Liberty Broadband was formed in 2014 as a Delaware corporation. At the time of the Broadband Spin-Off, Liberty Broadband was comprised of, (i) Liberty’s former interest in Charter Communications, Inc. (“Legacy Charter”), (ii) Liberty’s former wholly-owned subsidiary TruePosition, Inc. (“TruePosition”), (iii) Liberty’s former minority equity investment in Time Warner Cable, Inc. (“Time Warner Cable”, “TWC”, “Legacy Time Warner Cable” or “Legacy TWC”), (iv) certain deferred tax liabilities, as well as liabilities related to the Time Warner Cable written call options and (v) initial indebtedness, pursuant to margin loans entered into prior to the completion of the Broadband Spin-Off. The Broadband Spin-Off was accounted for at historical cost due to the pro rata nature of the distribution to holders of Liberty common stock.

In the Broadband Spin-Off, record holders of Liberty’s former Series A, Series B and Series C common stock received one-fourth of a share of the corresponding series of Liberty Broadband common stock for each share of Liberty common stock held by them, with cash paid in lieu of fractional shares. In addition, following the completion of the Broadband Spin-Off, on December 10, 2014, Liberty Broadband stockholders received a subscription right to acquire one share of Liberty Broadband Series C common stock for every five shares of Liberty Broadband common stock. The Broadband Spin-Off and rights offering were intended to be tax-free to stockholders of Liberty and Liberty Broadband, respectively. During September 2015, Liberty entered into a closing agreement with the Internal Revenue Service (“IRS”) which provided that the Broadband Spin-Off qualified for tax-free treatment.

Following the Broadband Spin-Off, Liberty and Liberty Broadband operate as separate, publicly traded companies, and neither has any stock ownership, beneficial or otherwise, in the other. In connection with the Broadband Spin-Off, Liberty and Liberty Broadband entered into certain agreements in order to govern certain of the ongoing relationships between the two companies after the Broadband Spin-Off and to provide for an orderly transition. These agreements include a reorganization agreement, a services agreement, a facilities sharing agreement and a tax sharing agreement.

The reorganization agreement provides for, among other things, the principal corporate transactions (including the internal restructuring) required to effect the Broadband Spin-Off, certain conditions to the Broadband Spin-Off and provisions governing the relationship between Liberty Broadband and Liberty with respect to and resulting from the Broadband Spin-Off. The tax sharing agreement provides for the allocation and indemnification of tax liabilities and benefits between Liberty and Liberty Broadband and other agreements related to tax matters. Pursuant to the services agreement, Liberty provides Liberty Broadband with general and administrative services including legal, tax, accounting, treasury and investor relations support. See below for a description of an amendment to the services agreement in December 2019. Under the facilities sharing agreement, Liberty Broadband shares office space with Liberty and related amenities at Liberty’s corporate headquarters. Liberty Broadband will reimburse Liberty for direct, out-of-pocket expenses incurred by Liberty in providing these services and for costs that will be negotiated semi-annually.

In December 2019, the Company entered into an amendment to the services agreement with Liberty in connection with Liberty’s entry into a new employment arrangement with Gregory B. Maffei, the Company’s President and Chief Executive Officer. Under the amended services agreement, components of his compensation will either be paid directly to him by each of the Company, Liberty TripAdvisor Holdings, Inc., GCI Liberty, Inc., and Qurate Retail, Inc. (collectively, the “Service Companies”) or reimbursed to Liberty, in each case, based on allocations among Liberty and the Service Companies set forth in the amended services agreement, currently set at 18% for the Company. The new agreement provides for a five year employment term which began on January 1, 2020 and ends December 31, 2024, with an aggregate annual base salary of \$3 million (with no contracted increase), an aggregate one-time cash commitment bonus of \$5 million, an aggregate annual target cash performance bonus of \$17 million, aggregate annual equity awards of \$17.5 million and aggregate equity awards granted in connection with

his entry into his new agreement of \$90 million (the “upfront awards”). A portion of the grants made to our CEO in the year ended December 31, 2019 related to our company’s allocable portion of these upfront awards.

Charter’s Time Warner Cable Merger and Bright House Transaction

On May 18, 2016, Time Warner Cable merged with Legacy Charter (the “Time Warner Cable Merger”). In connection with the Time Warner Cable Merger, Legacy Charter underwent a corporate reorganization, resulting in CCH I, LLC, a former subsidiary of Legacy Charter (“Charter”), becoming the new publicly traded parent company. Also on May 18, 2016, the previously announced acquisition of Bright House Networks, LLC (“Bright House” or “Legacy Bright House”) from Advance/Newhouse Partnership (“A/N”) by Charter (the “Bright House Transaction”) was completed. In connection with the Time Warner Cable Merger and Bright House Transaction, Liberty Broadband entered into certain agreements with Legacy Charter, Charter, Liberty Interactive Corporation (“Liberty Interactive”) (now known as Qurate Retail, Inc.) and Time Warner Cable. In connection with the Time Warner Cable Merger and Bright House Transaction (collectively, the “Transactions”), Liberty Broadband exchanged its shares of Time Warner Cable for shares of Charter and purchased additional shares of Charter. Liberty Broadband’s overall voting interest is diluted by the outstanding A/N interest in a subsidiary of Charter because the A/N interest has voting rights in Charter. As a result, and pursuant to proxy agreements with GCI Liberty, Inc. and A/N, Liberty Broadband controls 25.01% of the aggregate voting power of Charter. For further discussion of the Transactions, see “Narrative Description of Business.”

* * * * *

Certain statements in this Annual Report on Form 10-K constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding business, product and marketing strategies; new service and product offerings; future expenses; anticipated changes to regulations; the recognition of deferred revenue; the recoverability of our goodwill and other long-lived assets; competition; the performance, results of operations and cash flows of our equity affiliate; projected sources and uses of cash; indebtedness and the anticipated non-material impact of certain contingent liabilities related to legal and tax proceedings and other matters arising in the ordinary course of business. In particular, statements under Item 1. “Business,” Item 1A. “Risk Factors,” Item 2. “Properties,” Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and Item 7A. “Quantitative and Qualitative Disclosures About Market Risk” contain forward-looking statements. Forward-looking statements inherently involve many risks and uncertainties that could cause actual results to differ materially from those projected in these statements. Where, in any forward-looking statement, we express an expectation or belief as to future results or events, such expectation or belief is expressed in good faith and believed to have a reasonable basis, but such statements necessarily involve risks and uncertainties and there can be no assurance that the expectation or belief will result or be achieved or accomplished. The following include some but not all of the factors that could cause actual results or events to differ materially from those anticipated:

- Charter’s ability to sustain and grow revenue and cash flow from operations by offering video, Internet, voice, mobile, advertising and other services to residential and commercial customers, to adequately meet the customer experience demands in its service areas and to maintain and grow its customer base, particularly in the face of increasingly aggressive competition, the need for innovation and the related capital expenditures;
- the impact of competition from other market participants, including but not limited to incumbent telephone companies, direct broadcast satellite (“DBS”) operators, wireless broadband and telephone providers, digital subscriber line (“DSL”) providers, fiber to the home providers, and providers of video content over broadband Internet connections;
- Charter’s ability to obtain programming at reasonable prices or to raise prices to offset, in whole or in part, the effects of higher programming costs (including retransmission consents);
- Charter’s ability to develop and deploy new products and technologies, including mobile products and any other consumer services and service platforms;
- the effects of governmental regulation on the business of our equity affiliate and our operating subsidiary, including costs, disruptions and possible limitations on Charter’s operating flexibility related to, and its ability to comply with, regulatory conditions applicable to Charter as a result of the Transactions;
- general business conditions, economic uncertainty or downturn, unemployment levels and the level of activity in the housing sector;

- any events that disrupt Charter’s or Skyhook’s networks, information systems or properties and impair their operating activities or negatively impact their respective reputation;
- failure to protect the security of personal information about the customers of our operating subsidiary and equity affiliate, subjecting us to costly government enforcement actions or private litigation and reputational damage;
- changes in, or failure or inability to comply with, government regulations, including, without limitation, regulations of the Federal Communications Commission (“FCC”), and adverse outcomes from regulatory proceedings;
- the ability to retain and hire key personnel;
- the ability of suppliers and vendors to deliver products, equipment, software and services;
- the outcome of any pending or threatened litigation;
- changes in the nature of key strategic relationships with partners, vendors and joint venturers;
- the availability and access, in general, of funds to meet debt obligations prior to or when they become due and to fund operations and necessary capital expenditures, either through (i) cash on hand, (ii) free cash flow, or (iii) access to the capital or credit markets;
- the ability of Charter and our company to comply with all covenants in their and our respective debt instruments, any violation of which, if not cured in a timely manner, could trigger a default of other obligations under cross-default provisions; and
- our ability to successfully monetize certain of our assets.

These forward-looking statements and such risks, uncertainties and other factors speak only as of the date of this Annual Report, and we expressly disclaim any obligation or undertaking to disseminate any updates or revisions to any forward-looking statement contained herein, to reflect any change in our expectations with regard thereto, or any other change in events, conditions or circumstances on which any such statement is based. When considering such forward-looking statements, you should keep in mind the factors described in Item 1A, "Risk Factors" and other cautionary statements contained in this Annual Report. Such risk factors and statements describe circumstances which could cause actual results to differ materially from those contained in any forward-looking statement.

This Annual Report includes information concerning Charter, a public company that files reports and other information with the Securities and Exchange Commission (the “SEC”) in accordance with the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Information in this Annual Report concerning Charter has been derived from the reports and other information filed by it with the SEC. If you would like further information about Charter, the reports and other information it files with the SEC can be accessed on the Internet website maintained by the SEC at www.sec.gov. Those reports and other information are not incorporated by reference in this Annual Report.

Narrative Description of Business

Charter Communications, Inc.

Introduction

Charter is the second largest cable operator in the United States and a leading broadband communications services company providing video, Internet and voice services to approximately 29.2 million residential and small and medium business customers at December 31, 2019. Charter also offers mobile services to residential customers and recently launched mobile service to small and medium business customers. In addition, Charter sells video and online advertising inventory to local, regional and national advertising customers and tailored communications and managed solutions to larger enterprise customers. Charter also owns and operates regional sports networks and local sports, news and community channels.

Charter owns and operates a high-capacity, two-way telecommunications network which passes over 52 million households and small and medium businesses across the United States. Charter’s core strategy is to use its network to deliver high quality products at competitive prices, combined with outstanding service. This strategy, combined with simple, easy to

understand pricing and packaging, is central to Charter's goal of growing its customer base while selling more of its core connectivity services, which include both fixed and mobile Internet, video and voice services, to each individual customer. Charter executes this strategy by managing its operations in a consumer-friendly, efficient and cost-effective manner. Charter's operating strategy includes insourcing nearly all of its customer care and field operations workforces, which results in higher quality service delivery. While an insourced operating model can increase the field operations and customer care costs associated with individual service transactions, the higher quality nature of insourced labor service transactions significantly reduces the volume of service transactions per customer, more than offsetting the higher investment made in each insourced service transaction. As Charter reduces the number of service transactions and recurring costs per customer relationship, Charter continues to provide its customers with products and prices that Charter believes provides more value than what its competitors offer. The combination of offering high quality, competitively priced products and outstanding service, allows Charter to both increase the number of customers it serves over its fully deployed network, and to increase the number of products it sells to each customer. That combination also reduces the number of service transactions Charter performs per relationship, yielding higher customer satisfaction and lower customer churn, resulting in lower costs to acquire and serve customers.

Charter has enhanced its service operations to allow its customers to (1) more frequently interact with Charter through its customer website and Spectrum TV application, online chat and social media, (2) have their services installed at the time and in the manner of their own choosing, including self-installation, and (3) receive a variety of video packages on an increasing number of connected devices, including those owned by Charter and those owned by the customer. By offering its customers growing levels of choices in how they receive and install their services and how they interact with Charter, Charter is driving higher overall levels of customer satisfaction and reducing its operating costs and capital expenditures per customer relationship. Ultimately, this operating strategy enables Charter to offer high quality, competitively priced services profitably, while continuing to invest in new products and services.

The capability and functionality of Charter's two-way network continues to grow in a number of areas, especially with respect to wireless connectivity. Charter's Internet service offers consumers the ability to wirelessly connect to its network using WiFi technology. Charter estimates that over 300 million devices are wirelessly connected to its network through WiFi. Initially, Charter's wireless strategy focused on offering wireless connectivity solutions inside the home and business using WiFi. Through Charter's mobile virtual network operator ("MVNO") reseller agreement with Verizon Communications Inc. ("Verizon"), Charter is now able to offer Internet connectivity to its customers beyond the home via its Spectrum mobile product. Charter is also actively testing and evaluating opportunities for its customers to wirelessly connect to its network using a combination of licensed and unlicensed radio spectrum to deliver fixed and mobile service directly from its distributed, high capacity network.

Time Warner Cable Merger

On May 18, 2016, the previously announced Time Warner Cable Merger was completed, which resulted in Legacy Charter and TWC becoming wholly owned subsidiaries of Charter, which was a wholly owned subsidiary of Legacy Charter at the time. As a result of the Time Warner Cable Merger, Charter became the new public parent company that holds the operations of the combined companies and was renamed Charter Communications, Inc. Pursuant to the terms of the merger agreement, upon consummation of the Time Warner Cable Merger, 285 million outstanding shares of TWC common stock were converted into 143 million shares of Charter Class A common stock valued at approximately \$32 billion as of the date of acquisition. In addition, TWC shareholders (excluding Liberty Broadband and Liberty Interactive) received approximately \$28 billion in cash. As of May 18, 2016, the total value of the Time Warner Cable Merger was approximately \$85 billion, including cash, equity and TWC assumed debt. The purchase price also includes an estimated pre-combination vesting period fair value of \$514 million for equity awards converted into Charter awards upon closing of the Time Warner Cable Merger and \$69 million of cash paid to former TWC employees and non-employee directors who held equity awards, whether vested or not vested.

Bright House Transaction

Also, on May 18, 2016, Charter and A/N completed the previously announced Bright House Transaction, pursuant to a definitive Contribution Agreement. Pursuant to the Bright House Transaction, Charter became the owner of the membership interests in Bright House and the other assets primarily related to Bright House (other than certain excluded assets and liabilities and non-operating cash). As of the date of acquisition, the purchase price totaled approximately \$12.2 billion consisting of (a) \$2 billion in cash, (b) 25 million convertible preferred units of Charter Communications Holdings, LLC ("Charter Holdings") with a face amount of \$2.5 billion that pay a 6% annual preferential dividend, (c) approximately 31.0 million common units of Charter Holdings that are exchangeable into Charter Class A common stock on a one-for-one basis and (d) one share of Charter Class B common stock.

Liberty Broadband Transactions

In connection with the Time Warner Cable Merger, Charter and Liberty Broadband completed their previously announced transactions pursuant to their investment agreement, in which Liberty Broadband purchased for cash approximately 22.0 million shares of Charter Class A common stock valued at \$4.3 billion at the closing of the Time Warner Cable Merger to partially finance the cash portion of the Time Warner Cable Merger consideration. In connection with the Bright House Transaction, Liberty Broadband purchased approximately 3.7 million shares of Charter Class A common stock valued at \$700 million at the closing of the Bright House Transaction. See note 5 to the accompanying consolidated financial statements for more information on the Transactions.

Products and Services

Charter offers its customers subscription-based video services, Internet services, and voice and mobile services. Charter's services are offered to residential and commercial customers on a subscription basis, with prices and related charges based on the types of service selected, whether the services are sold as a "bundle" or on an individual basis, and based on the equipment necessary to receive Charter's services. Bundled services are available to substantially all of Charter's passings, and approximately 57% of Charter's residential customers subscribe to a bundle of services, including some combinations of Charter's video, Internet and/or voice products.

The following table from Charter's Form 10-K for the year ended December 31, 2019 summarizes Charter's customer statistics for video, Internet, mobile and voice as of December 31, 2019 and 2018 (in thousands except per customer data and footnotes).

	Approximate as of December 31,	
	2019 (a)	2018 (a)
Customer Relationships (b)		
Residential	27,277	26,270
Small and Medium Business	1,958	1,833
Total Customer Relationships	<u>29,235</u>	<u>28,103</u>
Residential Primary Service Units ("PSUs")		
Video	15,620	16,104
Internet	24,908	23,625
Voice	9,443	10,135
	<u>49,971</u>	<u>49,864</u>
Monthly Residential Revenue per Residential Customer (c)	\$ 112.63	\$ 111.56
Small and Medium Business PSUs		
Video	524	502
Internet	1,756	1,634
Voice	1,144	1,051
	<u>3,424</u>	<u>3,187</u>
Monthly Small and Medium Business Revenue per Customer (d)	\$ 169.90	\$ 174.88
Mobile Lines	1,082	134
Enterprise PSUs (e)	267	248

- (a) Charter calculates the aging of customer accounts based on the monthly billing cycle for each account. On that basis, as of December 31, 2019 and 2018, customers include approximately 154,200 and 217,600 customers, respectively, whose accounts were over 60 days past due, approximately 13,500 and 24,000 customers, respectively, whose accounts were over 90 days past due, and approximately 10,000 and 19,200 customers, respectively, whose accounts were over 120 days past due.
- (b) Customer relationships include the number of customers that receive one or more levels of service, encompassing video, Internet and voice services, without regard to which service(s) such customers receive. Customers who reside in

residential multiple dwelling units (“MDUs”) and that are billed under bulk contracts are counted based on the number of billed units within each bulk MDU. Total customer relationships exclude enterprise and mobile-only customer relationships.

- (c) Monthly residential revenue per residential customer is calculated as total residential video, Internet and voice annual revenue divided by twelve divided by average residential customer relationships during the respective year. Monthly residential revenue per residential customer excludes mobile revenue and customers.
- (d) Monthly small and medium business revenue per customer is calculated as total small and medium business annual revenue divided by twelve divided by average small and medium business customer relationships during the respective year. Monthly small and medium business revenue per small and medium customer excludes mobile revenue and customers.
- (e) Enterprise PSUs represent the aggregate number of fiber service offerings counting each separate service offering at each customer location as an individual PSU.

Residential Services

Video Services

Charter’s video customers receive a package of programming which generally includes a digital set-top box that provides an interactive electronic programming guide with parental controls, access to pay-per-view services, including video on demand (“VOD”) (available to nearly all of its passings), and the ability to view certain video services on third-party devices inside and outside the residence. Customers have the option to purchase additional tiers of services including premium channels which provide original programming, commercial-free movies, sports, and other special event entertainment programming. Substantially all of Charter’s video programming is available in high definition. Charter also offers certain video packages containing a limited number of channels via its cable television systems.

In the vast majority of its footprint, Charter offers VOD service which allows customers to select from over 60,000 titles at any time. VOD programming options may be accessed for free if the content is associated with a customer’s linear subscription, or for a fee on a transactional basis. VOD services are also offered on a subscription basis included in a digital tier premium channel subscription or for a monthly fee. Pay-per-view channels allow customers to pay on a per-event basis to view a single showing of a one-time special sporting event, music concert, or similar event on a commercial-free basis.

Charter’s goal is to provide its video customers with the programming they want, when they want it, on any device. Digital video recorder (“DVR”) service enables customers to digitally record programming and to pause and rewind live programming. Customers can also use the Spectrum TV application on Internet Protocol (“IP”) devices to watch over 375 channels of cable TV, in home and approximately 275 channels out of home and view VOD programming. Customers are increasingly accessing their subscription video content through connected IP devices via Charter’s IP network. In 2019, Charter launched cloud DVR service which allows customers to schedule, record and watch their favorite programming anytime from connected IP devices as well as SpectrumTV.com. Charter’s video customers also have access to programmer authenticated applications and websites (known as TV Everywhere services) such as HBO Go, Fox Now, Discovery Go and ESPN.

Charter deploys Spectrum Guide®, its network or “cloud-based” user interface, to new video customers in the majority of its service areas. Spectrum Guide runs on traditional set-top boxes, but offers a look and feel similar to that of Charter’s Spectrum TV application. Spectrum guide also provides access to third-party video applications such as Netflix.

Internet Services

Charter’s Spectrum pricing and packaging (“SPP”) offers an entry level Internet download speed of at least 200 megabits per second (“Mbps”) in approximately 60% of its footprint and 100 Mbps across approximately 40% of its footprint, which among other things, allows several people within a single household to stream high definition (“HD”) television video content while simultaneously using their Internet service for other purposes. Additionally, leveraging DOCSIS 3.1 technology, Charter offers 940 Mbps speed service (“Spectrum Internet Gig”) in nearly all of its footprint. Finally, Charter offers a security suite with its Internet services which, upon installation by customers, provides protection against computer viruses and spyware and includes parental control features.

Charter offers an in-home WiFi product that provides customers with high performance wireless routers to maximize their in-home wireless Internet experience. At the end of 2019, Charter launched its advanced in-home WiFi product in select service areas and plans to continue to roll this product out to its entire footprint throughout 2020 and 2021. Advanced in-home WiFi provides connected device visibility, management and control to customers in a single application and to customer service agents to help support its customers. Advanced in-home WiFi is built on a software platform that will allow Charter to integrate and launch additional network based security and control features.

Voice Services

Charter provides voice communications services using voice over Internet protocol (“VoIP”) technology to transmit digital voice signals over its network. Charter’s voice services include unlimited local and long distance calling to the United States, Canada, Mexico and Puerto Rico, voicemail, call waiting, caller ID, call forwarding and other features and offers international calling either by the minute, or through packages of minutes per month. For customers that subscribe to both voice and video offerings, caller ID on TV is also available in most areas.

Mobile Services

At the end of the second quarter of 2018, Charter launched its mobile product, Spectrum Mobile, to residential customers under its MVNO reseller agreement with Verizon. Charter currently offers its Spectrum Mobile service to residential customers subscribing to its Internet service and recently launched mobile service to small and medium business customers. In the second quarter of 2019, Charter expanded its Spectrum Mobile bring-your-own-device program across all sales channels to include a broader set of devices which it believes lowers the cost for consumers of switching mobile carriers, and reduces the short-term working capital impact of selling new mobile devices on installment plans. Charter believes Spectrum-branded mobile services will drive more sales of its core products, create longer customer lives and increase profitability and cash flow over time. As Charter continues to grow its mobile services, including 5G in 2020, it expects that Spectrum Mobile will require an initial funding period to grow the product as well as negative working capital impacts from the timing of device-related cash flows when it sells the handset or tablet to customers pursuant to equipment installment plans.

Charter plans to use its WiFi network in conjunction with additional unlicensed, and potentially licensed spectrum to improve network performance and expand capacity to offer consumers a superior mobile service at a lower total cost to Charter. Further, Charter has experimental wireless licenses from the Federal Communications Commission (“FCC”) that it is utilizing to test next generation mobile services in several service areas around the country.

Charter intends to consider and pursue opportunities in the mobile space which may include the acquisition of licensed spectrum and may include entering into or expanding joint ventures or partnerships with wireless or cable providers which may require significant investment.

Commercial Services

Charter offers scalable broadband communications solutions for businesses and carrier organizations of all sizes, selling Internet access, data networking, fiber connectivity to cellular towers and office buildings, video entertainment services and business telephone services.

Small and Medium Business

Spectrum Business® offers Internet, voice and video services to small and medium businesses over its hybrid fiber coaxial network. In addition, in 2019, Charter began offering its Spectrum Mobile service to small and medium business customers. Spectrum Business includes a full range of video programming and entry-level Internet speeds of 200 Mbps downstream and 10 Mbps upstream in virtually all of its markets. Additionally, customers can upgrade their Internet speeds by purchasing Internet Ultra (400 Mbps downstream) or Internet Gig (940 Mbps downstream). Spectrum Business also includes a set of business services including static IP and business WiFi, e-mail and security, and multi-line telephone services with more than 30 business features including web-based service management, that are generally not available to residential customers.

Enterprise

Spectrum Enterprise offers more tailored communications products and managed service solutions to larger businesses, as well as high-capacity last-mile data connectivity services to mobile and wireline carriers on a wholesale basis. Spectrum Enterprise's product portfolio includes fiber Internet access, voice trunking services, unified messaging/unified communications, Ethernet services that privately and securely connect geographically dispersed client locations, and video solutions designed to meet the needs of hospitality, education, and healthcare clients. In addition, in 2019, Spectrum Enterprise launched an innovative Hybrid Software-Defined Wide Area Network that enables businesses to leverage the performance of Ethernet, the ubiquity of Internet connectivity and the flexibility of a software-defined solution to solve a wide array of business communications and networking challenges. Spectrum Enterprise combines its large, serviceable footprint and robust portfolio of fiber lit buildings with a sizeable partner network to effectively serve enterprise customers nationally. These customers can benefit from obtaining advanced services from a single provider, receiving a consistent solution while simplifying procurement and potentially reducing their costs.

Advertising Services

Charter's advertising sales division, Spectrum Reach®, offers local, regional and national businesses the opportunity to advertise in individual and multiple service areas on cable television networks and digital outlets. Charter receives revenue from the sale of local advertising across various platforms for networks such as MTV, CNN and ESPN. In any particular service area, Charter typically inserts local advertising on 40 to 90 channels. Charter's large footprint provides opportunities for advertising customers to address broader regional audiences from a single provider and thus reach more customers with a single transaction. Charter's size also provides scale to invest in new technology to create more targeted and addressable advertising capabilities.

Available advertising time is generally sold by Charter's advertising sales force. In some service areas, Charter has formed advertising interconnects or entered into representation agreements with other video distributors, including, among others, Verizon, AT&T Inc. ("AT&T"), and Comcast Corporation, under which Charter sells advertising on behalf of those operators. In other service areas, Charter enters into representation agreements under which another operator in the area will sell advertising on its behalf. These arrangements enable Charter and its partners to deliver linear commercials across wider geographic areas, replicating the reach of local broadcast television stations to the extent possible. In addition, Charter enters into interconnect agreements from time to time with other cable operators, which, on behalf of a number of video operators, sells advertising time to national and regional advertisers in individual or multiple service areas.

Additionally, Charter sells the advertising inventory of its owned and operated local sports and news channels, of its regional sports networks that carry Los Angeles Lakers' basketball games and other sports programming and of SportsNet LA, a regional sports network that carries Los Angeles Dodgers' baseball games and other sports programming.

In 2019, Charter began expanding its deployment of household addressability, which allows for more precise targeting within various parts of its footprint. Charter also began the roll-out of its Ad Portal, which allows small businesses to purchase local cable advertising and/or creative services via its web portal with no sales personnel interaction at a fee within their budgets. Both products will be more widely deployed in 2020. They join Charter's fully deployed Audience App, which uses its proprietary set-top box viewership data (all anonymized and aggregated) to optimize linear inventory, in its suite of advanced advertising products available to the marketplace.

Other Services

Regional Sports and News Networks

Charter has an agreement with the Los Angeles Lakers for rights to distribute all locally available Los Angeles Lakers' games through 2033. Charter broadcasts those games on its regional sports network, Spectrum SportsNet. American Media Productions, LLC ("American Media Productions"), an unaffiliated third party, owns SportsNet LA, a regional sports network carrying the Los Angeles Dodgers' baseball games and other sports programming. In accordance with agreements with American Media Productions, Charter acts as the network's exclusive affiliate and advertising sales representative and has certain branding and programming rights with respect to the network. In addition, Charter provides certain production and technical services to American Media Productions. The affiliate, advertising, production and programming agreements continue through 2038. Charter

also owns 26.8% of Sterling Entertainment Enterprises, LLC (doing business as SportsNet New York), a New York City-based regional sports network that carries New York Mets' baseball games as well as other regional sports programming.

Charter manages 28 local news channels, including Spectrum News NY1® and LA1, 24-hour news channels focused on New York City and Los Angeles, respectively. Charter's local news channels provide 24/7 hyperlocal content, focusing on news, programming and storytelling that addresses the deeper needs and interests of the diverse communities and neighborhoods it serves.

Pricing of Charter's Products and Services

Charter's revenue is principally derived from the monthly fees customers pay for the services Charter provides. Charter typically charges a one-time installation fee which is sometimes waived or discounted in certain sales channels during certain promotional periods.

Charter's Spectrum pricing and packaging generally offers a standardized price for each tier of service, bundle of services, and add-on service in a service area. Charter sells video and Internet packages with the option to add on voice and mobile services at attractive pricing. Charter's mobile customers can choose one of two simple ways to pay for data. Customers can choose an unlimited data plan or a by-the-gig data usage plan. Both plans include free nationwide talk and text and customers can easily switch between mobile data plans during the month. Customers can also purchase mobile devices and accessory products and have the option to pay for devices under interest-free monthly installment plans.

Charter's Network Technology

Charter's network includes three key components: a national backbone, regional/metro networks and a "last-mile" network. Both its national backbone and regional/metro network components utilize a redundant IP ring/mesh architecture. The national backbone component provides connectivity from regional demarcation points to nationally centralized content, connectivity and services. The regional/metro network components provide connectivity between the regional demarcation points and headends within a specific geographic area and enable the delivery of content and services between these network components.

Charter's last-mile network utilizes a hybrid fiber coaxial cable ("HFC") architecture, which combines the use of fiber optic cable with coaxial cable. In most systems, Charter delivers its signals via fiber optic cable from the headend to a group of nodes, and uses coaxial cable to deliver the signal from individual nodes to the homes served by that node. For Charter's fiber Internet, Ethernet, carrier wholesale, Session Initiation Protocol and Primary Rate Interface Spectrum Enterprise customers, fiber optic cable is extended from individual nodes to the customer's site. For certain new build and MDU sites, Charter increasingly brings fiber to the customer site. Charter's design standard allows spare fiber strands to each node to be utilized for additional residential traffic capacity, and enterprise customer needs as they arise. Charter believes that this hybrid network design provides high capacity and signal quality.

HFC architecture benefits include:

- bandwidth capacity to enable traditional and two-way video and broadband services;
- dedicated bandwidth for two-way services; and
- signal quality and high service reliability.

Charter's systems provide an all-digital platform, leveraging DOCSIS 3.1 technology and bandwidth of 750 megahertz or greater to approximately 100% of its estimated passings. This bandwidth capacity enables Charter to offer two-way signal capabilities necessary to provide HD television, interactive video services such as VOD, high-speed Internet and voice services.

An all-digital platform leveraging DOCSIS 3.1 technology enables Charter to offer a larger selection of HD channels, Spectrum Internet Gig and better picture quality while providing greater plant security and enabling lower installation and disconnect service truck rolls. Charter believes this architecture also allows it to continue to enhance its network to enable multi-gigabit services with low latency at a lower incremental capital cost relative to its competitors.

Management, Customer Operations and Marketing

Charter's operations are centralized, with senior executives located at several key corporate offices, responsible for coordinating and overseeing operations, including establishing company-wide strategies, policies and procedures. Sales and marketing, network operations, field operations, customer operations, engineering, advertising sales, human resources, legal, government relations, information technology and finance are all directed at the corporate level. Regional and local field operations are responsible for customer premise service transactions and maintaining and constructing that portion of Charter's network which is located outdoors.

Charter continues to focus on improving the customer experience through enhanced product offerings, reliability of services, and delivery of quality customer service. As part of Charter's operating strategy, Charter insources most of its customer operations workload. Charter's in-house call centers handle over 90% of Charter's total customer service calls. Charter manages its customer service call centers centrally to ensure a consistent, high quality customer experience. In addition, Charter routes calls by call type to specific agents that only handle such call types, enabling agents to become experts in addressing specific customer needs, creating a better customer experience. Charter implemented a new call center agent desktop interface tool in 2019 which enables virtualization of all call centers thereby better serving its customers. Virtualization allows calls to be routed across Charter's call centers regardless of the location origin of the call, reducing call wait times, and saving costs. Charter continues to migrate its call centers to full virtualization and expects its call centers to be fully virtualized by 2020.

Charter also provides customers with the opportunity to interact with the company through a variety of forums in addition to telephonic communications, including through its customer website, mobile device applications, online chat, and social media. Charter's customer websites and mobile applications enable customers to pay their bills, manage their accounts, order new services and utilize self-service help and support.

Charter sells its residential and commercial services using a national brand platform known as Spectrum, Spectrum Business and Spectrum Enterprise. These brands reflect Charter's comprehensive approach to industry-leading products, driven by speed, performance and innovation. Charter's marketing strategy emphasizes the sale of its bundled services through targeted direct response marketing programs to existing and potential customers, and increases awareness and the value of the Spectrum brand. Charter's marketing organization creates and executes marketing programs intended to grow customer relationships, increase the number of services it sells per relationship, retain existing customers and cross-sell additional products to current customers. Charter monitors the effectiveness of its marketing efforts, customer perception, competition, pricing, and service preferences, among other factors, in order to increase its responsiveness to customers and to improve sales and customer retention. Charter's marketing organization manages all sales channels including inbound, direct sales, on-line, outbound telemarketing and stores.

Programming

Charter believes that offering a wide variety of video programming choices influences a customer's decision to subscribe and retain its cable video services. Charter obtains basic and premium programming, usually pursuant to written contracts, from a number of suppliers. Media corporation consolidation has, however, resulted in fewer suppliers and additional selling power on the part of programming suppliers. Although an insignificant amount of Charter's programming budget, recently Charter has begun entering into agreements to co-produce or exclusively license original content which gives it the right to provide customers with certain exclusive content for a period of time.

Programming is usually made available to Charter for a license fee, which is generally paid based on the number of customers to whom it makes that programming available. Programming license fees may include "volume" discounts and financial incentives to support the launch of a channel and/or ongoing marketing support, as well as discounts for channel placement or service penetration. For home shopping channels, Charter typically receives a percentage of the revenue attributable to its customers' purchases. Charter also offers VOD and pay per view channels of movies and events that are subject to a revenue split with the content provider.

Charter's programming costs have increased in excess of customary inflationary and cost-of-living type increases. Charter expects programming costs per customer to continue to increase due to a variety of factors including, annual increases pursuant to Charter's programming contracts, contract renewals with programmers and the carriage of incremental programming, including new services and VOD programming. Increases in the cost of sports programming and the amounts paid for broadcast station retransmission consent have been the largest contributors to the growth in Charter's programming costs over the last few

years. Additionally, the demands of large media companies who link carriage of their most popular networks to carriage and cost increases of their less popular networks and who require Charter to carry their most popular networks to a large percentage of its video subscribers, has limited Charter's flexibility in creating more tailored and cost-sensitive programming packages for consumers.

Federal law allows commercial television broadcast stations to make an election between "must-carry" rights and an alternative "retransmission-consent" regime. When a station opts for retransmission-consent, Charter is not allowed to carry the station's signal without that station's permission. Continuing demands by owners of broadcast stations for cash payments at substantial increases over amounts paid in prior years in exchange for retransmission consent will increase Charter's programming costs or require Charter to cease carriage of popular programming, potentially leading to a loss of customers in affected service areas.

Over the past several years, increases in Charter's video service rates have not fully offset the increases in its programming costs, and with the impact of increasing competition and other marketplace factors, Charter does not expect the increases in its video service rates to fully offset the increase in its programming costs for the foreseeable future. Although Charter passes along a portion of amounts paid for retransmission consent to the majority of its customers, Charter's inability to fully pass programming cost increases on to its video customers has had, and is expected in the future to have, an adverse impact on Charter's cash flow and operating margins associated with its video product. In order to mitigate reductions of Charter's operating margins due to rapidly increasing programming costs, Charter continues to review its pricing and programming packaging strategies.

Charter's programming contracts are generally for a fixed period of time, usually for multiple years, and are subject to negotiated renewal. The contracts set to expire in any particular year vary. Charter will seek to renew these agreements on terms that it believes are favorable. There can be no assurance, however, that these agreements will be renewed on favorable or comparable terms. To the extent that Charter is unable to reach agreements with certain programmers on terms that Charter believes are reasonable, Charter has been, and may in the future be, forced to remove such programming channels from its line-up, which may result in a loss of customers.

Regions

Charter operates in geographically diverse areas which are organized in regional clusters. These regions are managed centrally on a consolidated level. Charter's 11 regions and the customer relationships within each region as of December 31, 2019 are as follows (in thousands):

Regions	Total Customer Relationships
Carolinas	3,020
Central	3,058
Florida	2,619
Great Lakes	2,270
Northeast	3,068
Northwest	1,626
New York City	1,381
South	2,094
Southern Ohio	2,313
Texas	3,070
West	4,716

Ownership Interests

We own an approximate 26% economic ownership interest in Charter, based on shares of Charter's Class A common stock issued and outstanding as of December 31, 2019. Upon the closing of the Time Warner Cable Merger, the Second Amended and Restated Stockholders Agreement, dated as of May 23, 2015, by and among Legacy Charter, Charter, Liberty Broadband and A/N, as amended (the "Stockholders Agreement"), became fully effective. Pursuant to proxy agreements with GCI Liberty, Inc. and A/N, we control 25.01% of the aggregate voting power of Charter. Liberty Broadband's overall voting interest is diluted by the outstanding A/N interest in a subsidiary of Charter because the A/N interest has voting rights in Charter. Under the Stockholders Agreement, we have the right to designate three directors to the Charter board of directors, subject to certain

exclusions and requirements. Charter has agreed to cause the appointment of at least one of our designees to serve on the nominating and corporate governance, finance, audit and compensation and benefits committees of the board, provided they meet the independence and other qualifications for membership on those committees.

Skyhook

Skyhook Holding, Inc. (formerly known as “TruePosition”) was originally incorporated on November 24, 1992 to provide technology for locating wireless phones and other mobile devices. TruePosition offered a passive network-based location system based on its patented U-TDOA technology (the “U-TDOA Service”) to provide E-9-1-1 services domestically and to enhance services in support of commercial applications and national security/law enforcement operations worldwide. In February 2014, TruePosition acquired Skyhook Wireless, Inc., an alternative location services provider that offered a positioning system using device-based measurements to calculate location, as opposed to TruePosition’s network-based technology. In May 2016, TruePosition and Skyhook Wireless, Inc. combined operations in order to focus on the development and sale of Skyhook’s device-based location technology. On January 1, 2017, TruePosition changed its name to Skyhook Holding, Inc. to reflect this combination of operations. Skyhook Holding, Inc. and Skyhook Wireless, Inc. are referred to collectively herein as “Skyhook.”

Today, Skyhook markets and sells two primary products: (1) a location determination service called the Precision Location Solution; and (2) a location intelligence and data insights service called Geospatial Insights.

Skyhook’s Precision Location Solution works by collecting nearby radio signals (such as information from WiFi access points, cell towers, IP addresses and other radio beacons) that are observed by a mobile device. The Precision Location Solution then matches these identified signals to the approximate geolocation of billions of geolocated WiFi access points, cell towers and IP addresses which are maintained in Skyhook’s proprietary reference database. Based on the signal strength of the received measurements and the pre-determined positions of the access points, cell towers and other beacons that are stored in the reference database, Skyhook can then calculate a precise location of the mobile device. Since the Precision Location Solution uses the existing hardware on the mobile device and observes signal scans that have already been performed by the device, it does not require additional hardware installations or consume any additional power from the mobile device. The Precision Location Solution is primarily marketed to, and used by, mobile device makers (including phones, laptops, tablets, gaming devices, wearables and other wireless-connected Internet of Things products), wireless carriers, and asset tracking platforms to understand the precise geographic location and movement of mobile devices. In addition, the Precision Location Solution can contribute to improving the location determination capabilities of a hybrid location system that utilizes other satellite and terrestrial location technologies, such as GPS, by increasing accuracy, reducing power consumption and improving the time it takes to deliver a location result.

Skyhook’s Geospatial Insights product uses location data to analyze foot traffic patterns and better understand the real-world behavior of consumers. By mapping the movement of mobile devices to specific venues and points-of-interest, Skyhook can draw insights regarding user visits to retail stores, restaurants, hotels, airports and other locations, as well as attendance at concerts, sporting events or other public gatherings. The resulting data provides a rich view of customer behavior, loyalty and purchase intent, as well as insights about the performance of a business or its competitors. Skyhook markets and sells Geospatial Insights to enterprises, research and consulting firms, financial institutions and advertisers, among others. These customers use Geospatial Insights data to understand, measure and optimize the performance of businesses, to benchmark performance against competitors, to improve customer experience, to advertise to and target existing and prospective customers with the right message, and to measure the efficacy of advertising campaigns in driving real-world actions.

Skyhook’s revenue is derived from the sale and integration of its Precision Location Solution (including the licensing of software and data components that make up that solution) and the licensing of Geospatial Insights data. In addition, Skyhook earns revenue through entering into licensing agreements with companies to utilize its underlying intellectual property (including patents).

Regulatory Matters

Charter

The following summary addresses the key regulatory and legislative developments affecting the cable industry and Charter’s services for both residential and commercial customers. Cable system operations are extensively regulated by the

federal government (primarily the FCC), certain state governments, and many local governments. A failure to comply with these regulations could subject Charter to substantial penalties. Charter's business can be dramatically impacted by changes to the existing regulatory framework, whether triggered by legislative, administrative, or judicial rulings. Congress and the FCC have frequently revisited the subject of communications regulation and they are likely to do so again in the future. Charter could be materially disadvantaged in the future if it is subject to new laws, regulations or regulatory actions that do not equally impact its key competitors. Charter cannot provide assurance that the already extensive regulation of its business will not be expanded in the future. In addition, Charter is already subject to Charter-specific conditions regarding certain business practices as a result of the FCC's approval of the Transactions.

Video Service

Must Carry/Retransmission Consent

There are two alternative legal methods for carriage of local broadcast television stations on cable systems. Federal "must carry" regulations require cable systems to carry local broadcast television stations upon the request of the local broadcaster. Alternatively, federal law includes "retransmission consent" regulations, by which popular commercial television stations can prohibit cable carriage unless the cable operator first negotiates for "retransmission consent," which may be conditioned on significant payments or other concessions. Popular stations invoking "retransmission consent" have been demanding substantial compensation increases in their recent negotiations with cable operators, thereby significantly increasing Charter's operating costs.

Pole Attachments

The Communications Act of 1934, as amended (the "Communications Act") requires most utilities owning utility poles to provide cable systems with access to poles and conduits and also subjects the rates charged for this access to either federal or state regulation. The federally regulated rates now applicable to pole attachments used for cable, Internet, and telecommunications services are substantially similar. The FCC's approach does not directly affect the rate in states that self-regulate, but many of those states have substantially the same rate for all communications attachments.

Some municipalities have enacted "one-touch" make-ready pole attachment ordinances, which permit third parties to alter components of Charter's network attached to utility poles in ways that could adversely affect its businesses. Some of these ordinances have been challenged with differing results. In 2018, the FCC adopted "one-touch" make-ready ("OTMR") rules that will apply in states where pole attachments are FCC regulated, and they may impact many of Charter's existing pole attachments. Various utilities have sought review of the OTMR rules in federal court.

Cable Rate Regulation

Pursuant to federal law, a cable system's video offerings are universally exempt from rate regulation, except for a cable system's minimum level of video programming service, referred to as "basic service," and associated equipment. FCC regulations require a local franchise authority interested in regulating rates for basic service and associated equipment to first make an affirmative showing that there is no "effective competition" (as defined under federal law) in the community. Given the competitive nature of Charter's markets, the FCC recently rescinded certifications for the relatively few communities where Charter had been subject to rate regulation. It is possible that the competitive situation could change, and that some local franchising authorities may be certified to regulate rates in the future, and existing and potential laws and regulations may affect Charter's marketing practices (including its disclosure and itemization of subscriber fees).

Other FCC Regulatory Matters

The Communications Act and FCC regulations cover a variety of additional areas, including, among other things: (1) licensing of systems and facilities; (2) equal employment opportunity obligations; (3) customer service standards; (4) technical service standards; (5) mandatory blackouts of certain network and syndicated programming; (6) restrictions on political advertising; (7) restrictions on advertising in children's programming; (8) ownership restrictions; (9) maintenance of public files; (10) emergency alert systems; (11) inside wiring and exclusive contracts for MDU complexes; (12) disability access, including requirements governing video-description and closed-captioning; (13) competitive availability of cable equipment; (14) the provision of up to 15% of video channel capacity for commercial leased access by unaffiliated third parties; and (15) public,

education and government entities access requirements. Each of these regulations restricts Charter's business practices to varying degrees and may impose additional costs on Charter's operations. Further, the FCC regulates spectrum usage and other communications enterprises in ways that could impact Charter's operations. For example, the FCC is currently considering proposals to reallocate certain spectrum for new wireless communications purposes, which could be disruptive to the satellite platform Charter relies upon to provide its video services. The FCC is also preparing to make additional spectrum available for commercial services, which Charter might use to deliver services in the future. Charter's ability to access and use such spectrum is uncertain and may be limited by further FCC auction or allocation decisions.

It is possible that Congress or the FCC will expand or modify its regulation of cable systems in the future, and Charter cannot predict at this time how that might impact its business.

Copyright

Cable systems are subject to a federal compulsory copyright license covering carriage of television and radio broadcast signals. The copyright law provides copyright owners the right to audit Charter's payments under the compulsory license, and the Copyright Office is currently considering modifications to the license's royalty calculations and reporting obligations. The possible modification or elimination of this license is the subject of continuing legislative proposals and administrative review and could adversely affect Charter's ability to obtain desired broadcast programming.

Franchise Matters

Charter's cable systems generally are operated pursuant to nonexclusive franchises, permits, and similar authorizations granted by a municipality or other state or local government entity in order to utilize and cross public rights-of-way. Cable franchises generally are granted for fixed terms and in many cases include monetary penalties for noncompliance and may be terminable if the franchisee fails to comply with material provisions. The specific terms and conditions of cable franchises vary significantly between jurisdictions. They generally contain provisions governing cable operations, franchise fees, system construction, maintenance, technical performance, customer service standards, supporting and carrying public access channels, and changes in the ownership of the franchisee. Although local franchising authorities have considerable discretion in establishing franchise terms, certain federal protections benefit cable operators. For example, federal law imposes a 5% cap on franchise fees. In August 2019, the FCC clarified that in-kind contribution requirements set forth in cable franchises are subject to the statutory cap on franchise fees, and it reaffirmed that state and local authorities are barred from imposing duplicative franchise and/or fee requirements on franchised cable systems providing non-cable services. An appeal of the FCC's order is pending in federal court.

A number of states have adopted franchising laws that provide for statewide franchising. Generally, state-wide cable franchises are issued for a fixed term, but streamline many of the traditional local cable franchise requirements and eliminate local negotiation.

The Communications Act provides for an orderly franchise renewal process in which granting authorities may not unreasonably deny renewals. If Charter fails to obtain renewals of franchises representing a significant number of its customers, it could have a material adverse effect on Charter's consolidated financial condition, results of operations, or its liquidity. Similarly, if a franchising authority's consent is required for the purchase or sale of a cable system, the franchising authority may attempt to impose more burdensome requirements as a condition for providing its consent.

Internet Service

The FCC originally classified broadband Internet access services, such as those Charter offers, as an "information service," which exempted the service from traditional communications common carrier laws and regulations. In 2015, the FCC reclassified broadband Internet access services as "telecommunications service" and, on that basis, imposed a number of "net neutrality" rules governing the provision of broadband service. In 2017, the FCC reversed its 2015 decision. The Commission's 2017 Order restored the "information service" classification and eliminated the 2015 rules, other than a transparency requirement, which created an obligation to disclose performance statistics and other service information to consumers. The 2017 FCC decision also ruled that state regulators may not impose obligations similar to federal network neutrality obligations that the FCC eliminated.

In 2019, the U.S. Court of Appeals for the District of Columbia upheld the FCC’s information service reclassification, but vacated the FCC’s blanket prohibition of state utility regulation of broadband services. The court left open the possibility that individual state laws could be deemed preempted on a case by case basis if it is shown that they conflict with federal law. We understand that this decision may be subject to further judicial review. Several states (including California) have already adopted state obligations, and additional states may consider the imposition of new regulations on Charter’s Internet services, such as rules similar to the network neutrality requirements that were eliminated by the FCC. California’s legislation has been challenged in court, and Charter cannot predict how the challenge to California’s legislation or challenges to any future state legislation will be resolved. As recent history has shown, it is possible that the FCC might further revise its approach to broadband Internet access, or that Congress might enact legislation affecting the rules applicable to the service. The application of new legal requirements to Charter’s Internet services could adversely affect its business.

In recent years, the FCC has demonstrated an interest in accelerating advancements in, and deployment of, wired and wireless broadband infrastructure, including advanced 5G wireless service. For example, the FCC and some state regulatory commissions direct certain subsidies to telephone and other companies deploying broadband to areas deemed to be “unserved” or “underserved.” Charter has opposed such subsidies when directed to areas that it serves. However, continued regulatory efforts to accelerate competitive wireline and wireless broadband deployment, including reforms that create regulatory imbalances, could adversely affect Charter’s business.

Aside from the FCC’s generally applicable regulations, Charter has made certain commitments to comply with the FCC’s order in connection with the FCC’s approval of the Time Warner Cable Merger and the Bright House Transaction (discussed below).

Wireline Voice Service

The FCC has never classified the VoIP telephone services Charter offers as “telecommunications services” that are subject to traditional federal common carrier regulation, but instead has imposed some of these requirements on a case-by-case basis, such as requirements relating to 911 emergency services (“E911”), Communications Assistance for Law Enforcement Act (“CALEA”) (the statute governing law enforcement access to and surveillance of communications), Universal Service Fund contributions, customer privacy and Customer Proprietary Network Information protections, number portability, network outage reporting, rural call completion, disability access, regulatory fees, back-up power obligations and discontinuance of service. It is possible that the FCC or Congress will impose additional requirements on Charter’s VoIP telephone services in the future. Although Charter believes that VoIP telephone services should be governed only by federal regulation, some states have attempted to subject cable VoIP services to state level regulation, and at least one state has asserted jurisdiction over Charter’s VoIP services. Charter prevailed on a legal challenge to that state’s assertion of jurisdiction, which was affirmed by a federal appellate court, but that ruling is limited to the seven states in that circuit. Although Charter has registered with, or obtained certificates or authorizations from the FCC and the state regulatory authorities in those states in which Charter offers competitive voice services in order to ensure the continuity of its services, it is unclear whether and how these and other ongoing regulatory matters ultimately will be resolved. State regulatory commissions and legislatures in other jurisdictions may continue to consider imposing regulatory requirements on Charter’s fixed telephone services.

Mobile Service

Charter’s Spectrum Mobile service offers mobile Internet access and telephone service. Charter provides this service as an MVNO using Verizon’s network and its network of Spectrum WiFi hotspots. As an MVNO, Charter is subject to many of the same FCC regulations that apply to facilities-based wireless carriers, as well as certain state or local regulations, including (but not limited to): E911, local number portability, customer privacy, CALEA, universal service fund contribution, and hearing aid compatibility and safety and emission requirements for mobile devices. Spectrum Mobile’s broadband Internet access, service is also subject to the FCC’s transparency rule. The FCC or other regulatory authorities may adopt new or different regulations for MVNOs and/or mobile service providers in the future, or impose new taxes or fees applicable to Spectrum Mobile, which could adversely affect the service offering or Charter’s business generally.

Privacy and Information Security Regulation

The Communications Act limits Charter’s ability to collect, use, and disclose customers’ personally identifiable information for its video, voice, and Internet services. Charter is subject to additional federal, state, and local laws and regulations that impose additional restrictions on the collection, use and disclosure of consumer information. All broadband providers are

also obliged by CALEA to configure their networks in a manner that facilitates the ability of state and federal law enforcement, with proper legal process authorized under the Electronic Communications Privacy Act, to obtain records and information concerning Charter's customers, including the content of their communications. Further, the FCC, Federal Trade Commission ("FTC"), and many states regulate and restrict the marketing practices of communications service providers, including telemarketing and sending unsolicited commercial emails.

The FTC currently has the authority, pursuant to its general authority to enforce against unfair or deceptive acts and practices, to protect the privacy of Internet service customers, including Charter's use and disclosure of certain customer information.

Charter's operations are also subject to federal and state laws governing information security. In the event of an information security breach, such rules may require consumer and government agency notification and may result in regulatory enforcement actions with the potential of monetary forfeitures. The FCC, the FTC and state attorneys general regularly bring enforcement actions against companies related to information security breaches and privacy violations.

Various security standards provide guidance to telecommunications companies in order to help identify and mitigate cybersecurity risks. One such standard is the voluntary framework released by the National Institute for Standards and Technologies ("NIST") in 2014 and updated in 2018, in cooperation with other federal agencies and owners and operators of U.S. critical infrastructure. The NIST cybersecurity framework provides a prioritized and flexible model for organizations to identify and manage cyber risks inherent to their business. It was designed to supplement, not supersede, existing cybersecurity regulations and requirements. Several government agencies have encouraged compliance with the NIST cybersecurity framework, including the FCC, which is also considering expansion of its cybersecurity guidelines or the adoption of cybersecurity requirements.

Many states and local authorities have considered legislative or other actions that would impose restrictions on Charter's ability to collect, use and disclose, and safeguard certain consumer information, particularly with regard to its broadband Internet business. For example, the California Consumer Privacy Act and Maine's Act to Protect Privacy of Online Customer Information are both scheduled go into effect in 2020.

The California law will, under certain circumstances, regulate companies' use and disclosure of the personal information of California residents and authorizes enforcement actions by the California Attorney General and private class actions for data breaches. The Maine law regulates how Internet service providers use and disclose customers' personal information and requires Internet service providers to take reasonable measures to protect customers' personal information. Charter expects state and local efforts to regulate consumer privacy to continue in 2020. Additionally, several state legislatures are considering the adoption of new data security and cybersecurity legislation that could result in additional network and information security requirements for Charter's business. Charter expects such state activity to increase as a result of the recent U.S. Court of Appeals decision that, while affirming the FCC's reclassification of Internet access as an "information service," vacated the FCC's blanket prohibition of state regulation of broadband service and instead left open the possibility that individual state laws could be deemed preempted on a case by case basis if it is shown that they conflict with federal law. There are also bills pending in both the U.S. House of Representatives and Senate that could impose new privacy and data security obligations. Charter cannot predict whether any of these efforts will be successful or preempted, or how new legislation and regulations, if any, would affect its business.

Transaction-Related Commitments

In connection with approval of the Transactions, federal and state regulators imposed a number of post-transaction conditions on Charter including but not limited to the following.

FCC Conditions

- Offer settlement-free Internet interconnection to any party that meets the requirements of Charter's Interconnection Policy (available on Charter's website) on terms generally consistent with the policy for seven years (with a possible reduction to five years from FCC approval in 2016);
- Deploy and offer high-speed broadband Internet access service to an additional two million locations over five years;

- Refrain from charging usage-based prices or imposing data caps on any fixed mass market broadband Internet access service plans for seven years (with a possible reduction to five);
- Offer 30/4 Mbps discounted broadband where technically feasible to eligible customers throughout Charter’s service area for four years from the offer’s commencement; and
- Continue to provide CableCARDS to any new or existing customer upon request for use in third-party retail devices for four years and continue to support such CableCARDS for seven years (in each case, unless the FCC changes the relevant rules).

The FCC conditions also contain a number of compliance reporting requirements.

DOJ Conditions

The Department of Justice (“DOJ”) Order prohibits Charter from entering into or enforcing any agreement with a video programmer that forbids, limits or creates incentives to limit the video programmer’s provision of content to online video distributors (“OVDs”). Charter will not be able to avail itself of other distributors’ most favored nation (“MFN”) provisions if they are inconsistent with this prohibition. The DOJ’s conditions are effective for seven years after entry of the final judgment in 2016, although Charter may petition the DOJ to eliminate the conditions after five years.

State Conditions

Certain state regulators, including California, New York, Hawaii and New Jersey also imposed conditions in connection with the approval of the Transactions. These conditions include requirements related to:

- Building out its network to certain households and business locations that are not currently served by cable within the designated states;
- Offering LifeLine service discounts and low-income broadband to eligible households served within the applicable states;
- Investing in service improvement programs and customer service enhancements and maintaining customer-facing jobs within the designated state; and
- Complying with reporting requirements.

Skyhook

Skyhook is subject to a variety of laws and regulations in the United States and in foreign jurisdictions that involve matters central to its technology and ongoing business, including the collection and storage of location information, privacy and data protection, intellectual property, data security and data retention, and other business and compliance-related laws. The application, scope, interpretation, and enforcement of applicable laws and regulations in many of these areas are often uncertain, particularly in the new and rapidly-evolving mobile technology industry in which Skyhook operates. In addition, existing laws may be interpreted and applied inconsistently from one jurisdiction to another, and inconsistently with Skyhook’s current policies and practices. The introduction of new products or the expansion of Skyhook’s sales activities in certain jurisdictions may subject it to additional laws and regulations, or increase the risk posed to Skyhook’s business by non-compliance.

In particular, data protection, privacy, and other laws and regulations can be more restrictive in certain jurisdictions than those in the United States. For example, as a result of its international activities, Skyhook is subject to laws and regulations that dictate whether, how, and under what circumstances it can transfer or process data from the European Union (the “EU”) to the United States. In addition, certain activities of Skyhook may be subject to the European Union’s General Data Protection Regulation (“GDPR”) which came into effect in May 2018. The GDPR is intended to reach broadly most companies that operate in any manner in the EU, and serves to impose certain requirements on businesses that collect and process “personal data” from individuals in the EU. The GDPR subjects businesses to significant fines and other penalties for non-compliance. Although the EU has released guidance regarding the application of the GDPR and enforcement actions have been initiated, it is unclear how the GDPR will be applied by EU authorities in any specific manner. However, the costs of compliance and potential disruption to available data flows could be high.

Skyhook is also monitoring additional proposed and pending legislation and regulations in the U.S. and abroad that are related to its technology and business operations, including regulations that implement specific privacy or data protection rules.

Competition

Charter

Residential Services

Charter faces intense competition for residential customers, both from existing competitors, and, as a result of the rapid development of new technologies, services and products, from new entrants. Charter faces triple play competition, consisting of wireline multichannel video, wireline Internet, and wireline voice service, from three primary competitors, AT&T, Frontier Communications Corporation (“Frontier”) and Verizon. As of December 31, 2019, AT&T, Frontier and Verizon offered these triple play packages in approximately 33%, 7%, and 5% of Charter’s operating areas, respectively. AT&T also owns DIRECTV, and as a combined company provides video service (via IP or satellite) and voice service (via fixed or wireless) across Charter’s entire footprint.

Video competition

Charter’s residential video service faces competition from DBS service providers, which have a national footprint and compete in all of Charter’s operating areas. DBS providers offer satellite-delivered pre-packaged programming services that can be received by relatively small and inexpensive receiving dishes. DBS providers offer aggressive promotional pricing, exclusive programming (e.g., NFL Sunday Ticket) and video services that are comparable in many respects to Charter’s residential video service. Charter’s residential video service also faces competition from large telecommunications companies, primarily AT&T U-verse, Frontier fiber optic service (“FiOS” of “Fios”) and Verizon Fios, which offer wireline video services in significant portions of Charter’s operating areas.

Charter’s residential video service also faces growing competition from a number of other sources, including companies that deliver linear network programming, movies and television shows on demand and other video content over broadband Internet connections to televisions, computers, tablets and mobile devices. These competitors include virtual multichannel video programming distributors (“V-MVPDs”) such as AT&T TV NOW, Sling TV, YouTube TV and Hulu Live. Other online video business models and products have also developed, some offered by programmers that have not traditionally sold programming directly to consumers, including, (i) subscription video on demand (“SVOD”) services such as Netflix, Apple TV+, Amazon Prime, Hulu Plus, Disney+, HBO Now, CBS All Access, Starz and Showtime Anytime, (ii) ad-supported free online video products, including YouTube and Pluto TV, some of which offer programming for free to consumers that Charter currently purchases for a fee, (iii) pay-per-view products, such as iTunes, and Amazon Instant, and (iv) additional offerings from mobile providers which continue to integrate and bundle video services and mobile products. Historically, Charter has generally viewed SVOD online video services as complementary to its own video offering, and has developed a cloud-based guide that is capable of incorporating video from online video services currently offered in the marketplace. As the proliferation of online video services grows, however, services from V-MVPDs and new direct to consumer offerings, as well as piracy and password sharing, negatively impact the number of customers purchasing Charter’s video product.

Internet competition

Charter’s residential Internet service faces competition from fiber-to-the-home (“FTTH”), fiber-to-the-node (“FTTN”), DSL and wireless broadband offerings, as well as from a variety of companies that offer other forms of online services, including fixed wireless and satellite-based broadband services. AT&T, Frontier FiOS and Verizon’s Fios are Charter’s primary FTTH competitors. Given the FTTH deployments of Charter’s competitors, launches of broadband services offering 1 gigabit per second (“Gbps”) speed have recently grown. Several competitors, including AT&T, Frontier FiOS, Verizon’s Fios, WideOpen West Finance, LLC (“WOW”) and Google Fiber, deliver 1 Gbps broadband speed in at least a portion of their footprints which overlap Charter’s footprint. DSL service is often offered at prices lower than Charter’s Internet services, although typically at speeds much lower than the minimum speeds Charter offers as part of SPP. Various mobile phone companies offer wireless Internet services delivered over networks which they continue to enhance to deliver faster speeds. AT&T, Verizon, Sprint Corporation (“Sprint”) and T-Mobile US, Inc. (“T-Mobile”) all began deploying fifth generation (5G) mobile services in 2019, although generally in limited geographies, with plans to expand 5G more broadly in 2020. In April 2018, Sprint and T-Mobile announced

their intent to merge. If the transaction closes, the resulting company would be one of the nation's largest mobile carriers bringing increased competition with a stated intent of pursuing broad 5G network deployment and offering fixed wireless broadband service. Some mobile phone companies offer unlimited data packages to customers. In addition, a growing number of commercial areas, such as retail malls, restaurants and airports, offer WiFi Internet service. Numerous local governments are also considering or actively pursuing publicly subsidized WiFi Internet access networks. These options offer alternatives to cable-based Internet access.

Voice competition

Charter's residential voice service competes with wireless and wireline phone providers, as well as other forms of communication, such as text messaging on cellular phones, instant messaging, social networking services, video conferencing and email. Charter also competes with "over-the-top" phone providers, such as Vonage, Skype, magicJack, Google Voice and Ooma, Inc., as well as companies that sell phone cards at a cost per minute for both national and international service. The increase in the number of different technologies capable of carrying voice services and the number of alternative communication options available to customers as well as the replacement of wireline services by wireless have intensified the competitive environment in which Charter operates its residential voice service. Charter's mobile service competes with other mobile providers such as Verizon, AT&T, T-Mobile and Sprint, as well as various regional wireless service providers. Charter also competes for retail activations with other resellers that buy bulk wholesale service from wireless service providers for resale.

Regional Competitors

In some of Charter's operating areas, other competitors have built networks that offer video, Internet and voice services that compete with its services. For example, in certain service areas, Charter's residential video, Internet and voice services compete with Google Fiber, Cincinnati Bell Inc., Hawaiian Telcom (owned by Cincinnati Bell Inc.), RCN Telecom Services, LLC, Grande Communications Networks, LLC and WOW.

Additional competition

In addition to multi-channel video providers, cable systems compete with other sources of news, information and entertainment, including over-the-air television broadcast reception, live events, movie theaters and the Internet. Competition is also posed by fixed wireless and satellite master antenna television systems, or SMATV systems, serving MDUs, such as condominiums, apartment complexes, and private residential communities.

Business Services

Charter faces intense competition across each of its business services product offerings. Charter's small and medium business video, Internet, networking and voice services face competition from a variety of providers as described above. Charter's enterprise solutions also face competition from the competitors described above as well as application-service providers and other telecommunications carriers, such as metro and regional fiber-based carriers.

Advertising

Charter faces intense competition for advertising revenue across many different platforms and from a wide range of local and national competitors. Advertising competition has increased and will likely continue to increase as new advertising avenues seek to attract the same advertisers. Charter competes for advertising revenue against, among others, local broadcast stations, national cable and broadcast networks, radio stations, print media and online advertising companies and content providers.

Skyhook

Skyhook's Precision Location Solution competes against (1) other satellite and terrestrial based location technology offerings, such as GPS; (2) other providers of WiFi and cell-based positioning, such as Google and HERE, a former subsidiary of Nokia; and (3) other in-house developed location solutions. There are also a number of new location technologies in development which may further increase competition to be a location solution for new devices and which may require Skyhook

to meet more stringent accuracy standards. In addition, Skyhook's Geospatial Insights services compete against other geofencing and location intelligence offerings from other niche location companies.

Skyhook owns significant intellectual property around the world that relates to its location products and services and provides possible competitive advantages. Skyhook's intellectual property portfolio includes patents, patent applications, copyrights, trade secrets, trademarks, and other intellectual property rights. Skyhook believes that it has a defensible and useful intellectual property portfolio and it actively seeks to protect and license its global intellectual property rights as well as to deter unauthorized use of its intellectual property and other assets. For example, in 2015, Skyhook entered into a settlement agreement and license that resolved a lawsuit that Skyhook had brought against Google, in connection with claims that Google had infringed eight Skyhook patents. In 2016 and again in 2018, Skyhook entered into a license agreement to grant to the licensee a perpetual, non-exclusive, non-transferable, worldwide license to patents and patent applications owned by Skyhook in exchange for a lump sum payment. Skyhook has successfully worked with customers to enter into license agreements but cannot provide assurance that current patents will be enforceable or won't be infringed, that they will deter unauthorized use, that Skyhook's attempts to secure intellectual property licenses will be successful, or that its additional patent applications will ever be allowed or granted.

Seasonality and Cyclicity

Charter

Charter's business is subject to seasonal and cyclical variations. Its results are impacted by the seasonal nature of customers receiving cable services in college and vacation service areas. Charter's revenue is subject to cyclical advertising patterns and changes in viewership levels. Its advertising revenue is generally higher in the second and fourth calendar quarters of each year, due in part to increases in consumer advertising in the spring and in the period leading up to and including the holiday season. U.S. advertising revenue is also cyclical, benefiting in even-numbered years from advertising related to candidates running for political office and issue-oriented advertising. Charter's capital expenditures and trade working capital are also subject to significant seasonality based on the timing of subscriber growth, network programs, specific projects and construction.

Employees

Liberty Broadband

Liberty Broadband currently does not have any corporate employees. Liberty provides Liberty Broadband with certain services pursuant to a services agreement, and certain of Liberty's corporate employees and executive officers perform similar functions at Liberty Broadband. In connection with the provision of these services, Liberty Broadband provides certain elements of compensation to these corporate employees and executive officers of Liberty.

Skyhook

As of December 31, 2019, Skyhook had 56 full and part-time employees. None of these employees is represented by a labor union or covered by a collective bargaining agreement. Liberty Broadband believes that relations with these employees are good.

Available Information

All of our filings with the SEC including our Form 10-Ks, Form 10-Qs and Form 8-Ks, as well as amendments to such filings are available on our Internet website free of charge generally within 24 hours after we file such material with the SEC. Our website address is www.libertybroadband.com.

Our corporate governance guidelines, code of business conduct and ethics, compensation committee charter, nominating and corporate governance committee charter, and audit committee charter are available on our website. In addition, we will provide a copy of any of these documents, free of charge, to any shareholder who calls or submits a request in writing to Investor Relations, Liberty Broadband Corporation, 12300 Liberty Boulevard, Englewood, Colorado 80112, Tel. No. (844) 826-8735.

The information contained on our website is not incorporated by reference herein.

Item 1A. Risk Factors

The risks described below and elsewhere in this annual report are not the only ones that relate to our businesses or our capitalization. The risks described below are considered to be the most material. However, there may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that also could have material adverse effects on our businesses. Past financial performance may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods. If any of the events described below were to occur, our businesses, prospects, financial condition, results of operations and/or cash flows could be materially adversely affected.

Factors Relating to Our Corporate History and Structure

We are a holding company, and we could be unable to obtain cash in amounts sufficient to service our financial obligations or meet our other commitments.

Our ability to meet our current and future financial obligations, including to make debt service obligations under the Amended 2017 Margin Loan Agreement (defined below), and other contractual commitments depends upon our ability to access cash. We are a holding company, and our sources of cash include our available cash balances, net cash from the operating activities of our wholly-owned subsidiary Skyhook, any dividends and interest we may receive from our investments, available funds under the Amended 2017 Margin Loan Agreement (defined below) (which was \$425 million as of December 31, 2019) and proceeds from any asset sales we may undertake in the future. In addition, the ability of our only operating subsidiary to pay dividends or to make other payments or advances to us depends on its operating results and any statutory, regulatory or contractual restrictions to which it may be or may become subject.

We do not have access to the cash that Charter generates from its operating activities.

Charter generated approximately \$11,748 million, \$11,767 million and \$11,954 million of cash from its operations during the years ended December 31, 2019, 2018 and 2017, respectively. Charter uses the cash it generates from its operations primarily to fund its business operations and to service its debt and other financial obligations. We do not have access to the cash that Charter generates unless Charter declares a dividend on its capital stock payable in cash, repurchases any or all of its outstanding shares of capital stock for cash (subject to any contractual restrictions on our ability to participate in any such repurchase) or otherwise distributes or makes payments to its stockholders, including us. Historically, Charter has not paid any dividends on its capital stock or, with limited exceptions, otherwise distributed cash to its stockholders and instead has used all of its available cash in the expansion of its business and to service its debt obligations. Covenants in Charter's existing debt instruments also restrict the payment of dividends and cash distributions to stockholders. We expect that Charter will continue to apply its available cash to the expansion of its business.

Our company may have future capital needs and may not be able to obtain additional financing, or refinance or renew our existing indebtedness, on acceptable terms.

We had outstanding borrowings of \$575 million, with \$425 million remaining available to be drawn until August 19, 2020 (the "Delayed Draw") at December 31, 2019 under a credit agreement (as amended, the "Amended 2017 Margin Loan Agreement") governing a multi-draw margin loan agreement credit facility entered into in 2017 by a bankruptcy remote wholly owned subsidiary ("SPV") of Liberty Broadband. The obligations under the Amended 2017 Margin Loan Agreement are secured by a portion of our ownership interest in Charter. Such equity interests are held through SPV. The terms of the Amended 2017 Margin Loan Agreement limit our company's ability to secure additional financing on favorable terms, and our cash flow from operations may be insufficient to satisfy our financial obligations under indebtedness outstanding from time to time. Our ability to secure additional financing and satisfy our financial obligations will depend upon the operating performance of our subsidiary, Skyhook, the value of our investment in Charter, prevailing general economic and credit market conditions, including interest rate levels and the availability of credit generally, and financial, business and other factors, many of which are beyond our control. There can be no assurance that sufficient financing will be available, or that we will be able to renew (in the case of the Delayed Draw) or refinance our existing indebtedness, on desirable terms or at all. If financing is not available when needed or is not available on favorable terms, we may be unable to take advantage of business or market opportunities as they arise, which could have a material adverse effect on our business and financial condition.

We have significant indebtedness, which could adversely affect our business and financial condition.

As discussed above, SPV entered into the Amended 2017 Margin Loan Agreement pursuant to which SPV had outstanding borrowings of \$575 million at December 31, 2019. As a result of this significant indebtedness, our company may:

- Experience increased vulnerability to general adverse economic and industry conditions;
- Be required to dedicate a substantial portion of its cash flow from operations to principal and interest payments on its indebtedness, thereby reducing the availability of cash flow to fund working capital, capital expenditures, strategic acquisitions and investments and other general corporate purposes;
- Be handicapped in its ability to optimally capitalize and manage the cash flow for its businesses; and
- Be exposed to the risk of increased interest rates with respect to any variable rate portion of its indebtedness.

In addition, it is possible that we may need to incur additional indebtedness in the future. If new debt is added to the current debt levels, the risks described above could intensify. For additional limitations on our company's ability to potentially service our direct debt obligations, see "We are a holding company, and we could be unable to obtain cash in amounts sufficient to service our financial obligations or meet our other commitments" and "We do not have access to the cash that Charter generates from its operating activities" above.

The agreements that govern our current and future indebtedness may contain various affirmative and restrictive covenants that will limit our discretion in the operation of our business.

As discussed above, SPV entered into the Amended 2017 Margin Loan Agreement pursuant to which SPV had outstanding borrowings of \$575 million, with \$425 million remaining available to be drawn until August 19, 2020, at December 31, 2019. The Amended 2017 Margin Loan Agreement contains various covenants, including those that limit our ability to, among other things, incur indebtedness by having SPV enter into financing arrangements with respect to the portion of stock of Charter pledged to secure the loans under the Amended 2017 Margin Loan Agreement, and cause SPV to enter into unrelated businesses or otherwise conduct business other than owning common stock of Charter and other assets as permitted under the Amended 2017 Margin Loan Agreement documents. We may also enter into certain other indebtedness arrangements in the future. The instruments governing such indebtedness, often contain covenants that, among other things, place certain limitations on our ability to incur more debt, exceed specified leverage ratios, pay dividends, make distributions, make investments, repurchase stock, create liens, enter into transactions with affiliates, merge or consolidate, and transfer or sell assets. Any failure to comply with such covenants could result in an event of default, which, if not cured or waived, could have a material adverse effect on our business and financial condition.

We rely on Charter to provide us with the financial information that we use in accounting for our ownership interest in Charter as well as information regarding Charter that we include in our public filings.

We account for our approximately 26% economic ownership interest in Charter using the equity method of accounting and, accordingly, in our financial statements we record our share of Charter's net income or loss. Within the meaning of U.S. accounting rules, we rely on Charter to provide us with financial information prepared in accordance with generally accepted accounting principles, which we use in the application of the equity method. We also rely on Charter to provide us with the information regarding their company that we include in our public filings. In addition, we cannot change the way in which Charter reports its financial results or require Charter to change its internal controls over financial reporting. No assurance can be given that Charter will provide us with the information necessary to enable us to complete our public filings on a timely basis or at all. Furthermore, any material misstatements or omissions in the information Charter provides to us or publicly files could have a material adverse effect on our financial statements and filing status under federal securities laws.

We may become subject to the Investment Company Act of 1940.

We do not believe we are currently subject to regulation under the Investment Company Act of 1940, because our investment in Charter enables us to exercise significant influence over Charter. We have substantial involvement in the management and affairs of Charter, including through our board nominees. We nominated three of Charter's thirteen current directors. In connection with the Bright House Transaction, on May 23, 2015, we entered into the Stockholders Agreement, which continues to provide us with board nomination rights. If, however, our investment in Charter was deemed to become

passive (such as in the event that our equity interests were significantly diluted and our nominees ceased to serve as directors of Charter), we could become subject to regulation under the Investment Company Act of 1940. In such event, we would be required to register as an investment company, which could result in significant registration and compliance costs, could require changes to our corporate governance structure and financial reporting and could restrict our activities going forward. Our restated certificate of incorporation includes a provision that would enable us, at the option of our board of directors, to automatically convert each outstanding share of our Series B common stock into one share of our Series A common stock at such time as we have outstanding less than 20% of the total number of shares of our Series B common stock issued in the Broadband Spin-Off. In addition, if we were to become inadvertently subject to the Investment Company Act of 1940, any violation of this act could subject us to material adverse consequences, including potentially significant regulatory penalties and the possibility that our contracts would be deemed unenforceable.

Our company has overlapping directors and officers with Liberty, Qurate Retail, Inc., Liberty TripAdvisor Holdings, Inc., and GCI Liberty, Inc., which may lead to conflicting interests.

As a result of the Broadband Spin-Off and other transactions between 2011 and 2018 that resulted in the separate corporate existence of Liberty, Qurate Retail, Inc. (“Qurate Retail”), Liberty TripAdvisor Holdings, Inc. (“TripCo”), and GCI Liberty, Inc. (“GCI Liberty”), most of the executive officers of Broadband also serve as executive officers of Liberty, Qurate Retail, TripCo and GCI Liberty and there are overlapping directors. With the exception of GCI Liberty’s current ownership of shares of our non-voting Series C common stock, none of these companies has any ownership interest in any of the others. Our executive officers and members of our company’s board of directors have fiduciary duties to our stockholders. Likewise, any such persons who serve in similar capacities at Liberty, Qurate Retail, TripCo, GCI Liberty or any other public company have fiduciary duties to that company’s stockholders. For example, there may be the potential for a conflict of interest when our company, Liberty, Qurate Retail, TripCo or GCI Liberty pursues acquisitions and other business opportunities that may be suitable for each of them. Therefore, such persons may have conflicts of interest or the appearance of conflicts of interest with respect to matters involving or affecting more than one of the companies to which they owe fiduciary duties. Each of our company, TripCo and GCI Liberty has renounced its rights to certain business opportunities and their respective restated certificate of incorporation provides that no director or officer of the respective company will breach their fiduciary duty and therefore be liable to the respective company or its stockholders by reason of the fact that any such individual directs a corporate opportunity to another person or entity (including Liberty, Qurate Retail, TripCo and GCI Liberty) instead of the respective company, or does not refer or communicate information regarding such corporate opportunity to our company, unless (x) such opportunity was expressly offered to such person solely in his or her capacity as a director or officer of the respective company or as a director or officer of any of the respective company’s subsidiaries, and (y) such opportunity relates to a line of business in which the respective company or any of its subsidiaries is then directly engaged. In addition, any potential conflict that qualifies as a “related party transaction” (as defined in Item 404 of Regulation S-K) is subject to review by an independent committee of the applicable issuer’s board of directors in accordance with its corporate governance guidelines. Any other potential conflicts that arise will be addressed on a case-by-case basis, keeping in mind the applicable fiduciary duties owed by the executive officers and directors of each issuer. From time to time, we may enter into transactions with Liberty, Qurate Retail, TripCo or GCI Liberty and/or their respective subsidiaries or other affiliates. There can be no assurance that the terms of any such transactions will be as favorable to our company, Liberty, Qurate Retail, TripCo or GCI Liberty or any of their respective subsidiaries or affiliates as would be the case where there is no overlapping officer or director.

Certain of our inter-company agreements were negotiated while we were a subsidiary of Liberty.

We entered into a number of inter-company agreements covering matters such as tax sharing and our responsibility for certain liabilities previously undertaken by Liberty for certain of our businesses. In addition, we entered into a services agreement with Liberty pursuant to which it provides to us certain management, administrative, financial, treasury, accounting, tax, legal and other services, for which we reimburse them on a fixed fee basis, which was recently amended to provide that components of our President and Chief Executive Officer’s compensation will either be paid directly to him by our company or reimbursed to Liberty, in each case, based on the allocation set forth in the amendment. The terms of all of these agreements (other than the amendment to the services agreement) were established while we were a wholly-owned subsidiary of Liberty, and hence may not be the result of arms’ length negotiations. We believe that the terms of these inter-company agreements are commercially reasonable and fair to all parties under the circumstances; however, conflicts could arise in the interpretation or any extension or renegotiation of the foregoing agreements after the Broadband Spin-Off.

Factors Relating to Charter

The following risks relate specifically to our equity affiliate Charter. If any of these risks were realized, they could have a material adverse effect on the value of our equity interest in Charter, which could negatively impact our stock price and our financial prospects.

Charter operates in a very competitive business environment, which affects its ability to attract and retain customers and can adversely affect its business, operations and financial results.

The industry in which Charter operates is highly competitive and has become more so in recent years. In some instances, Charter competes against companies with fewer regulatory burdens, access to better financing, greater personnel resources, greater resources for marketing, greater and more favorable brand name recognition, and long-established relationships with regulatory authorities and customers. Increasing consolidation in the telecommunications and content industries have provided additional benefits to certain of Charter's competitors, either through access to financing, resources, or efficiencies of scale including the ability to launch new video services.

Charter's video service faces competition from a number of sources, including DBS services, as well as other companies that deliver linear network programming, movies and television shows on demand and other video content over broadband Internet connections to televisions, computers, tablets and mobile devices, often with password sharing among multiple users and security that makes content susceptible to piracy. Newer products and services, particularly alternative methods for the distribution, sale and viewing of content will likely continue to be developed, further increasing the number of competitors that Charter faces.

The increasing number of choices available to audiences, including low-cost or free choices, could negatively impact not only consumer demand for Charter's products and services, but also advertisers' willingness to purchase advertising from Charter. Charter competes for the sale of advertising revenue with television networks and stations, as well as other advertising platforms, such as radio, print and, increasingly, online media.

Charter's Internet service faces competition from the phone companies' FTTH, FTTN, DSL and wireless broadband offerings as well as from a variety of companies that offer other forms of online services, including fixed wireless and satellite-based broadband services. Various mobile phone companies offer wireless Internet services delivered over networks which they continue to enhance to deliver faster speeds and some began deploying 5G mobile services in 2019 with plans to expand 5G more broadly in 2020. Charter's voice and mobile services compete with wireless and wireline phone providers, as well as other forms of communication, such as text messaging on cellular phones, instant messaging, social networking services, video conferencing and email. Competition from these companies, including intensive marketing efforts with aggressive pricing, exclusive programming and increased HD broadcasting may have an adverse impact on Charter's ability to attract and retain customers.

Wireline and wireless overbuilds could also adversely affect Charter's growth, financial condition, and results of operations, by creating or increasing competition. Charter is aware of traditional overbuild situations impacting certain of its service areas, however, Charter is unable to predict the extent to which additional overbuild situations may occur.

Charter's services may not allow it to compete effectively. Charter's failure to effectively anticipate or adapt to new technologies and changes in consumer expectations and behavior could significantly adversely affect its competitive position with respect to the leisure time and discretionary spending of its customers and, as a result, affect its business and results of operations. Competition may reduce its expected growth of future cash flows which may contribute to future impairments of Charter's franchises and goodwill and Charter's ability to meet cash flow requirements, including debt service requirements.

Charter faces risks inherent in its commercial business.

Charter may encounter unforeseen difficulties as it increases the scale of its service offerings to businesses. Charter sells Internet access, data networking and fiber connectivity to office buildings and cellular towers, and video and business voice services to businesses. In order to grow its commercial business, Charter expects to continue to invest in technology, equipment and personnel focused on the commercial business. Commercial business customers often require service level agreements and generally have heightened customer expectations for reliability of services. If Charter's efforts to build the infrastructure to scale the commercial business are not successful, the growth of its commercial services business would be limited. Charter depends on

interconnection and related services provided by certain third parties for the growth of its commercial business. As a result, its ability to implement changes as the services grow may be limited. If Charter is unable to meet these service level requirements or expectations, its commercial business could be adversely affected. Competition continues to increase as well, as more companies deploy more fiber to more buildings, which may negatively impact Charter's growth and/or put pressure on margins. Finally, Charter expects advances in communications technology, as well as changes in the marketplace and the regulatory and legislative environment. Consequently, Charter is unable to predict the effect that ongoing or future developments in these areas might have on its commercial businesses and operations.

Programming costs per video customer are rising at a much faster rate than wages or inflation, and Charter may not have the ability to reduce or moderate the growth rates of, or pass on to its customers, its increasing programming costs, which would adversely affect its cash flow and operating margins.

Video programming has been, and is expected to continue to be, Charter's largest operating expense item. In recent years, the cable industry has experienced a rapid escalation in programming rates. Media corporation consolidation has resulted in fewer suppliers and additional selling power on the part of programming suppliers. Charter expects programming rates will continue to increase due to a variety of factors including annual increases imposed by programmers with additional selling power as a result of media consolidation, increased demands by owners of broadcast stations for payment for retransmission consent or linking carriage of other services to retransmission consent, and additional programming, particularly new services. The inability to fully pass programming cost increases on to its customers has had, and is expected in the future to have, an adverse impact on Charter's cash flow and operating margins associated with the video product. The contracts set to expire in any particular year vary. There can be no assurance that these agreements will be renewed on favorable or comparable terms. In addition, a number of programmers have begun to sell their services through alternative distribution channels, including IP-based platforms, which are less secure than Charter's video distribution platforms. There is growing evidence that these less secure video distribution platforms are leading to video product theft via password sharing among consumers. Password sharing may drive down the number of customers who pay for certain programming, putting programmer revenue at risk, and which in turn may cause certain programmers to seek even higher programming fees from Charter. The ability for consumers to receive the same content for free through such unauthorized channels has devalued Charter's video product which could impact sales, customer retention and Charter's ability to pass through programming costs to consumers, which increases the risk of non-renewal when programmers seek increases. To the extent that Charter is unable to reach agreement with certain programmers on terms that it believes are reasonable, Charter has been, and may be in the future, forced to remove such programming channels from its line-up, which may result in a loss of customers. Charter's failure to carry programming that is attractive to its customers could adversely impact Charter's customer levels, operations and financial results. In addition, if Charter's Internet customers are unable to access desirable content online because content providers block or limit access by its customers as a class, its ability to gain and retain customers, especially Internet customers, may be negatively impacted.

Increased demands by owners of some broadcast stations for carriage of other services or payments to those broadcasters for retransmission consent are likely to further increase Charter's programming costs. Federal law allows commercial television broadcast stations to make an election between "must-carry" rights and an alternative "retransmission-consent" regime. When a station opts for the retransmission-consent regime, Charter is not allowed to carry the station's signal without that station's permission. In some cases, Charter carries stations under short-term arrangements while it attempts to negotiate new long-term retransmission agreements. If negotiations with these programmers prove unsuccessful, they could require Charter to cease carrying their signals, possibly for an indefinite period. Any loss of stations could make Charter's video service less attractive to customers, which could result in less subscription and advertising revenue. In retransmission-consent negotiations, broadcasters often condition consent with respect to one station on carriage of one or more other stations or programming services in which they or their affiliates have an interest. Carriage of these other services, as well as increased fees for retransmission rights, may increase Charter's programming expenses and diminish the amount of capacity it has available to introduce new services, which could have an adverse effect on its business and financial results.

Charter's inability to respond to technological developments and meet customer demand for new products and services could adversely affect its ability to compete effectively.

Charter operates in a highly competitive, consumer-driven and rapidly changing environment. From time to time, Charter may pursue strategic initiatives, including, for example, its wireless strategy which includes the launch of its mobile product through an MVNO and testing the deployment of unlicensed and licensed spectrum for fixed and mobile wireless services. Charter's success is, to a large extent, dependent on its ability to acquire, develop, adopt, upgrade and exploit new and existing technologies to address consumers' changing demands and distinguish its services from those of its competitors. Charter

may not be able to accurately predict technological trends or the success of new products and services. If Charter chooses technologies or equipment that are less effective, cost-efficient or attractive to customers than those chosen by its competitors, if Charter offers services that fail to appeal to consumers, are not available at competitive prices or that do not function as expected, or Charter is not able to fund the expenditures necessary to keep pace with technological developments, its competitive position could deteriorate, and its business and financial results could suffer.

The ability of some of Charter's competitors to introduce new technologies, products and services more quickly than Charter does may adversely affect its competitive position. Furthermore, advances in technology, decreases in the cost of existing technologies or changes in competitors' product and service offerings may require Charter in the future to make additional research and development expenditures or to offer at no additional charge or at a lower price certain products and services that Charter currently offers to customers separately or at a premium. In addition, the uncertainty of Charter's ability, and the costs, to obtain intellectual property rights from third parties could impact its ability to respond to technological advances in a timely and effective manner.

Charter's inability to maintain and expand its upgraded systems and provide advanced services such as a state of the art user interface in a timely manner, or to anticipate the demands of the marketplace, could materially adversely affect Charter's ability to attract and retain customers. In addition, as Charter launches its new mobile services using virtual network operator rights from a third party, Charter expects an initial funding period to grow a new product as well as negative working capital impacts from the timing of device-related cash flows when Charter provides the handset or tablet pursuant to equipment installation plans. Consequently, its growth, financial condition and results of operations could suffer materially.

Charter depends on third party service providers, suppliers and licensors; thus, if it is unable to procure the necessary services, equipment, software or licenses on reasonable terms and on a timely basis, its ability to offer services could be impaired, and Charter's growth, operations, business, financial results and financial condition could be materially adversely affected.

Charter depends on a limited number of third party service providers, suppliers and licensors to supply some of the services, hardware, software and operational support necessary to provide some of its services. Some of Charter's hardware, software and operational support vendors, and service providers represent its sole source of supply or have, either through contract or as a result of intellectual property rights, a position of some exclusivity. If any of these parties breaches or terminates its agreement with Charter or otherwise fails to perform its obligations in a timely manner, demand exceeds these vendors' capacity, tariffs are imposed that impact vendors' ability to perform their obligations or significantly increase the amount Charter pays, they experience operating or financial difficulties, they significantly increase the amount Charter pays for necessary products or services, or they cease production of any necessary product due to lack of demand, profitability or a change in ownership or are otherwise unable to provide the equipment or services Charter needs in a timely manner, at its specifications and at reasonable prices, its ability to provide some services might be materially adversely affected, or the need to procure or develop alternative sources of the affected materials or services might delay Charter's ability to serve its customers. In addition, the existence of only a limited number of vendors of key technologies can lead to less product innovation and higher costs. These events could materially and adversely affect Charter's ability to retain and attract customers and its operations, business, financial results and financial condition.

Charter's business may be adversely affected if Charter cannot continue to license or enforce the intellectual property rights on which its business depends.

Charter relies on patent, copyright, trademark and trade secret laws and licenses and other agreements with its employees, customers, suppliers and other parties to establish and maintain Charter's intellectual property rights in technology and the products and services used in its operations. Also, because of the rapid pace of technological change, Charter both develops its own technologies, products and services and relies on technologies developed or licensed by third parties. However, any of Charter's intellectual property rights, or the rights of its suppliers, could be challenged or invalidated, or such intellectual property rights may not be sufficient to permit Charter to take advantage of current industry trends or otherwise to provide competitive advantages, which could result in costly redesign efforts, discontinuance of certain product or service offerings or other competitive harm. Charter may not be able to obtain or continue to obtain licenses from these third parties on reasonable terms, if at all. In addition, claims of intellectual property infringement could require Charter to enter into royalty or licensing agreements on unfavorable terms, incur substantial monetary liability or be enjoined preliminarily or permanently from further use of the intellectual property in question, which could require Charter to change its business practices or offerings and limit its ability to compete effectively. Even unsuccessful claims can be time-consuming and costly to defend and may divert management's attention and resources away from Charter's business. Infringement claims continue to be brought frequently in

the communications and entertainment industries, and Charter is also often a party to such litigation alleging that certain of its services or technologies infringe the intellectual property rights of others.

Various events could disrupt or result in unauthorized access to Charter's networks, information systems or properties and could impair its operating activities and negatively impact Charter's reputation and financial results.

Network and information systems technologies are critical to Charter's operating activities, both for its internal uses, such as network management and supplying services to Charter's customers, including customer service operations and programming delivery. Network or information system shutdowns or other service disruptions caused by events such as computer hacking, phishing, dissemination of computer viruses, worms and other destructive or disruptive software, "cyber attacks," process breakdowns, denial of service attacks and other malicious activity pose increasing risks. Both unsuccessful and successful "cyber attacks" on companies have continued to increase in frequency, scope and potential harm in recent years. While Charter develops and maintains systems seeking to prevent systems-related events and security breaches from occurring, the development and maintenance of these systems is costly and requires ongoing monitoring and updating as techniques used in such attacks become more sophisticated and change frequently. Charter, and the third parties on which Charter relies, may be unable to anticipate these techniques or implement adequate preventive measures. While from time to time attempts have been made to access Charter's network, these attempts have not as yet resulted in any material release of information, degradation or disruption to its network and information systems.

Charter's network and information systems are also vulnerable to damage or interruption from power outages, telecommunications failures, accidents, natural disasters (including extreme weather arising from short-term or any long-term changes in weather patterns), terrorist attacks and similar events. Charter's system redundancy may be ineffective or inadequate, and Charter's disaster recovery planning may not be sufficient for all eventualities.

Any of these events, if directed at, or experienced by, Charter or technologies upon which Charter depends, could have adverse consequences on Charter's network, customers and business, including degradation of service, service disruption, excessive call volume to call centers, and damage to Charter's or its customers' equipment and data. Large expenditures may be necessary to repair or replace damaged property, networks or information systems or to protect them from similar events in the future. Moreover, the amount and scope of insurance that Charter maintains against losses resulting from any such events or security breaches may not be sufficient to cover Charter's losses or otherwise adequately compensate Charter for any disruptions to its business that may result. Any such significant service disruption could result in damage to Charter's reputation and credibility, customer dissatisfaction and ultimately a loss of customers or revenue. Any significant loss of customers or revenue, or significant increase in costs of serving those customers, could adversely affect Charter's growth, financial condition and results of operations.

Furthermore, Charter's operating activities could be subject to risks caused by misappropriation, misuse, leakage, falsification or accidental release or loss of information maintained in its information technology systems and networks and those of its third-party vendors, including customer, personnel and vendor data. Charter provides certain confidential, proprietary and personal information to third parties in connection with its business, and there is a risk that this information may be compromised.

Charter processes, stores and transmits large amounts of data, including the personal information of its customers. Ongoing increases in the potential for mis-use of personal information, the public's awareness of the importance of safeguarding personal information, and the volume of legislation that has been adopted or is being considered regarding the protection, privacy and security of personal information have resulted in an increase to Charter's information-related risks. Charter could be exposed to significant costs if such risks were to materialize, and such events could damage Charter's reputation, credibility and business and have a negative impact on its revenue. Charter could be subject to regulatory actions and claims made by consumers in private litigations involving privacy issues related to consumer data collection and use practices. Charter also could be required to expend significant capital and other resources to remedy any such security breach.

Charter's exposure to the economic conditions of its current and potential customers, vendors and third parties could adversely affect its cash flow, results of operations and financial condition.

Charter is exposed to risks associated with the economic conditions of its current and potential customers, the potential financial instability of its customers and their financial ability to purchase its products. If there were a general economic downturn, Charter may experience increased cancellations or non-payment by its customers or unfavorable changes in the mix of products purchased. This may include an increase in the number of homes that replace their video service with Internet-delivered and/or

over-air content, as well as an increase in the number of Internet and voice customers substituting mobile data and voice products for wireline services which would negatively impact Charter's ability to attract customers, increase rates and maintain or increase revenue. In addition, Charter's ability to gain new customers is dependent to some extent on growth in occupied housing in its service areas, which is influenced by both national and local economic conditions. Weak economic conditions may also have a negative impact on Charter's advertising revenue. These events have adversely affected Charter in the past, and may adversely affect its cash flow, results of operations and financial condition if a downturn were to occur.

In addition, Charter is susceptible to risks associated with the potential financial instability of the vendors and third parties on which Charter relies to provide products and services or to which it outsources certain functions. The same economic conditions that may affect Charter's customers, as well as volatility and disruption in the capital and credit markets, also could adversely affect vendors and third parties and lead to significant increases in prices, reduction in output or the bankruptcy of Charter's vendors or third parties upon which Charter relies. Any interruption in the services provided by Charter's vendors or by third parties could adversely affect Charter's cash flow, results of operation and financial condition.

For tax purposes, Charter could experience a deemed ownership change in the future that could limit its ability to use its tax loss carryforwards.

Charter had approximately \$7.5 billion of federal tax net operating loss carryforwards resulting in a gross deferred tax asset of approximately \$1.6 billion as of December 31, 2019. These losses resulted from the operations of Charter Communications Holding Company, LLC ("Charter Holdco") and its subsidiaries, and from loss carryforwards received as a result of the merger with TWC. Federal tax net operating loss carryforwards expire in the years 2020 through 2035. In addition, Charter had state tax net operating loss carryforwards resulting in a gross deferred tax asset (net of federal tax benefit) of approximately \$257 million as of December 31, 2019. State tax net operating loss carryforwards generally expire in the years 2020 through 2039.

In the past, Charter has experienced "ownership changes" as defined in Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"). In general, an "ownership change" occurs whenever the percentage of the stock of a corporation owned, directly or indirectly, by "5-percent stockholders" (within the meaning of Section 382 of the Code) increases by more than 50 percentage points over the lowest percentage of the stock of such corporation owned, directly or indirectly, by such "5-percent stockholders" at any time over the preceding three years. As a result, Charter is subject to an annual limitation on the use of its loss carryforwards which existed at November 30, 2009 for the first "ownership change," those that existed at May 1, 2013 for the second "ownership change," and those created at May 18, 2016 for the third "ownership change." The limitation on Charter's ability to use its loss carryforwards, in conjunction with the loss carryforward expiration provisions, could reduce its ability to use a portion of its loss carryforwards to offset future taxable income, which could result in Charter being required to make material cash tax payments. Charter's ability to make such income tax payments, if any, will depend at such time on its liquidity or its ability to raise additional capital, and/or on receipt of payments or distributions from Charter Holdco and its subsidiaries.

If Charter were to experience additional ownership changes in the future (as a result of purchases and sales of stock by its "5-percent stockholders," new issuances or redemptions of its stock, certain acquisitions of its stock and issuances, redemptions, sales or other dispositions or acquisitions of interests in Charter's "5-percent stockholders"), its ability to use its loss carryforwards could become subject to further limitations.

If Charter is unable to retain key employees, its ability to manage its business could be adversely affected.

Charter's operational results have depended, and its future results will depend, upon the retention and continued performance of its management team. Charter's ability to retain and hire new key employees for management positions could be impacted adversely by the competitive environment for management talent in the broadband communications industry. The loss of the services of key members of management and the inability or delay in hiring new key employees could adversely affect Charter's ability to manage its business and its future operational and financial results.

Charter has a significant amount of debt and expects to incur significant additional debt, including secured debt, in the future, which could adversely affect its financial health and its ability to react to changes in its business.

Charter has a significant amount of debt and expects to (subject to applicable restrictions in its debt instruments) incur additional debt in the future as Charter maintains its stated objective of 4.0 to 4.5 times Adjusted EBITDA leverage (its net debt divided by its last twelve months Adjusted EBITDA). As of December 31, 2019, Charter's total principal amount of debt was approximately \$78.4 billion with a leverage ratio of 4.5 times Adjusted EBITDA.

Charter's significant amount of debt could have consequences, such as:

- impact its ability to raise additional capital at reasonable rates, or at all;
- make it vulnerable to interest rate increases, in part because approximately 14% of its borrowings as of December 31, 2019 were, and may continue to be, subject to variable rates of interest;
- expose it to increased interest expense to the extent it refinances existing debt with higher cost debt;
- require it to dedicate a significant portion of its cash flow from operating activities to make payments on its debt, reducing its funds available for working capital, capital expenditures, and other general corporate expenses;
- limit its flexibility in planning for, or reacting to, changes in its business, the cable and telecommunications industries, and the economy at large;
- place it at a disadvantage compared to its competitors that have proportionately less debt; and
- adversely affect its relationship with customers and suppliers.

To the extent Charter's current debt amounts increase more than expected, Charter's business results are lower than expected, or credit rating agencies downgrade its debt limiting its access to investment grade markets, the related risks that Charter now faces will intensify. In addition, Charter's variable rate indebtedness may use London Interbank Offering Rate ("LIBOR") as a benchmark for establishing the rate. The United Kingdom's Financial Conduct Authority, which regulates LIBOR, has announced that it intends to stop encouraging or compelling banks to submit rates for the calculation of LIBOR rates after 2021 (the "FCA Announcement"). The FCA Announcement indicates that the continuation of LIBOR on the current basis is not guaranteed after 2021 and, based on the foregoing, it appears likely that LIBOR will be discontinued or modified by 2021. The effects of the FCA Announcement cannot be entirely predicted, but could include an increase in the cost of Charter's variable rate indebtedness.

The agreements and instruments governing Charter's debt contain restrictions and limitations that could significantly affect its ability to operate its business, as well as significantly affect its liquidity.

Charter's credit facilities and the indentures governing its debt contain a number of significant covenants that could adversely affect Charter's ability to operate its business, its liquidity, and its results of operations. These covenants restrict, among other things, Charter's and Charter's subsidiaries' ability to:

- incur additional debt;
- repurchase or redeem equity interests and debt;
- issue equity;
- make certain investments or acquisitions;
- pay dividends or make other distributions;
- dispose of assets or merge;
- enter into related party transactions; and
- grant liens and pledge assets.

Additionally, the Charter Communications Operating, LLC (“Charter Operating”) credit facilities require Charter Operating to comply with a maximum total leverage covenant and a maximum first lien leverage covenant. The breach of any covenants or obligations in Charter’s indentures or credit facilities, not otherwise waived or amended, could result in a default under the applicable debt obligations and could trigger acceleration of those obligations, which in turn could trigger cross defaults under other agreements governing Charter’s long-term indebtedness. In addition, the secured lenders under Charter’s notes and the Charter Operating credit facilities could foreclose on their collateral, which includes equity interests in Charter’s subsidiaries, and exercise other rights of secured creditors.

Charter’s business is subject to extensive governmental legislation and regulation, which could adversely affect its business.

Regulation of the cable industry has increased cable operators’ operational and administrative expenses and limited their revenue. Cable operators are subject to numerous laws and regulations including those covering the following:

- the provision of high-speed Internet service, including net neutrality and transparency rules;
- the provision of voice communications;
- cable franchise renewals and transfers;
- the provisioning and marketing of cable equipment;
- customer and employee privacy and data security;
- copyright royalties for retransmitting broadcast signals;
- when a cable system must carry a particular broadcast station and when it must first obtain retransmission consent to carry a broadcast station;
- the provision of video channel capacity to unaffiliated commercial leased access programmers;
- limitations on Charter’s ability to enter into exclusive agreements with multiple dwelling unit complexes and control Charter’s inside wiring;
- equal employment opportunity, emergency alert systems, disability access, pole attachments and technical standards;
- marketing practices, customer service, and consumer protection; and
- approval for mergers and acquisitions often accompanied by the imposition of restrictions and requirements on an applicant’s business in order to secure approval of the proposed transaction.

Legislators and regulators at all levels of government frequently consider changing, and sometimes do change, existing statutes, rules, regulations, or interpretations thereof, or prescribe new ones. Any future legislative, judicial, regulatory or administrative actions may increase Charter’s costs or impose additional restrictions on Charter’s businesses.

As a result of the closing of the Transactions, Charter’s businesses are subject to the conditions set forth in the FCC Order and the DOJ Consent Decree and those imposed by state utility commissions and local franchise authorities, and there can be no assurance that these conditions will not have an adverse effect on its businesses and results of operations.

In connection with the Transactions, the FCC Order, the DOJ Consent Decree, and the approvals from state utility commissions and local franchise authorities incorporated numerous commitments and voluntary conditions made by the parties and imposed numerous conditions on Charter’s businesses relating to the operation of Charter’s business and other matters. Under federal approvals, among other things, (i) Charter is not permitted to charge usage-based prices or impose data caps and is prohibited from charging interconnection fees for qualifying parties; (ii) Charter is prohibited from entering into or enforcing any agreement with a programmer that forbids, limits or creates incentives to limit the programmer’s provision of content to OVDs and cannot retaliate against programmers for licensing to OVDs; (iii) Charter is not able to avail itself of other distributors’ MFN provisions if they are inconsistent with this prohibition; (iv) Charter appointed an independent compliance monitor and complies with a broad array of reporting requirements; and (v) Charter must satisfy various other conditions relating to its Internet services, including building out an additional two million locations with access to a high-speed connection of at least 60 megabits per second, and implementing a reduced price high-speed Internet program for low income families. These and other conditions and

commitments relating to the Transactions are of varying duration, ranging from three to seven years. In light of the breadth and duration of the conditions and potential changes in market conditions during the time the conditions and commitments are in effect, there can be no assurance that Charter's compliance, and ability to comply, with the conditions will not have a material adverse effect on its business or results of operations.

Changes to existing statutes, rules, regulations, or interpretations thereof, or adoption of new ones, could have an adverse effect on Charter's business.

There are ongoing efforts to amend or expand the federal, state, and local regulation of some of the services offered over Charter's cable systems, which may compound the regulatory risks Charter already faces. For example, with respect to its retail broadband Internet access service, the FCC has reclassified the service twice in the last few years, with the first change adding federal regulatory obligations and the second change largely removing those new regulatory obligations. These changes reflect a lack of regulatory certainty in this business area, which may continue as a result of litigation, as well as future legislative or administrative changes.

Other potential legislative and regulatory changes could adversely impact Charter's business by increasing its costs and competition and limiting its ability to offer services in a manner that that would maximize its revenue potential. These changes could include, for example, the adoption of new privacy restrictions on Charter's collection, use and disclosure of certain customer information, new data security and cybersecurity mandates that could result in additional network and information security requirements for Charter's business, new restraints on its discretion over programming decisions, including commercial leased access programming, new restrictions on the rates Charter charges for video programming and the marketing and packaging of that video programming and other services to consumers, changes to the cable industry's compulsory copyright license to carry broadcast signals, new requirements to assure the availability of navigation devices (such as set-top boxes) from third party providers, new Universal Service Fund obligations on Charter's provision of Internet service that would add to the cost of that service; increases in government-administered broadband subsidies to rural areas that could result in subsidized overbuilding of Charter's more rural facilities, changes to the FCC's administration of spectrum and changes in the regulatory framework for VoIP phone service, including the scope of regulatory obligations associated with Charter's VoIP service and Charter's ability to interconnect its VoIP service with incumbent providers of traditional telecommunications service.

If any of these such laws or regulations are enacted, they could affect Charter's operations and require significant expenditures. Charter cannot predict future developments in these areas, and Charter is already subject to Charter-specific conditions regarding certain Internet practices as a result of the FCC's approval in 2016 of the Transactions, but any changes to the regulatory framework for Charter's video, Internet or VoIP services could have a negative impact on its business and results of operations.

It remains uncertain what rule changes, if any, will ultimately be adopted by Congress and the FCC and what operating or financial impact any such rules might have on Charter, including, on its programming agreements, customer privacy and the user experience. In addition, the FCC, the FTC, and various state agencies and attorney generals actively investigate industry practices and could impose substantial forfeitures for alleged regulatory violations.

Charter's cable system franchises are subject to non-renewal or termination and are non-exclusive. The failure to renew a franchise or the grant of additional franchises in one or more service areas could adversely affect its business.

Charter's cable systems generally operate pursuant to franchises, permits, and similar authorizations issued by a state or local governmental authority controlling the public rights-of-way. Many franchises establish comprehensive facilities and service requirements, as well as specific customer service standards and monetary penalties for non-compliance. In many cases, franchises are terminable if the franchisee fails to comply with significant provisions set forth in the franchise agreement governing system operations. Franchises are generally granted for fixed terms and must be periodically renewed. Franchising authorities may resist granting a renewal if either past performance or the prospective operating proposal is considered inadequate. Franchise authorities often demand concessions or other commitments as a condition to renewal. In some instances, local franchises have not been renewed at expiration, and Charter has operated and is operating under either temporary operating agreements or without a franchise while negotiating renewal terms with the local franchising authorities.

There can be no assurance that Charter will be able to comply with all significant provisions of its franchise agreements and certain of its franchisers have from time to time alleged that Charter has not complied with these agreements. Additionally, although historically Charter has renewed its franchises without incurring significant costs, there can be no assurance that Charter

will be able to renew, or to renew as favorably, its franchises in the future. A termination of or a sustained failure to renew a franchise in one or more service areas could adversely affect Charter's business in the affected geographic area.

Charter's cable system franchises are non-exclusive. Consequently, local and state franchising authorities can grant additional franchises to competitors in the same geographic area or operate their own cable systems. In some cases, local government entities and municipal utilities may legally compete with Charter on more favorable terms.

Tax legislation and administrative initiatives or challenges to Charter's tax and fee positions could adversely affect its results of operations and financial condition.

Charter operates cable systems in locations throughout the United States and, as a result, is subject to the tax laws and regulations of federal, state and local governments. From time to time, various legislative and/or administrative initiatives may be proposed that could adversely affect Charter's tax positions. There can be no assurance that its effective tax rate or tax payments will not be adversely affected by these initiatives. Certain states and localities have imposed or are considering imposing new or additional taxes or fees on Charter's services or changing the methodologies or base on which certain fees and taxes are computed. Potential changes include additional taxes or fees on Charter's services which could impact its customers, changes to income tax sourcing rules and other changes to general business taxes, central/unit-level assessment of property taxes and other matters that could increase Charter's income, franchise, sales, use and/or property tax liabilities. For example, some local franchising authorities are seeking to impose franchise fee assessments on our broadband Internet access service (in addition to Charter's video service), and more may do so in the future. If they do so, and challenges to such assessments are unsuccessful, it could adversely impact Charter's costs. Although the FCC recently issued a decision precluding the imposition of such duplicative fees, that favorable decision is currently subject to judicial review. In addition, federal, state and local tax laws and regulations are extremely complex and subject to varying interpretations. There can be no assurance that Charter's tax positions will not be challenged by relevant tax authorities or that it would be successful in any such challenge.

Factors Relating to Skyhook

Skyhook faces competition from multiple sources.

Skyhook's Precision Location Solution competes against (1) other satellite and terrestrial based location technology offerings, such as GPS, Observed Time Difference of Arrival and terrestrial beacons; (2) other providers of WiFi and cell-based positioning, such as Google and HERE, a former subsidiary of Nokia; and (3) other in-house developed location solutions. In the smartphone location provider market, because Apple and Google control a large percentage of the market share for smartphone operating systems and both offer location provider services free as part of the iOS and Android markets, Skyhook is constrained in the distribution and monetization of the Precision Location Solution in that market. There are also a number of new location technologies in development which may further increase competition to be a location solution for new devices (such as Internet of Things and wearable devices) and which may require Skyhook to meet more stringent accuracy standards. In addition, Skyhook's Geospatial Insights services compete against other geofencing and location data offerings from other niche location companies.

Certain of Skyhook's competitors are substantially larger than Skyhook and have greater financial, technical, marketing and other resources. Thus, many of these large enterprises are in a better position to withstand any significant reduction in spending by customers in its markets, and often have broader product lines and market focus, have greater brand recognition and may not be as susceptible to downturns in a single market. These competitors may also be able to bundle their products together (such as with mapping software) to meet the needs of a particular customer, may be able to respond more rapidly to new or emerging technologies or changes in customer requirements and may be capable of delivering more complete solutions than Skyhook is able to provide. If large enterprises that currently do not compete directly with Skyhook choose to enter its markets by acquisition or otherwise, competition for both revenue and data would likely intensify. In addition, the growth of new location technologies currently in development may further increase competition to provide these new technologies. If Skyhook is not able to compete successfully for customers, its financial position may be materially adversely affected.

Skyhook is investing in a number of new markets, products and services, but those efforts are still in the early stages and there is no guarantee that such investments will be successful.

In addition to its traditional Precision Location Solution, Skyhook is also investing significant capital in the development, introduction and sale of its Geospatial Insights products. Investing in these new markets and technologies – many of which are early stage – necessarily involves significant risks and uncertainties, including the possibility that revenue from such investments will be insufficient to offset any new liabilities assumed and expenses, an inadequate return of capital on its investments, and the distraction of management and Skyhook from current operations. Such risks and uncertainties could cause Skyhook to fail to realize the anticipated benefits of such investments and incur unanticipated liabilities.

Skyhook's research, development and other investments in new technologies, products or services may not succeed due to, among other things: improvements in alternate technologies in ways that reduce the advantages it anticipates from its investments; competitors' products or services being more cost effective, having more capabilities or fewer limitations or being brought to market faster than Skyhook's new products and services; and competitors having longer operating histories in industry segments that are new to Skyhook. Skyhook may also underestimate the costs of or overestimate the future operating income and/or margins that could result from these investments, and these investments may not, or may take many years to, generate material returns. If Skyhook's new technologies, products or services are not successful, or are not successful in the time frame Skyhook anticipates, Skyhook may incur significant costs and/or asset impairments, its business may not grow as anticipated, its revenue and/or margins may be negatively impacted and/or its reputation may be harmed.

The revenue of Skyhook depends on a limited number of customers, and the loss of its more significant customers could adversely affect its business.

Skyhook derives a significant amount of its revenue from a limited number of customers, and it is anticipated that these customers will continue to represent a significant portion of the revenue of Skyhook. Because Skyhook depends on a limited number of customers, the loss of one or more of these customers could have a material adverse effect on its operating results. Certain of these customers may fail to renew their contracts with Skyhook from time to time, creating additional risk with respect to the potential loss of revenue from these customers. In addition, Skyhook depends on certain customers to transmit location data that assists in keeping Skyhook's proprietary reference database current. If Skyhook is unable to maintain access to these data sources (or alternative sources are unavailable), then Skyhook's ability to derive revenue for its capabilities could be harmed. The loss or reduction of business or data from any combination of these existing customers of Skyhook would materially adversely affect revenue, financial condition and results of operations of Skyhook.

The revenue of Skyhook depends on the performance of device manufacturers, application developers and other resellers of its technology.

Skyhook does not sell its Precisions Location Solution directly to end consumers. Instead, Skyhook provides location technology that integrates with devices and applications that are created or distributed by third parties. Accordingly, Skyhook's future growth significantly depends on third parties choosing to incorporate its technology into new device types and markets other than smartphone devices, such as industrial Internet of Things, connected home and wearable markets. Skyhook also depends on its customers, resellers and licensees to develop products and services with value-added features to drive sales and demand. There can be no assurance that such efforts will be successful.

Skyhook has reported net operating losses in prior years as a result of its investments in new products and markets, and there is no assurance it will be able to attain consistently profitable operations.

Skyhook has reported net operating losses in prior years due, in part, to significant operating expenses related to the aforementioned investments in new markets, products and services. These new investments are intended to replace the revenue that Skyhook lost from the decline of its U-TDOA Service and the loss of another large Skyhook customer, as well as to further grow and diversify Skyhook's revenue stream in a competitive technological environment. There can be no assurance that these investments will drive the revenue growth that is necessary to replace contracts that were lost or that they will be sufficient to achieve profitability.

The underlying business and technology of Skyhook depends on the commercial deployment of wireless and other communications technologies and its ability to continue to drive customer demand for Skyhook products and services in a rapidly evolving and developing industry.

Skyhook develops, patents and commercializes products and services based on wireless and other communications technologies. Skyhook depends on third parties to deploy these wireless technologies and networks in order to operate and deploy Skyhook's products and services. If third parties do not deploy wireless networks or other communication technologies used by Skyhook to operate its location services, or if new technologies or standards are introduced, it could have a material adverse effect on Skyhook's results of operations and financial condition.

As a result of this possibility, Skyhook must stay abreast of rapidly evolving technological developments and offerings (such as the introduction of LoRa Wireless RF technology, a long range, low power consumption and data transmission protocol for Internet of Things devices) to remain competitive and increase the utility of their products and services, and it must be able to incorporate new technologies into its products and services in order to address the needs of its customers. The failure to successfully introduce new or enhanced products and services on a timely and cost-competitive basis that complies with evolving industry standards and regulations or the inability to continue to market existing products on a cost-competitive basis could also have a material adverse effect on Skyhook's results of operations and financial condition.

In addition, in order to successfully develop and market certain of Skyhook's products and services, Skyhook may be required to enter into technology development or licensing agreements with third parties. Skyhook cannot provide assurances that it will be able to timely enter into necessary technology development or licensing agreements on reasonable terms, or at all.

Actions taken by Skyhook to protect its intellectual property rights, such as through a licensing program or through litigation to enforce its intellectual property rights, could result in substantial costs, and Skyhook's ability to compete could be harmed if it fails to take such actions or is unsuccessful in doing so.

Skyhook relies primarily on a combination of patents, trademarks, trade secrets, employee and third-party nondisclosure agreements, licensing arrangements and other methods to protect its intellectual property in the United States and internationally. Skyhook has numerous patents issued, allowed and pending in the United States and/or in foreign jurisdictions which primarily relate to products and the technology used in connection with the products and services it offers. Skyhook cannot be certain that the steps it has taken, or may take in the future, will prevent the misappropriation or unauthorized use of its proprietary information and technologies, particularly in foreign countries where international treaties, organizations and foreign laws may not protect its proprietary intellectual property rights as fully or as readily as United States laws or where the enforcement of such laws may be lacking or ineffective. Any pending patent applications and any future applications may not be approved, and any issued patents may not provide Skyhook with competitive advantages, or such issued patents may be challenged, invalidated, infringed, circumvented or misappropriated by third parties.

While Skyhook believes that it has a defensible and useful patent portfolio and it actively seeks to generate revenue through the licensing of its patents and other assets, it cannot assure you that its attempts to secure future patent licenses will be successful or that it will generate meaningful revenue from licensing. In addition, in connection with actively seeking to license and enforce its patents and other intellectual property, Skyhook has in the past been required and may be required in the future to initiate litigation in order to assert claims of infringement of its intellectual property, enforce patents issued or licensed to them, protect their trade secrets or know-how or to determine the scope and/or validity of a third party's patent or other proprietary rights. Such litigation may involve significant costs and any such litigation could also result in rulings impacting the validity or enforceability of Skyhook's patents, which could result in new or increased competition that could have a material adverse effect on Skyhook's results of operations and financial condition. There can be no assurances that Skyhook would be successful in any such litigation.

Skyhook could face intellectual property lawsuits from competitors or non-practicing entities.

Other companies, including some of Skyhook's largest competitors, hold intellectual property rights in its industry which could inhibit Skyhook's ability to introduce new products and services unless it secures necessary licenses on commercially reasonable terms. Furthermore, as the number of issued patents increases and as competition intensifies, the volume of intellectual property infringement claims and lawsuits may also increase. Skyhook may in the future become involved in lawsuits or other legal proceedings alleging patent infringement or other intellectual property rights violations by Skyhook or parties that it has agreed to indemnify for certain claims of infringement. Third parties may also claim that employees of Skyhook have

misappropriated or divulged their former employers' trade secrets or confidential information. Any such litigation, regardless of outcome, could subject Skyhook to significant costs or liabilities or require it to cease using proprietary third party technology and, consequently, could have a material adverse effect on its results of operations and financial condition. If infringement claims are made against Skyhook or its products are found to infringe a third parties' patent or intellectual property, Skyhook or one of its indemnitees may have to seek a license to the third parties' patent or other intellectual property rights. However, Skyhook may not be able to obtain licenses at all or on terms acceptable to it particularly from its competitors. If Skyhook or one of its indemnitees is unable to obtain a license from a third party for technology that Skyhook uses or that is used in one of its products, Skyhook could be subject to substantial liabilities or have to suspend or discontinue the manufacture and sale of one or more of its products. It may also have to make royalty or other payments, cross license technology or make payments pursuant to third party indemnitees.

The success of Skyhook depends on the integrity of its systems and infrastructures.

Skyhook relies on its enterprise resource planning systems to support such critical business operations as processing sales orders and invoicing, purchasing and supply chain management, human resources and financial reporting. Portions of Skyhook's IT infrastructure may experience interruptions of service or produce errors in connection with systemic failures, systems integration or migration work that takes place from time to time. Skyhook may not be successful in implementing new systems and transitioning data, which could cause business disruptions and be more expensive, time consuming, disruptive and resource-intensive. If Skyhook is unable to successfully implement major systems initiatives and maintain critical information systems, it could encounter difficulties that could have a material adverse impact on its business.

Furthermore, the businesses of Skyhook depend on delivering products and services of consistently high quality and reliability to customers. If the services offered by Skyhook were to fail or not to perform as expected, its services could be rendered ineffective, and any significant or systemic service failure could also result in a loss of customer confidence, as well as reputational damage, resulting in a material adverse impact on Skyhook's business.

The regulatory environment in which Skyhook operates is complex.

Skyhook is subject to a variety of laws and regulations in the United States and in foreign jurisdictions that involve matters central to its technology and ongoing business, including the collection and storage of location information, privacy and data protection, intellectual property, data security and data retention, and other business and ethics compliance-related laws. The application, scope, interpretation, and enforcement of applicable laws and regulations in many of these areas are often uncertain, particularly in the new and rapidly-evolving mobile technology industry in which Skyhook operates. In addition, existing laws may be interpreted and applied inconsistently from one jurisdiction to another, and inconsistently with Skyhook's current policies and practices. The introduction of new products or the expansion of Skyhook's sales activities in certain jurisdictions may subject it to additional laws and regulations, or increase the risk posed to Skyhook's business by non-compliance.

Skyhook is also monitoring additional proposed and pending legislation and regulations in the U.S. and abroad that are related to its technology and business operations, including regulations that implement specific privacy or data protection rules. There can be no assurance that future legislation or regulations will not have a material impact upon Skyhook's ability to operate its business, collect the location data required for its operational needs, or generate revenue.

The existing and proposed laws and regulations that are applicable to Skyhook's business, as well as any associated inquiries, investigations, or actions from governmental authorities or private citizens, can be costly to comply with, can delay or impede the development of new products, may result in negative publicity or cause reputational damage, may increase operating cost and require significant management time and attention, and may subject Skyhook to various possible remedies, including fines, penalties, injunctions or other orders.

New data protection and data transfer laws around the world could impact Skyhook's business and its ability to collect location data, and impose significant compliance costs.

Skyhook is, or may become, subject to various data protection, privacy, and other laws and regulations in various jurisdictions around the world. Such laws could impact Skyhook's ability to generate revenue, to transfer or collect data necessary to its operations, or prevent, slow or deter Skyhook's entry into certain regions. For example, as a result of its international activities, Skyhook is subject to laws and regulations that dictate whether, how, and under what circumstances it can transfer or

process data from the EU to the United States. In addition, certain activities of Skyhook are subject to the GDPR which came into effect in May 2018 and imposes stringent requirements on businesses that collect and process “personal data” from individuals in the EU. The GDPR subjects businesses to significant fines and other penalties for non-compliance.

Since the GDPR took effect, the EU has released guidance regarding the application of the regulation, and enforcement actions have been initiated pursuant to the GDPR. However, the scope, application and enforcement of the GDPR are uncertain. There can be no assurance that Skyhook will be compliant, or that the costs of compliance (and the resources and changes to technology and infrastructure that could be required) will not be material to Skyhook’s business.

Privacy concerns relating to location data generally and Skyhook’s technology could damage its reputation and deter current and potential users from using its products and applications.

Concerns about the collection of location data generally, or about the specific practices of Skyhook with regard to the collection, use, disclosure, or security of location information or other privacy related matters, even if unfounded, could damage its reputation and operating results. While Skyhook strives to comply with all applicable data protection laws and regulations, as well as its own posted privacy policies, any failure or perceived failure to comply may result in proceedings or actions against Skyhook by government entities or others, or could cause it to lose users and customers, which could potentially have an adverse effect on Skyhook’s data inflows and revenue generating capabilities.

Security breaches and other disruptions, including as a result of cyber attacks, could compromise the information collected and stored by Skyhook and expose it to liability, which would cause business and reputational damage.

In the ordinary course of business, Skyhook collects and stores sensitive data, including intellectual property, its proprietary business information and information about mobile device and radio beacon locations (of its customers and suppliers). The secure processing, maintenance and transmission of this information in its facilities and on its networks is important to its operations. Unauthorized parties may attempt to gain access to Skyhook’s or its vendors’ information technology systems or data by, among other things, hacking into Skyhook’s systems or those of third parties, through fraud or other means of deceiving Skyhook’s employees or vendors, burglaries, errors by Skyhook’s or its vendors’ employees, misappropriation of data by employees, or other irregularities that may result in persons obtaining unauthorized access to Skyhook’s information technology systems or data. The techniques used to gain such access to Skyhook’s or its vendors’ information technology systems or data, disable or degrade service, or sabotage systems are constantly evolving, may be difficult to detect quickly, and often are not recognized until launched against a target. Skyhook has implemented systems and processes intended to secure its information technology systems and prevent unauthorized access to or loss of sensitive data, but as with all companies, these security measures may not be sufficient for all eventualities and there is no guarantee that they will be adequate to safeguard against all data security breaches, system compromises or misuses of data, which could result in data being accessed, publicly disclosed, lost or stolen. Skyhook’s efforts to protect its information technology systems and data may also be unsuccessful due to software bugs, break-ins, employees’ error or other threats that evolve. Any penetration of network security or other misappropriation or misuse of data could cause interruptions in the operations of Skyhook’s business and subject it to increased costs, fines, litigation, regulatory actions and other liabilities. Security breaches could also significantly damage its reputation with customers and third parties with whom it does business, which could result in a decline in revenue and customer attrition. Skyhook continues to invest in new and emerging technology and other solutions to protect its information technology systems, but there can be no assurance that these investments and solutions will prevent any of the risks described above. If Skyhook is unable to maintain security of its systems, it could suffer loss of customers, diversion of management attention, and deterioration of its competitive position and incur liability for any damage to customers whose data is unlawfully obtained and used. Skyhook may be required to expend significant additional capital and other resources to protect against and remedy any potential or existing security breaches and their consequences, such as additional infrastructure capacity spending to mitigate any system degradation and the reallocation of resources from development activities. Skyhook also faces similar risks associated with security breaches affecting third parties with which it is affiliated or otherwise conduct business online. While Skyhook maintains cyber liability insurance that provides both third-party liability and first-party insurance coverage, its insurance may not be sufficient to protect against all of its losses from any future disruptions or breaches of its systems or other events as described above.

Factors Relating to our Common Stock and the Securities Market

We expect our stock price to continue to be directly affected by the results of operations of Charter and developments in its business.

The fair value of our investment in Charter, on an as-converted basis, was approximately \$26.2 billion as of December 31, 2019, which represents all of our total market value. As a result, our stock price will continue to be directly affected by the results of operations of Charter and the developments in its business.

Although our Series B common stock is quoted on the OTC Markets, there is no meaningful trading market for the stock.

Our Series B common stock is not widely held, with approximately 96% of the outstanding shares beneficially owned by John C. Malone, the Chairman of the board and a director of our company as of January 31, 2020. Although it is quoted on the OTC Markets, it is sparsely traded and does not have an active trading market. The OTC Markets tend to be highly illiquid, in part, because there is no national quotation system by which potential investors can track the market price of shares except through information received or generated by a limited number of broker-dealers that make markets in particular stocks. There is also a greater chance of market volatility for securities that trade on the OTC Markets as opposed to a national exchange or quotation system. This volatility is due to a variety of factors, including a lack of readily available price quotations, lower trading volume, absence of consistent administrative supervision of "bid" and "ask" quotations, and market conditions. Each share of the Series B common stock is convertible, at any time at the option of the holder, into one share of our Series A common stock, which is listed and traded on the Nasdaq Global Select Market under the symbol "LBRDA."

It may be difficult for a third party to acquire us, even if doing so may be beneficial to our stockholders.

Certain provisions of our certificate of incorporation and bylaws may discourage, delay or prevent a change in control of our company that a stockholder may consider favorable. These provisions include the following:

- authorizing a capital structure with multiple series of common stock: a Series B that entitles the holders to ten votes per share, a Series A that entitles the holders to one vote per share and a Series C that, except as otherwise required by applicable law, entitles the holders to no voting rights;
- authorizing the issuance of "blank check" preferred stock, which could be issued by our board of directors to increase the number of outstanding shares and thwart a takeover attempt;
- classifying our board of directors with staggered three-year terms, which may lengthen the time required to gain control of our board of directors;
- limiting who may call special meetings of stockholders;
- prohibiting stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of the stockholders;
- establishing advance notice requirements for nominations of candidates for election to our board of directors or for proposing matters that can be acted upon by stockholders at stockholder meetings;
- requiring stockholder approval by holders of at least 66 2/3% of our voting power or the approval by at least 75% of our board of directors with respect to certain extraordinary matters, such as a merger or consolidation of our company, a sale of all or substantially all of our assets or an amendment to our restated certificate of incorporation; and
- the existence of authorized and unissued stock which would allow our board of directors to issue shares to persons friendly to current management, thereby protecting the continuity of its management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us.

In addition, John C. Malone currently beneficially owns shares representing the power to direct approximately 49% of the aggregate voting power in our company, due to his beneficial ownership of approximately 96% of the outstanding shares of our Series B common stock as of January 31, 2020.

Holders of a single series of our common stock may not have any remedies if an action by our directors has an adverse effect on only that series of our common stock.

Principles of Delaware law and the provisions of our certificate of incorporation may protect decisions of our board of directors that have a disparate impact upon holders of any single series of our common stock. Under Delaware law, the board of directors has a duty to act with due care and in the best interests of all of our stockholders, including the holders of all series of our common stock. Principles of Delaware law established in cases involving differing treatment of multiple classes or series of stock provide that a board of directors owes an equal duty to all common stockholders regardless of class or series and does not have separate or additional duties to any group of stockholders. As a result, in some circumstances, our directors may be required to make a decision that is viewed as adverse to the holders of one series of our common stock. Under the principles of Delaware law and the business judgment rule, holders may not be able to successfully challenge decisions that they believe have a disparate impact upon the holders of one series of our stock if our board of directors is disinterested and independent with respect to the action taken, is adequately informed with respect to the action taken and acts in good faith and in the honest belief that the board is acting in the best interest of all of our stockholders.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties.

Liberty Broadband

In connection with the Broadband Spin-Off, a wholly-owned subsidiary of Liberty entered into a facilities sharing agreement with Liberty Broadband, pursuant to which Liberty Broadband shares office facilities with Liberty located at 12300 Liberty Boulevard, Englewood, Colorado, 80112.

Skyhook

Skyhook maintains corporate offices in two locations: Boston, Massachusetts and Wayne, Pennsylvania. Skyhook subleases an approximately 8,000 square foot facility in Boston, which expires in December 2022, and a 6,751 square foot facility in Wayne, which expires in December 2020.

Item 3. Legal Proceedings

Charter and Liberty Broadband - Delaware Litigation

On August 21, 2015, a purported stockholder of Legacy Charter filed a lawsuit in the Delaware Court of Chancery (the “Court”), on behalf of a putative class of Legacy Charter stockholders, challenging the Transactions. The lawsuit is captioned *Sciabacucchi v. Liberty Broadband Corp.*, C.A. No. 11418-VCG (the “Delaware Action”), and names as defendants Liberty Broadband, Charter and the board of directors of Charter. Plaintiff alleged that the Transactions resulted from breaches of fiduciary duty by Charter’s directors and that Liberty Broadband improperly benefited from the challenged transactions at the expense of other Charter stockholders. The lawsuit has proceeded to the discovery phase. Charter and Liberty Broadband deny any liability, believe that they have substantial defenses, and are vigorously defending this lawsuit. Although Charter is unable to predict the outcome of this lawsuit, it does not expect the outcome will have a material effect on its operations, financial condition or cash flows.

Other Charter Proceedings

The California Attorney General and the Alameda County, California District Attorney are investigating whether certain of Charter’s waste disposal policies, procedures and practices are in violation of the California Business and Professions Code and the California Health and Safety Code. That investigation was commenced in January 2014. A similar investigation involving TWC was initiated in February 2012. Charter is cooperating with these investigations. While Charter is unable to predict the outcome of these investigations, it does not expect that the outcome will have a material effect on its operations, financial condition, or cash flows.

On December 19, 2011, Sprint Communications Company L.P. (“Sprint”) filed a complaint in the U.S. District Court for the District of Kansas alleging that TWC infringed certain U.S. patents purportedly relating to VOIP services. At the trial, the jury returned a verdict of \$140 million against TWC and further concluded that TWC had willfully infringed Sprint’s patents. The court subsequently declined to enhance the damage award as a result of the purported willful infringement and awarded Sprint an additional \$6 million, representing pre-judgment interest on the damages award. Charter appealed the case to the United States Court of Appeals for the Federal Circuit where it lost the appeal. Charter filed a petition for writ of certiorari with the United States Supreme Court which was denied on November 4, 2019. Charter has now paid the verdict, interest and costs in full. Charter continues to pursue indemnity from one of its vendors and has brought a patent suit against Sprint (TC Tech v. Sprint) in the U.S. District Court for the District of Delaware implicating Sprint's LTE technology. The ultimate outcomes of the pursuit of indemnity against Charter’s vendor and the TC Tech litigation cannot be predicted. Charter does not expect the outcome of its indemnity claim nor the outcome of the TC Tech litigation will have a material adverse effect on its operations or financial condition.

Sprint filed a suit against Charter and Bright House on December 2, 2017 in the United States District Court for the District of Delaware. This suit alleges infringement of 15 patents related to Charter's provision of VoIP services (ten of which were asserted against Legacy TWC in the matter described above). Charter is vigorously defending this case. While Charter is unable to predict the outcome of this Sprint suit, it does not expect that this litigation will have a material effect on its operations, financial condition, or cash flows.

Sprint filed a third suit against Charter on May 17, 2018 in the United States District Court for the Eastern District of Virginia. This suit alleges infringement of three patents related to Charter's video on demand services. Charter is vigorously defending this case. The court transferred this case to the United States District Court for the District of Delaware on December 20, 2018 pursuant to an agreement between the parties. While Charter is unable to predict the outcome of this litigation, it does not expect that this litigation will have a material effect on its operations, financial condition, or cash flows.

In addition to the Sprint litigation described above, Charter is a defendant or co-defendant in several additional lawsuits involving alleged infringement of intellectual property relating to various aspects of its businesses. Other industry participants are also defendants in certain of these cases. In the event that a court ultimately determines that Charter infringes on any intellectual property, Charter may be subject to substantial damages and/or an injunction that could require Charter or its vendors to modify certain products and services it offers to its subscribers, as well as negotiate royalty or license agreements with respect to the intellectual property at issue. While Charter believes the lawsuits are without merit and intends to defend the actions vigorously, no assurance can be given that any adverse outcome would not be material to Charter’s consolidated financial condition, results of operations, or liquidity. Charter cannot predict the outcome of any such claims nor can it reasonably estimate a range of possible loss.

Charter is party to other lawsuits, claims and regulatory inquiries that arise in the ordinary course of conducting its business. The ultimate outcome of these other legal matters pending against Charter or its subsidiaries cannot be predicted, and although such lawsuits and claims are not expected individually to have a material adverse effect on our or Charters’ consolidated financial condition, results of operations, or liquidity, such lawsuits could have in the aggregate a material adverse effect on ours or Charter’s consolidated financial condition, results of operations, or liquidity. Whether or not Charter ultimately prevails in any particular lawsuit or claim, litigation can be time consuming and costly and injure its reputation.

Item 4. Mine Safety Disclosures

Not applicable.

PART II**Item 5. Market for Registrant's Common Equity and Related Stockholder Matters of Equity Securities.*****Market Information***

Our Series A and Series C common stock trade on the Nasdaq Global Select Market under the symbols "LBRDA" and "LBRDK," respectively. Our Series B common stock is quoted on the OTC Markets under the symbol "LBRDB", but it is not actively traded. Stock price information for securities traded on the Nasdaq Global Select Market can be found on the Nasdaq's website at www.nasdaq.com.

The following table sets forth the quarterly range of high and low sales prices of our Series B common stock for the years ended December 31, 2019 and 2018. There is no established public trading market for our Series B common stock, which is quoted on the OTC Markets. Such over-the-counter market quotations reflect inter-dealer prices without dealer mark-ups, mark-downs or commissions, and may not necessarily represent actual transactions.

	Liberty Broadband Corporation	
	Series B	
	(LBRDB)	
	High	Low
<u>2018</u>		
First quarter	\$ 94.05	86.17
Second quarter	\$ 77.22	68.32
Third quarter	\$ 84.93	79.09
Fourth quarter	\$ 84.70	74.50
<u>2019</u>		
First quarter	\$ 90.50	75.85
Second quarter	\$ 100.85	96.95
Third quarter	\$ 108.85	98.60
Fourth quarter	\$ 124.20	109.75

Holdings

As of January 31, 2020, there were 731, 47 and 946 holders of our Series A, Series B and Series C common stock, respectively. The foregoing numbers of record holders do not include the number of stockholders whose shares are held nominally by banks, brokerage houses or other institutions, but include each such institution as one shareholder.

Dividends

We have not paid any cash dividends on our common stock, and we have no present intention of so doing. Payment of cash dividends, if any, in the future will be determined by our board of directors in light of our earnings, financial condition and other relevant considerations.

Securities Authorized for Issuance Under Equity Compensation Plans

Information required by this item is incorporated by reference to our definitive proxy statement for our 2020 Annual Meeting of Stockholders.

Purchases of Equity Securities by the Issuer

There were no repurchases of Liberty Broadband Series A, B or C common stock during the three months ended December 31, 2019. During the three months ended December 31, 2019, 2,336 shares of Series A and 4,660 shares of Series C

Liberty Broadband common stock were surrendered by our officers and employees to pay withholding taxes and other deductions in connection with the vesting of their restricted stock.

Item 6. Selected Financial Data.

The following tables present selected historical information relating to our financial condition and results of operations for the past five years. The following data should be read in conjunction with our consolidated financial statements.

	December 31,				
	2019	2018	2017	2016	2015
<i>Summary Balance Sheet Data:</i>					
	amounts in thousands				
Cash and cash equivalents	\$ 49,724	83,103	81,257	205,728	655,079
Investments in available for sale securities (1)	\$ —	—	—	—	439,560
Investment in affiliates, accounted for using the equity method (1)	\$ 12,194,674	12,004,376	11,835,613	9,315,253	2,372,699
Total assets	\$ 12,256,342	12,098,437	11,931,789	9,590,960	3,565,741
Long-term debt	\$ 572,944	522,928	497,370	198,512	399,703
Net deferred income tax liabilities (2)	\$ 999,757	965,829	932,593	504,644	—
Total equity (3)	\$ 10,667,946	10,598,618	10,486,901	8,473,092	3,148,219

	Years Ended December 31,				
	2019	2018	2017	2016	2015
<i>Summary Statement of Operations Data:</i>					
	amounts in thousands, except per share amounts				
Revenue	\$ 14,859	22,256	13,092	30,586	91,182
Operating income (loss)	\$ (29,277)	(12,014)	(25,478)	(21,160)	58,955
Share of earnings (losses) of affiliate (1)(4)	\$ 286,401	166,146	2,508,991	641,544	(120,962)
Gain (loss) on dilution of investment in affiliate (1)	\$ (79,329)	(43,575)	(17,872)	770,766	(7,198)
Realized and unrealized gains (losses) on financial instruments	\$ 1,170	3,659	3,098	94,122	2,619
Net earnings (loss) attributable to Liberty Broadband shareholders	\$ 117,216	69,953	2,033,667	917,303	(50,187)
Basic earnings (loss) per common share (5)	\$ 0.65	0.39	11.19	6.03	(0.49)
Diluted earnings (loss) per common share (5)	\$ 0.64	0.38	11.10	6.00	(0.49)

- (1) As discussed in note 5 to the accompanying consolidated financial statements, on May 18, 2016 Time Warner Cable merged with Charter, causing a significant increase in Share of earnings (losses) of affiliate and gain on dilution of investment in affiliate in 2016. As a result of the merger transaction, Time Warner Cable is no longer accounted for as an available for sale security as of December 31, 2016.
- (2) The increase in deferred tax liabilities is due to recognition of deferred tax liabilities at the closing of the transactions, further increased in 2016, 2017, 2018 and 2019 by share of earnings in the equity investment in Charter.
- (3) As discussed in note 8 to the accompanying consolidated financial statements, in connection with the Time Warner Cable Merger, in May 2016, Liberty Broadband funded its purchase of Charter Class A common stock using proceeds of \$4.4 billion related to subscriptions for approximately 78.3 million newly issued shares of Liberty Broadband Series C common stock.
- (4) Share of earnings (losses) of affiliate increased in 2016 due primarily to Charter releasing approximately \$3.3 billion of its preexisting valuation allowance, which was recognized directly to income tax benefit for the year ended December 31, 2016. Additionally, Charter recognized \$9.1 billion of income tax benefit, as a result of the enactment of the Tax Cuts and Jobs Act (the "Tax Act") in 2017. See further discussion in Item 7 regarding the tax reform implications.
- (5) We issued 85,761,332 common shares, which is the aggregate number of shares of Series A, Series B and Series C common stock outstanding upon the completion of the Broadband Spin-Off on November 4, 2014. Additionally, Liberty Broadband distributed subscription rights, which were priced at a discount to the market value, to all holders of Liberty Broadband common stock as of the rights record date. Because of the discount, the rights offering is considered a stock dividend which requires retroactive treatment for prior periods for the weighted average shares outstanding based on a

factor determined by the fair value per share immediately prior to the rights exercise and the theoretical fair value after the rights exercise. The number of shares issued upon completion of the Broadband Spin-Off, adjusted for the rights factor, was used to determine both basic and diluted earnings (loss) per share ("EPS") for the years ended December 31, 2013 and 2012 and for the period from January 1, 2014 through the date of the Broadband Spin-Off, as no Company equity awards were outstanding prior to the Broadband Spin-Off. Basic EPS subsequent to the Broadband Spin-Off was computed using the weighted average number of shares outstanding ("WASO"), adjusted for the rights factor, from the date of the completion of the Broadband Spin-Off through January 9, 2015, the date on which the rights offering was fully subscribed. Diluted EPS subsequent to the Broadband Spin-Off was computed using the WASO from the date of the completion of the Broadband Spin-Off through January 9, 2015, adjusted for the rights factor and potentially dilutive equity awards outstanding during the same period. Subsequent to January 9, 2015, basic EPS was computed using the WASO during the period, and diluted EPS was computed using the WASO adjusted for potentially dilutive equity awards outstanding during the period.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis provides information concerning our results of operations and financial condition. This discussion should be read in conjunction with our accompanying consolidated financial statements and the notes thereto. Additionally, see note 3 in the accompanying consolidated financial statements for an overview of new accounting standards that we have adopted or that we plan to adopt that have had or may have an impact on our financial statements.

Overview

During May 2014, the board of directors of Liberty Media Corporation and its subsidiaries ("Liberty") authorized management to pursue a plan to spin-off to its stockholders common stock of a wholly-owned subsidiary, Liberty Broadband Corporation ("Liberty Broadband"), and to distribute subscription rights to acquire shares of Liberty Broadband's common stock (the "Broadband Spin-Off"). At the time of the Broadband Spin-Off, Liberty Broadband was comprised of, (i) Liberty's former interest in Charter Communications, Inc. ("Legacy Charter"), (ii) Liberty's former wholly-owned subsidiary TruePosition, Inc. ("TruePosition"), (iii) Liberty's former minority equity investment in Time Warner Cable, Inc. ("Time Warner Cable", "TWC", "Legacy Time Warner Cable" or "Legacy TWC"), (iv) certain deferred tax liabilities, as well as liabilities related to the Time Warner Cable written call options and (v) initial indebtedness, pursuant to margin loans entered into prior to the completion of the Broadband Spin-Off. The Broadband Spin-Off was accounted for at historical cost due to the pro rata nature of the distribution to holders of Liberty common stock. In the Broadband Spin-Off, record holders of Liberty Series A, Series B and Series C common stock received one-fourth of a share of the corresponding series of Liberty Broadband common stock for each share of Liberty common stock held by them, with cash paid in lieu of fractional shares. In addition, following the completion of the Broadband Spin-Off, on December 10, 2014, stockholders received a subscription right to acquire one share of Series C Liberty Broadband common stock for every five shares of Liberty Broadband common stock. The Broadband Spin-Off and rights offering were intended to be tax-free to stockholders of Liberty. During September 2015, Liberty entered into a closing agreement with the IRS which provided that the Broadband Spin-Off qualified for tax-free treatment.

On May 18, 2016, Time Warner Cable merged with Legacy Charter (the "Time Warner Cable Merger"). In connection with the Time Warner Cable Merger, Legacy Charter underwent a corporate reorganization, resulting in CCH I, LLC, a former subsidiary of Legacy Charter ("Charter"), becoming the new publicly traded parent company. Also on May 18, 2016, the previously announced acquisition of Bright House Networks, LLC ("Bright House" or "Legacy Bright House") from Advance/Newhouse Partnership ("A/N") by Charter (the "Bright House Transaction") was completed. In connection with the Time Warner Cable Merger and Bright House Transaction, Liberty Broadband entered into certain agreements with Legacy Charter, Charter, Liberty Interactive Corporation ("Liberty Interactive") and Time Warner Cable. In connection with the Time Warner Cable Merger and Bright House Transaction (collectively, the "Transactions"), Liberty Broadband exchanged its shares of Time Warner Cable for shares of Charter and purchased additional shares of Charter. As a result, and pursuant to proxy agreements with GCI Liberty, Inc. and A/N, Liberty Broadband controls 25.01% of the aggregate voting power of Charter. In addition, in connection with the Time Warner Cable Merger, Liberty Broadband funded its purchase of shares of Charter Class A common stock using proceeds of \$4.4 billion related to subscriptions for approximately 78.3 million newly issued shares of Liberty Broadband Series C common stock.

The financial information represents a combination of the historical financial information of Skyhook, Liberty Broadband's interest in Charter, Liberty's former minority equity investment in Time Warner Cable and certain deferred tax liabilities. This financial information refers to the combination of the aforementioned subsidiary, investments, and financial instruments, as "Liberty Broadband," "the Company," "us," "we" and "our" here and in the notes to the consolidated financial statements, except as the context otherwise requires.

Strategies and Challenges

Executive Summary

Skyhook Holding, Inc. (formerly known as "TruePosition") markets and sells two primary products: (1) a location determination service called the Precision Location Solution; and (2) a location intelligence and data insights service called Geospatial Insights. Skyhook's revenue is derived from the sale and integration of its Precision Location Solution (including the licensing of software and data components that make up that solution) and the licensing of Geospatial Insights data. In addition, Skyhook earns revenue through entering into licensing agreements with companies to utilize its underlying intellectual property (including patents).

Charter is the second largest cable operator in the United States and a leading broadband communications services company providing video, Internet and voice services to approximately 29.2 million residential and small and medium business customers at December 31, 2019. Charter offers mobile services to residential customers and recently launched mobile service to small and medium business customers. In addition, Charter sells video and online advertising inventory to local, regional and national advertising customers and tailored communications and managed solutions to larger enterprise customers. Charter also owns and operates regional sports networks and local sports, news and community channels. Liberty acquired its interest in Charter on May 1, 2013. At December 31, 2019, Liberty Broadband owned approximately 54.1 million shares of Charter Class A common stock, representing an approximate 26% economic ownership interest in Charter's issued and outstanding shares. Upon the closing of the Time Warner Cable Merger, the Second Amended and Restated Stockholders Agreement, dated as of May 23, 2015, by and among Legacy Charter, Charter, Liberty Broadband and A/N, as amended (the "Stockholders Agreement"), became fully effective. Under the Stockholders Agreement, we have the right to designate three directors to the Charter board of directors, subject to certain exclusions and requirements. Charter has agreed to cause the appointment of at least one of our designees to serve on the nominating and corporate governance, finance, audit and compensation and benefits committees of the board, provided they meet the independence and other qualifications for membership on those committees.

Key Drivers of Revenue

Skyhook earns revenue from the sale and integration of its Precision Location Solution (including the licensing of software and data components that make up that solution) and the licensing of Geospatial Insights data. In addition, Skyhook earns revenue from licensing its intellectual property (including patents) to other enterprises. Prior to 2016, Skyhook also earned significant revenue from the sale of hardware and the licensing of its U-TDOA Service, and from professional and support services related thereto.

Charter's revenue is principally derived from the monthly fees customers pay for the residential and commercial video, Internet and voice services provided. Charter also earns revenue from one-time installation fees and advertising sales. Charter's marketing organization creates and executes marketing programs intended to grow customer relationships, increase the number of services they sell per relationship, retain existing customers and cross-sell additional products to current customers.

Current Trends Affecting Our Business

Skyhook's location determination services compete against (1) other satellite and terrestrial based location technology offerings, such as GPS; (2) other providers of WiFi and cell-based positioning, such as Google, Inc. ("Google") and HERE, a former subsidiary of Nokia; and (3) other in-house developed location solutions. In the smartphone location provider market, because Apple and Google control a large percentage of the market share for smartphone operating systems and both offer location provider services free as part of the iOS and Android markets, Skyhook is constrained in the distribution and monetization of the Precision Location Solution in that market. There are also a number of new location technologies in development which may further increase competition to be a location solution for new devices (including Internet of Things devices and wearable) and which may require Skyhook to meet more stringent accuracy standards. In addition, Skyhook's context services compete against other geofencing and location data offerings from other niche location companies.

Charter faces intense competition for residential customers, both from existing competitors and, as a result of the rapid development of new technologies, services and products, from new entrants. Charter faces triple play competition, consisting of wireline multichannel video, wireline Internet, and wireline voice service from three primary competitors. With respect to its residential business, Charter competes with other providers of video, high-speed Internet access, telephone services, and other sources of home entertainment. Specifically, newer categories of competitors include virtual multichannel video programming distributors such as AT&T TV NOW, Sling TV, YouTube TV and Hulu Live. In the broadband communications industry, Charter's principal competitors for video services are DBS service providers and telephone companies that offer video services. Charter's principal competitors for high-speed Internet services are the broadband services provided by telephone companies, including fiber-to-the-home, fiber-to-the-node, DSL and wireless broadband offerings. A growing number of commercial areas, such as retail malls, restaurants and airports, offer WiFi Internet service. Numerous local governments are also considering or actively pursuing publicly subsidized WiFi Internet access networks. These options offer alternatives to cable-based Internet access. Charter's principal competitors for voice and mobile services are other mobile and wireline phone providers, as well as other forms of communication, such as instant messaging, social networking services, video conferencing and email. The increase in the number of different technologies capable of carrying voice services and the number of alternative communication options available to customers as well as the replacement of wireline services by wireless have intensified the competitive environment in which Charter operates its residential voice service.

Skyhook and Charter must stay abreast of rapidly evolving technological developments and offerings to remain competitive and increase the utility of their products and services. These companies must be able to incorporate new technologies into their products and services in order to address the needs of their customers.

Results of Operations—Consolidated

Consolidated operating results:

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Revenue	\$ 14,859	22,256	13,092
Operating expenses, excluding stock-based compensation			
Operating expense	9,337	7,886	10,557
Selling, general and administrative	22,413	17,898	18,951
Stock-based compensation	10,511	5,707	5,292
Depreciation and amortization	1,875	2,779	3,770
Operating income (loss)	\$ (29,277)	(12,014)	(25,478)
Less impact of stock-based compensation and depreciation and amortization	12,386	8,486	9,062
Adjusted OIBDA	\$ (16,891)	(3,528)	(16,416)

Revenue

Revenue decreased \$7.4 million and increased \$9.2 million for the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The decrease in revenue in 2019 was primarily due to a license agreement in the prior year, partially offset by increased net revenue from existing customers, coupled with new customer growth. The increase in revenue in 2018 was primarily due to a new license agreement. On February 16, 2018, Skyhook entered into a license agreement pursuant to which Skyhook agreed to grant to the licensee a perpetual, non-exclusive, non-transferable, worldwide license to patents and patent applications owned by Skyhook. In exchange for this grant, the licensee agreed to pay a one-time lump sum payment of \$8.5 million that was recognized as revenue during the three months ended March 31, 2018.

Operating expense and selling, general and administrative expenses

Operating and selling, general and administrative expenses, increased collectively by \$6.0 million and decreased by \$3.7 million for December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The increase in operating expenses in 2019 was primarily due to increased personnel, data acquisition and cloud computing costs. The increase in selling, general and administrative expense in 2019 was primarily due to increased professional service fees at the corporate level of \$4.6 million. During the year ended December 31, 2019, this increase was partially offset by decreased costs associated with entering into the license agreement in the prior year at Skyhook. The decrease in 2018 was primarily as a result of decreased expenses resulting from headcount reductions and other cost containment measures taken by Skyhook in late 2017, partially offset by increased legal expenses of \$976 thousand and other costs associated with the license agreement.

Stock-based compensation

Stock-based compensation expense increased \$4.8 million and \$415 thousand for the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The increase in stock-based compensation during 2019 was primarily due to an increase in the number of restricted stock units of Liberty Broadband Series C common stock granted during the first quarter of 2019. The increase in stock-based compensation during 2018 was primarily due to an increase in the fair value of outstanding awards under Skyhook's long-term incentive plans as of December 31, 2018 as compared to December 31, 2017, coupled with additional grants of awards and the ongoing vestings of outstanding grants.

Depreciation and amortization

Depreciation and amortization decreased \$904 thousand and \$991 thousand for the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The decrease in depreciation and amortization expense during 2019 and 2018 was due to certain assets becoming fully depreciated.

Operating Income (Loss)

Operating income (loss) declined \$17.3 million and improved \$13.5 million for the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods, due to the items discussed above.

Adjusted OIBDA

To provide investors with additional information regarding our financial results, we also disclose Adjusted OIBDA, which is a non-GAAP financial measure. We define Adjusted OIBDA as operating income (loss) plus depreciation and amortization, stock-based compensation, separately reported litigation settlements, restructuring, acquisition and other related costs and impairment charges. Our chief operating decision maker and management team use this measure of performance in conjunction with other measures to evaluate our businesses and make decisions about allocating resources among our businesses. We believe this is an important indicator of the operational strength and performance of our businesses by identifying those items that are not directly a reflection of each business' performance or indicative of ongoing business trends. In addition, this measure allows us to view operating results, perform analytical comparisons and benchmarking between businesses and identify strategies to improve performance. Accordingly, Adjusted OIBDA should be considered in addition to, but not as a substitute for, operating income, net income, cash flow provided by operating activities and other measures of financial performance prepared in accordance with U.S. generally accepted accounting principles.

Adjusted OIBDA declined \$13.4 million and improved \$12.9 million in the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. Adjusted OIBDA for the years ended December 31, 2019, 2018 and 2017 included \$12.2 million, \$6.7 million, and \$6.9 million of corporate selling, general and administrative expenses, respectively. The decrease in Adjusted OIBDA for the year ended December 31, 2019 is due to decreased revenue of \$7.4 million, discussed above, coupled with higher operating and selling, general and administrative expenses, discussed above. The increase in Adjusted OIBDA for the year ended December 31, 2018 is due to increased revenue of \$9.2 million, discussed above, coupled with lower operating expenses of \$3.7 million, discussed above.

Other Income and Expense:

Components of Other Income (Expense) are presented in the table below.

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Other income (expense):			
Interest expense	\$ (25,166)	(23,302)	(19,570)
Share of earnings (losses) of affiliate	286,401	166,146	2,508,991
Gain (loss) on dilution of investment in affiliate	(79,329)	(43,575)	(17,872)
Realized and unrealized gains (losses) on financial instruments, net	1,170	3,659	3,098
Other, net	1,359	963	1,431
	<u>\$ 184,435</u>	<u>103,891</u>	<u>2,476,078</u>

Interest expense

Interest expense increased \$1.9 million and \$3.7 million during the years ended December 31, 2019 and 2018, respectively. The increase in 2019 was driven by additional amounts outstanding on the credit agreement governing a multi-draw margin loan agreement credit facility entered into in 2017 by a bankruptcy remote wholly owned subsidiary of Liberty Broadband (as amended, the "Amended 2017 Margin Loan") during 2019, as well as an increase in the weighted average interest rate during 2019 compared to the prior year. The increase in 2018 was attributable to additional amounts outstanding on the Amended 2017

Margin Loan during 2018 as compared to the prior year, as well as an increase in our weighted average interest rate and LIBOR during 2018 as compared to the prior year.

Share of earnings (losses) of affiliates

Share of earnings from affiliates increased \$120.3 million and decreased \$2,342.8 million during the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. Share of earnings (losses) from affiliates is attributable to the Company's ownership interest in Charter. In May 2013, the Company acquired its initial investment in Legacy Charter. Upon acquisition, the Company allocated the excess basis, between the book basis of Legacy Charter and fair value of the shares acquired, and ascribed remaining useful lives of 7 years and 13 years to property and equipment and customer relationships, respectively, and indefinite lives to franchise fees, trademarks and goodwill. Outstanding debt is amortized over the contractual period using the straight-line method. Amortization related to debt and intangible assets with identifiable useful lives is included in the Company's share of earnings (losses) from affiliates line item in the accompanying consolidated statements of operations and aggregated \$124 million, \$119 million, and \$277 million, net of related taxes, for the years ended December 31, 2019, 2018 and 2017, respectively.

The following is a discussion of Charter's stand alone results of operations. In order to provide a better understanding of Charter's operations, we have included a summarized presentation of Charter's results from operations. Charter is a separate publicly traded company and additional information about Charter can be obtained through its website and public filings, which are not incorporated by reference. The amounts included in the table below, derived from Charter's public filings, represent Charter's results for each of the years ended December 31, 2019, 2018 and 2017.

	Years ended December 31,		
	2019	2018	2017
	amounts in millions		
Revenue	\$ 45,764	43,634	41,581
Operating expenses, excluding stock-based compensation	(29,012)	(27,810)	(26,626)
Adjusted OIBDA	16,752	15,824	14,955
Depreciation and amortization	(9,926)	(10,318)	(10,588)
Stock-based compensation	(315)	(285)	(261)
Operating income	6,511	5,221	4,106
Other expenses, net	(4,080)	(3,535)	(3,078)
Net income (loss) before income taxes	2,431	1,686	1,028
Income tax benefit (expense)	(439)	(180)	9,087
Net income (loss)	<u>\$ 1,992</u>	<u>1,506</u>	<u>10,115</u>

Charter's revenue increased \$2.1 billion during both of the years ended December 31, 2019 and 2018, as compared to the corresponding prior years. Revenue growth primarily reflects increases in the number of residential Internet and commercial business customers, price adjustments as well as the launch of Charter's mobile service in the second half of 2018 offset by a decrease in video customers.

The increase in revenue during 2019 and 2018 was partially offset by the net impact of an increase in operating expenses, excluding stock-based compensation, of \$1.2 billion in each of the respective years. Operating costs also increased due to an increase in programming costs as a result of contractual rate adjustments, including renewals and increases in amounts paid for retransmission consents partly offset by lower video customers and pay-per-view during the years ended December 31, 2019 and 2018. Charter expects programming expenses to continue to increase in future periods due to a variety of factors, including annual increases imposed by programmers with additional selling power as a result of media consolidation, increased demands by owners of broadcast stations for payment for retransmission consent or linking carriage of other services to retransmission consent, and additional programming, particularly new services. Charter has been unable to fully pass these increases on to its customers and do not expect to be able to do so in the future without a potential loss of customers.

Operating costs also increased due to incremental mobile costs which were comprised of mobile device costs, and mobile services and operating costs. As Charter continues to launch its mobile service and scale the business, it is expected that these investments will have continued negative impacts on operating costs and Adjusted OIBDA.

Charter's Adjusted OIBDA in 2019 and 2018 increased as a result of the above discussion. Increases in both of these periods primarily were the result of an increase in residential and commercial revenue partially offset by increases in programming costs and other expenses.

Depreciation and amortization expense decreased \$392 million and \$270 million during the years ended December 31, 2019 and 2018, respectively. The decreases in both years were primarily due to a decrease in depreciation and amortization as certain assets acquired from Legacy TWC and Legacy Bright House become fully depreciated offset by an increase in depreciation as a result of more recent capital expenditures.

Other expenses increased \$545 million and \$457 million in the years ended December 31, 2019 and 2018, respectively, compared to the corresponding prior year periods. Net interest expense increased by \$257 million and \$450 million during the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The increase in 2019, as compared to the corresponding prior period, is primarily due to an increase in weighted average debt outstanding of approximately \$3.0 billion primarily as a result of the issuance of notes in 2019 for general corporate purposes including stock buybacks and debt repayments, offset by a decrease in weighted average interest rates. The increase in 2018 as compared to the corresponding prior year period was primarily due to an increase in weighted average debt outstanding of approximately \$6.6 billion primarily as a result of the issuance of notes in 2018 for general corporate purposes including stock buybacks. In addition, other expenses increased in 2019, as compared to the corresponding prior year period, due to other pension costs primarily as a result of a remeasurement loss recorded in 2019 versus a remeasurement gain in 2018.

Income tax expense increased \$259 million and \$9.3 billion during the years ended December 31, 2019 and 2018, respectively, compared to the corresponding prior year periods. The income tax expense in 2019 was primarily the result of higher pretax income and lower benefit from state tax rate changes. The income tax benefit for the year ended December 31, 2017 of \$9.1 billion was primarily due to the impact of the 2017 tax reform, which was enacted on December 22, 2017.

Gain (loss) on dilution of investment in equity affiliate

The loss on dilution of investment in affiliate during 2019 and 2018 is primarily due to the issuance of Charter common stock from the exercise of stock options held by employees and other third parties, as prices below Liberty Broadband's book basis per share. As Liberty Broadband's ownership in Charter changes due to exercises of Charter warrants and stock options, a loss is recorded with the effective sale of common stock, because the exercise price of Charter warrants or stock options is typically lower than the book value of the Charter shares held by Liberty Broadband.

Realized and unrealized gains (losses) on financial instruments, net

Realized and unrealized gains on financial instruments, net decreased \$2.5 million and increased \$0.6 million for each of the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The realized gains during the years ended December 31, 2019, 2018 and 2017 were related to zero-strike call options (see note 4 in the accompanying consolidated financial statements for additional discussion).

Other, net

Other, net increased \$396 thousand and decreased \$468 thousand for the years ended December 31, 2019 and 2018, respectively, as compared to the corresponding prior year periods. The increase in 2019 was primarily due to increases in dividend and interest income as a result of higher interest rates in the current year. The decrease in 2018 was primarily due to decreases in dividend and interest income as a result of lower cash balances during 2018.

Income taxes

Our effective tax rate for the years ended December 31, 2019, 2018 and 2017 was 24%, 24% and 17%, respectively. During 2019, our effective tax rate was higher than the federal tax rate of 21% primarily due to state income taxes. During 2018, our effective tax rate was higher than the federal tax rate of 21% primarily due to state income taxes, partially offset by unrealized gains attributable to the Company's own stock which is not recognized for tax purposes. During 2017, our effective tax rate was lower than the federal tax rate of 35% primarily due to the effect of changes in the U.S. federal corporate tax rate from 35% to 21% on deferred taxes partially offset by the effect of state income taxes.

Net earnings (losses)

We had net earnings of \$117.2 million, \$70.0 million and \$2,033.7 million for the years ended December 31, 2019, 2018 and 2017, respectively. The change in net earnings (losses) was the result of the above-described fluctuations in our revenue, expenses and other gains and losses.

Liquidity and Capital Resources

As of December 31, 2019, substantially all of our cash and cash equivalents are invested in U.S. Treasury securities, other government securities or government guaranteed funds, AAA rated money market funds and other highly rated financial and corporate debt instruments.

The following are potential sources of liquidity: available cash balances, cash generated by the operating activities of our privately-owned subsidiaries (to the extent such cash exceeds the working capital needs of the subsidiaries and is not otherwise restricted), proceeds from asset sales, monetization of our other investments, outstanding debt facilities including \$425 million available to be drawn under our Amended 2017 Margin Loan Agreement until August 19, 2020, debt and equity issuances, and dividend and interest receipts.

As of December 31, 2019, Liberty Broadband had a cash balance of \$49.7 million.

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Cash flow information			
Net cash provided (used) by operating activities	\$ (37,563)	(26,260)	(30,031)
Net cash provided (used) by investing activities	\$ (500)	(41)	(56)
Net cash provided (used) by financing activities	\$ 4,684	28,147	(94,384)

The increase in cash used by operating activities in 2019 was primarily driven by the decrease in operating income, offset slightly by timing differences in working capital accounts.

The decrease in cash used by operating activities in 2018 was primarily driven by the increase in operating income, as well as the timing of differences in cash receipts and payments.

During the year ended December 31, 2019, net cash flows provided by financing activities were primarily from additional borrowing on the Amended 2017 Margin Loan Facility and the settlement of zero-strike call options, partially offset by the purchase of zero-strike call options and payment of withholding taxes on net settlements of stock-based compensation.

During the year ended December 31, 2018, net cash flows from financing activities were primarily related to the settlement of zero-strike call options, as well as the modification to the Amended 2017 Margin Loan Agreement and a drawdown of \$25 million on the Amended 2017 Margin Loan Agreement. During the year ended December 31, 2017, net cash flows from financing activities were primarily related to the net debt repayments of \$103 million and settlement of zero-strike call options.

The projected use of our cash will be primarily to fund any operational needs of our subsidiary, to service debt, to reimburse Liberty for amounts due under various agreements, to fund potential investment opportunities, and refinance Liberty Broadband's margin loan, under its Amended 2017 Margin Loan Agreement, maturing in 2021. We expect corporate cash to cover these expenses for the foreseeable future.

Off-Balance Sheet Arrangements and Aggregate Contractual Obligations

Information about the amount and timing of required payments, both accrued and off-balance sheet, under our contractual obligations, without uncertain tax positions as it is indeterminable when payments will be made, is summarized below.

	Payments due by period				
	Total	Less than 1 year	2 - 3 years	4 - 5 years	After 5 years
amounts in thousands					
<i>Consolidated contractual obligations</i>					
Long-term debt	\$ 575,000	—	575,000	—	—
Interest payments (1)	\$ 36,613	22,236	14,377	—	—
Other	\$ 2,634	1,762	872	—	—
Total	\$ 614,247	23,998	590,249	—	—

(1) Amounts (i) are based on our understanding of debt at December 31, 2019, (ii) assume the interest rates on our variable debt remain constant at the December 31, 2019 rates and (iii) assume that our existing debt is repaid at maturity.

Critical Accounting Estimates and Policies

The preparation of our financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Listed below are the accounting estimates and accounting policies that we believe are critical to our financial statements due to the degree of uncertainty regarding the estimates or assumptions involved and the magnitude of the asset, liability, revenue or expense being reported. All of these accounting estimates and assumptions, as well as the resulting impact to our financial statements, have been discussed with our audit committee.

Application of the Equity Method of Accounting for Investments in Affiliates. For those investments in affiliates in which the Company has the ability to exercise significant influence, the equity method of accounting is used. Under this method, the investment, originally recorded at cost, is adjusted to recognize the Company's share of net earnings or losses of the affiliate as they occur rather than as dividends or other distributions are received. Losses are limited to the extent of the Company's investment in, advances to and commitments for the investee. The Company determines the difference between the purchase price of the investee and the underlying equity which results in an excess basis in the investment. This excess basis is allocated to the underlying assets and liabilities of the Company's investee through a purchase accounting exercise and is allocated within memo accounts used for equity accounting purposes. Depending on the applicable underlying assets, these amounts are either amortized over the applicable useful lives or determined to be indefinite lived.

Changes in the Company's proportionate share of the underlying equity of an equity method investee, which result from the issuance of additional equity securities by such equity investee, to investors other than the Company, are recognized in the statement of operations through the gain (loss) on dilution of investment in affiliate line item. We periodically evaluate our equity method investment to determine if decreases in fair value below our cost basis are other than temporary. If a decline in fair value is determined to be other than temporary, we are required to reflect such decline in our consolidated statement of operations. Other than temporary declines in fair value of our equity method investment would be included in share of earnings (losses) of affiliates in our consolidated statement of operations.

The primary factors we consider in our determination of whether declines in fair value are other than temporary are the length of time that the fair value of the investment is below our carrying value; the severity of the decline; and the financial condition, operating performance and near term prospects of the investee. In addition, we consider the reason for the decline in fair value, be it general market conditions, industry specific or investee specific; analysts' ratings and estimates of 12 month share price targets for the investee; changes in stock price or valuation subsequent to the balance sheet date; and our intent and ability to hold the investment for a period of time sufficient to allow for a recovery in fair value. Fair value of our publicly traded cost and equity investments is based on the market prices of the investments at the balance sheet date. Impairments are calculated as the difference between our carrying value and our estimate of fair value. As our assessment of the fair value of our investments and any resulting impairment losses and the timing of when to recognize such charges requires judgment and includes estimates and assumptions, actual results could differ materially from our estimates and assumptions.

Our evaluation of the fair value of our investments and any resulting impairment charges are made as of the most recent balance sheet date. Changes in fair value subsequent to the balance sheet date due to the factors described above are possible. Subsequent decreases in fair value will be recognized in our consolidated statement of operations in the period in which they occur to the extent such decreases are deemed to be other than temporary. Subsequent increases in fair value will be recognized in our consolidated statement of operations only upon our ultimate disposition of the investment.

Income Taxes. We are required to estimate the amount of tax payable or refundable for the current year and the deferred income tax liabilities and assets for the future tax consequences of events that have been reflected in our financial statements or tax returns for each taxing jurisdiction in which we operate. This process requires our management to make judgments regarding the timing and probability of the ultimate tax impact of the various agreements and transactions that we enter into. Based on these judgments we may record tax reserves or adjustments to valuation allowances on deferred tax assets to reflect the expected realizability of future tax benefits. Actual income taxes could vary from these estimates due to future changes in income tax law, significant changes in the jurisdictions in which we operate, our inability to generate sufficient future taxable income or unpredicted results from the final determination of each year's liability by taxing authorities. These changes could have a significant impact on our financial position.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

We are exposed to market risk in the normal course of business due to our ongoing investing and financial activities. Market risk refers to the risk of loss arising from adverse changes in stock prices and interest rates. The risk of loss can be assessed from the perspective of adverse changes in fair values, cash flows and future earnings. We have established policies, procedures and internal processes governing our management of market risks and the use of financial instruments to manage our exposure to such risks.

We are exposed to changes in interest rates primarily as a result of our borrowing and investment activities, which could include investments in fixed and floating rate debt instruments and borrowings used to maintain liquidity and to fund business operations. The nature and amount of our long-term and short-term debt are expected to vary as a result of future requirements, market conditions and other factors. We manage our exposure to interest rates by maintaining what we believe is an appropriate mix of fixed and variable rate debt. We believe this best protects us from interest rate risk. In the future, we could achieve this mix by (i) issuing fixed rate debt that we believe has a low stated interest rate and significant term to maturity, (ii) issuing variable rate debt with appropriate maturities and interest rates and (iii) entering into interest rate swap arrangements when we deem appropriate. As of December 31, 2019, our debt is comprised of the following amounts:

Variable rate debt		Fixed rate debt	
Principal amount	Weighted avg interest rate	Principal amount	Weighted avg interest rate
dollar amounts in millions			
\$ 575	3.4%	\$ —	NA

Our stock in Charter (our equity method affiliate) is publicly traded and not reflected at fair value in our balance sheet. Our investment in Charter is also subject to market risk that is not directly reflected in our financial statements.

Item 8. Financial Statements and Supplementary Data.

The consolidated financial statements of Liberty Broadband Corporation are filed under this Item, beginning on Page II-18. The financial statement schedules required by Regulation S-X are filed under Item 15 of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

In accordance with Exchange Act Rules 13a-15 and 15d-15, the Company carried out an evaluation, under the supervision and with the participation of management, including its chief executive officer and its principal accounting and financial officer (the "Executives"), of the effectiveness of its disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, the Executives concluded that the Company's disclosure controls and procedures were effective as of December 31, 2019 to provide reasonable assurance that information required to be disclosed in its reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms.

See page II-14 for *Management's Report on Internal Control Over Financial Reporting*.

See page II-15 for *Report of Independent Registered Public Accounting Firm* for their attestation regarding our internal control over financial reporting.

There has been no change in the Company's internal control over financial reporting that occurred during the three months ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, its internal control over financial reporting.

Item 9B. Other Information.

None.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Liberty Broadband Corporation's (the "Company") management is responsible for establishing and maintaining adequate internal control over the Company's financial reporting, as such term is defined in Rule 13a-15(f) of the Securities Exchange Act of 1934, as amended. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies and procedures may deteriorate.

The Company's management assessed the effectiveness of internal control over financial reporting as of December 31, 2019, using the criteria in *Internal Control-Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation the Company's management believes that, as of December 31, 2019, its internal control over financial reporting is effective.

The Company's independent registered public accounting firm that audited the consolidated financial statements and related disclosures in the Annual Report on Form 10-K has issued an audit report on the effectiveness of the Company's internal control over financial reporting. This report appears on page II-15 of this Annual Report on Form 10-K.

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Liberty Broadband Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Liberty Broadband Corporation and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive earnings (loss), cash flows and equity for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and our report dated February 3, 2020 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Denver, Colorado
February 3, 2020

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Liberty Broadband Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Liberty Broadband Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive earnings (loss), cash flows and equity for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 3, 2020 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 5 to the consolidated financial statements, the Company's equity method investee, Charter Communications, Inc. (Charter), has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standard Codification Topic 842, Leases.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgment. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Evaluation of Equity Method Accounting for the Company's Investment in Charter

As discussed in Notes 3 and 5 to the consolidated financial statements, the Company has recorded an Investment in Charter of \$12.2 billion as of December 31, 2019, accounted for using the equity method. The investment represents 99% of the total assets of the Company as of December 31, 2019. The investment, originally recorded at cost, is adjusted to recognize the Company's share of net earnings or losses as they occur. The Company's investment in Charter differs from the underlying equity

of Charter which results in excess basis in the investment. This excess basis is allocated to the underlying assets and liabilities of the Company's investee within memo accounts used for equity accounting.

We identified the evaluation of the equity method of accounting for the Company's investment in Charter as a critical audit matter. Evaluating the Company's application of the equity method of accounting for the Company's investment in Charter required a higher degree of auditor judgment given the nature and extent of audit effort required to address the matter, including the involvement of valuation professionals with specialized skills and knowledge.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's application of its equity method accounting, including the related share of earnings calculation, allocation of excess basis to the memo accounts, and the associated amortization. We performed risk assessment procedures, including sensitivity analyses, and applied auditor judgment to determine the nature and extent of procedures to be performed over the investment. We recalculated (1) the Company's share of earnings of Charter, (2) the allocation of excess basis to the memo accounts, and (3) the related excess basis amortization. We involved valuation professionals with specialized skills and knowledge, who assisted in assessing the allocation of the excess basis, including (1) assessing the valuation methodology used by the Company to estimate the fair value of Charter's assets and liabilities by comparison to generally accepted valuation methodologies, (2) assessing the identification of marketplace transactions used in the model by considering the comparability to Charter, and (3) assessing the allocation of excess basis to the underlying assets and liabilities of Charter by considering comparability to other market transactions.

/s/ KPMG LLP

We have served as the Company's auditor since 2014

Denver, Colorado
February 3, 2020

LIBERTY BROADBAND CORPORATION

Consolidated Balance Sheets

December 31, 2019 and 2018

	<u>2019</u>	<u>2018</u>
	<u>amounts in thousands</u>	
<i>Assets</i>		
Current assets:		
Cash and cash equivalents	\$ 49,724	83,103
Other current assets	2,409	1,471
Total current assets	<u>52,133</u>	<u>84,574</u>
Investment in Charter, accounted for using the equity method (note 5)	12,194,674	12,004,376
Other assets	9,535	9,487
Total assets	<u>\$ 12,256,342</u>	<u>12,098,437</u>
<i>Liabilities and Equity</i>		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 6,168	3,504
Deferred revenue and other current liabilities	5,971	4,691
Total current liabilities	<u>12,139</u>	<u>8,195</u>
Debt (note 6)	572,944	522,928
Deferred income tax liabilities (note 7)	999,757	965,829
Other liabilities	3,556	2,867
Total liabilities	<u>1,588,396</u>	<u>1,499,819</u>
<i>Equity</i>		
Preferred stock, \$.01 par value. Authorized 50,000,000 shares; no shares issued	—	—
Series A common stock, \$.01 par value. Authorized 500,000,000 shares; issued and outstanding 26,493,197 and 26,311,681 at December 31, 2019 and 2018, respectively	265	263
Series B common stock, \$.01 par value. Authorized 18,750,000 shares; issued and outstanding 2,451,920 and 2,454,520 at December 31, 2019 and 2018, respectively	25	25
Series C common stock, \$.01 par value. Authorized 500,000,000 shares; issued and outstanding 152,956,316 and 152,591,939 at December 31, 2019 and 2018, respectively	1,529	1,526
Additional paid-in capital	7,890,084	7,938,357
Accumulated other comprehensive earnings, net of taxes	8,158	7,778
Retained earnings (accumulated deficit)	<u>2,767,885</u>	<u>2,650,669</u>
Total equity	10,667,946	10,598,618
Commitments and contingencies (note 11)		
Total liabilities and equity	<u>\$ 12,256,342</u>	<u>12,098,437</u>

See accompanying notes to consolidated financial statements.

LIBERTY BROADBAND CORPORATION
Consolidated Statements of Operations
Years Ended December 31, 2019, 2018 and 2017

	2019	2018	2017
	amounts in thousands, except per share amounts		
Revenue:			
Software sales	\$ 14,859	22,256	12,320
Service	—	—	772
Total revenue	14,859	22,256	13,092
Operating costs and expenses			
Operating, including stock-based compensation (note 9)	9,450	7,994	10,735
Selling, general and administrative, including stock-based compensation (note 9)	32,811	23,497	24,065
Depreciation and amortization	1,875	2,779	3,770
	44,136	34,270	38,570
Operating income (loss)	(29,277)	(12,014)	(25,478)
Other income (expense):			
Interest expense	(25,166)	(23,302)	(19,570)
Share of earnings (losses) of affiliate (note 5)	286,401	166,146	2,508,991
Gain (loss) on dilution of investment in affiliate (note 5)	(79,329)	(43,575)	(17,872)
Realized and unrealized gains (losses) on financial instruments, net (note 4)	1,170	3,659	3,098
Other, net	1,359	963	1,431
Earnings (loss) before income taxes	155,158	91,877	2,450,600
Income tax benefit (expense)	(37,942)	(21,924)	(416,933)
Net earnings (loss) attributable to Liberty Broadband shareholders	\$ 117,216	69,953	2,033,667
Basic earnings (loss) attributable to Series A, Series B and Series C Liberty Broadband shareholders per common share (note 3)	\$ 0.65	0.39	11.19
Diluted net earnings (loss) attributable to Series A, Series B and Series C Liberty Broadband shareholders per common share (note 3)	\$ 0.64	0.38	11.10

See accompanying notes to consolidated financial statements.

LIBERTY BROADBAND CORPORATION
Consolidated Statements of Comprehensive Earnings (Loss)
Years ended December 31, 2019, 2018 and 2017

	<u>2019</u>	<u>2018</u>	<u>2017</u>
	amounts in thousands		
Net earnings (loss)	\$ 117,216	69,953	2,033,667
Other comprehensive earnings (loss), net of taxes:			
Share of other comprehensive earnings (loss) of equity affiliate and other	380	(172)	768
Other	<u>—</u>	<u>(474)</u>	<u>—</u>
Other comprehensive earnings (loss), net of taxes	380	(646)	768
Comprehensive earnings (loss) attributable to Liberty Broadband shareholders	<u>\$ 117,596</u>	<u>69,307</u>	<u>2,034,435</u>

See accompanying notes to consolidated financial statements.

LIBERTY BROADBAND CORPORATION

Consolidated Statements of Cash Flows

Years ended December 31, 2019, 2018 and 2017

	2019	2018	2017
	amounts in thousands		
Cash flows from operating activities:			
Net earnings (loss)	\$ 117,216	69,953	2,033,667
Adjustments to reconcile net earnings (loss) to net cash provided by operating activities:			
Depreciation and amortization	1,875	2,779	3,770
Stock-based compensation	10,511	5,707	5,292
Cash payments for stock-based compensation	(209)	(342)	(525)
Share of (earnings) losses of affiliate, net	(286,401)	(166,146)	(2,508,991)
(Gain) loss on dilution of investment in affiliate	79,329	43,575	17,872
Realized and unrealized (gains) losses on financial instruments, net	(1,170)	(3,659)	(3,098)
Deferred income tax expense (benefit)	37,940	21,569	416,838
Other, net	1,680	1,838	2,030
Changes in operating assets and liabilities:			
Current and other assets	(820)	1,476	2,310
Payables and other liabilities	2,486	(3,010)	804
Net cash provided by operating activities	<u>(37,563)</u>	<u>(26,260)</u>	<u>(30,031)</u>
Cash flows from investing activities:			
Capital expended for property and equipment	(500)	(41)	(70)
Other investing activities, net	—	—	14
Net cash used in investing activities	<u>(500)</u>	<u>(41)</u>	<u>(56)</u>
Cash flows from financing activities:			
Borrowings of debt	50,000	158,000	500,000
Repayments of debt	—	(133,000)	(600,000)
Proceeds (payments) from issuances of financial instruments	(46,330)	(142,824)	(149,368)
Proceeds (payments) from settlements of financial instruments	47,500	146,483	155,683
Payment to former parent under tax sharing agreement related to net settlement of Awards	(49,718)	—	—
Other financing activities, net	3,232	(512)	(699)
Net cash provided by (used in) financing activities	<u>4,684</u>	<u>28,147</u>	<u>(94,384)</u>
Net increase (decrease) in cash, cash equivalents and restricted cash	(33,379)	1,846	(124,471)
Cash, cash equivalents and restricted cash, beginning of period	83,103	81,257	205,728
Cash, cash equivalents and restricted cash, end of period	<u>\$ 49,724</u>	<u>83,103</u>	<u>81,257</u>

Supplemental disclosure to the consolidated statements of cash flows:

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Cash paid for interest	\$ 23,908	21,948	17,496
Cash paid (received) for taxes	\$ 5	(730)	(1,787)

See accompanying notes to consolidated financial statements.

LIBERTY BROADBAND CORPORATION

Consolidated Statements of Equity

Years ended December 31, 2019, 2018 and 2017

	Preferred Stock	Common stock			Additional paid-in capital	Accumulated other comprehensive earnings	Retained earnings (accumulated deficit)	Total equity
		Series A	Series B	Series C				
amounts in thousands								
Balance at December 31, 2016	\$ —	262	25	1,530	7,945,883	7,656	517,736	8,473,092
Net earnings (loss)	—	—	—	—	—	—	2,033,667	2,033,667
Other comprehensive earnings (loss)	—	—	—	—	—	768	—	768
Stock-based compensation	—	—	—	—	5,358	—	—	5,358
Issuance of common stock upon exercise of stock options	—	—	—	1	2,456	—	—	2,457
Cumulative effect of accounting change at Charter	—	—	—	—	—	—	17,361	17,361
Non-cash settlement of financial instrument	—	—	—	(5)	(45,797)	—	—	(45,802)
Balance at December 31, 2017	—	262	25	1,526	7,907,900	8,424	2,568,764	10,486,901
Net earnings (loss)	—	—	—	—	—	—	69,953	69,953
Other comprehensive earnings (loss)	—	—	—	—	—	(646)	—	(646)
Stock-based compensation	—	—	—	—	5,402	—	—	5,402
Issuance of common stock upon exercise of stock options	—	1	—	—	737	—	—	738
Cumulative effect of accounting change (note 3)	—	—	—	—	—	—	1,223	1,223
Cumulative effect of accounting change at Charter	—	—	—	—	—	—	10,729	10,729
Noncontrolling interest activity at Charter	—	—	—	—	24,318	—	—	24,318
Balance at December 31, 2018	—	263	25	1,526	7,938,357	7,778	2,650,669	10,598,618
Net earnings (loss)	—	—	—	—	—	—	117,216	117,216
Other comprehensive earnings (loss)	—	—	—	—	—	380	—	380
Stock-based compensation	—	—	—	—	10,216	—	—	10,216
Issuance of common stock upon exercise of stock options	—	—	—	1	4,481	—	—	4,482
Payment to former parent under tax sharing agreement related to net settlement of Awards	—	—	—	—	(49,921)	—	—	(49,921)
Noncontrolling interest activity at Charter and other	—	2	—	2	(13,049)	—	—	(13,045)
Balance at December 31, 2019	\$ —	265	25	1,529	7,890,084	8,158	2,767,885	10,667,946

See accompanying notes to consolidated financial statements.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements

December 31, 2019, 2018 and 2017

(1) Basis of Presentation

During May 2014, the board of directors of Liberty Media Corporation and its subsidiaries (“Liberty”) authorized management to pursue a plan to spin-off to its stockholders common stock of a wholly-owned subsidiary, Liberty Broadband Corporation (“Liberty Broadband” or the “Company”), and to distribute subscription rights to acquire shares of Liberty Broadband’s common stock (the “Broadband Spin-Off”). At the time of the Broadband Spin-off, Liberty Broadband was comprised of (i) Liberty’s former interest in Charter Communications, Inc. (“Legacy Charter”), (ii) Liberty’s former wholly-owned subsidiary TruePosition, Inc. (“TruePosition”), (iii) Liberty’s former minority equity investment in Time Warner Cable, Inc. (“Time Warner Cable”), (iv) certain deferred tax liabilities, as well as liabilities related to the Time Warner Cable written call options and (v) initial indebtedness, pursuant to margin loans entered into prior to the completion of the Broadband Spin-Off. These financial statements refer to Liberty Broadband Corporation as “Liberty Broadband,” “the Company,” “us,” “we” and “our” in the notes to the consolidated financial statements. The Broadband Spin-Off was accounted for at historical cost due to the pro rata nature of the distribution to holders of Liberty common stock.

In the Broadband Spin-Off, record holders of Liberty Series A, Series B and Series C common stock received one-fourth of a share of the corresponding series of Liberty Broadband common stock for each share of Liberty common stock held by them, with cash paid in lieu of fractional shares. In addition, following the completion of the Broadband Spin-Off, on December 10, 2014, Liberty Broadband stockholders received a subscription right to acquire one share of Series C Liberty Broadband common stock for every five shares of Liberty Broadband common stock. See note 8 for additional information related to the rights offering.

Following the Broadband Spin-Off, Liberty and Liberty Broadband operate as separate, publicly traded companies, and neither has any stock ownership, beneficial or otherwise, in the other. In connection with the Broadband Spin-Off, Liberty (for accounting purposes a related party of the Company) and Liberty Broadband entered into certain agreements in order to govern certain of the ongoing relationships between the two companies after the Broadband Spin-Off and to provide for an orderly transition. These agreements include a reorganization agreement, a services agreement, a facilities sharing agreement and a tax sharing agreement.

The reorganization agreement provides for, among other things, the principal corporate transactions (including the internal restructuring) required to effect the Broadband Spin-Off, certain conditions to the Broadband Spin-Off and provisions governing the relationship between Liberty Broadband and Liberty with respect to and resulting from the Broadband Spin-Off. The tax sharing agreement provides for the allocation and indemnification of tax liabilities and benefits between Liberty and Liberty Broadband and other agreements related to tax matters. Pursuant to the services agreement, Liberty provides Liberty Broadband with general and administrative services including legal, tax, accounting, treasury and investor relations support. See below for a description of an amendment to the services agreement in December 2019. Under the facilities sharing agreement, Liberty Broadband shares office space with Liberty and related amenities at Liberty’s corporate headquarters. Liberty Broadband will reimburse Liberty for direct, out-of-pocket expenses incurred by Liberty in providing these services which will be negotiated semi-annually. Under these various agreements, amounts reimbursable to Liberty were approximately \$54.2 million and \$3.5 million for the years ended December 31, 2019 and 2018, respectively.

In December 2019, the Company entered into an amendment to the services agreement with Liberty in connection with Liberty’s entry into a new employment arrangement with Gregory B. Maffei, the Company’s President and Chief Executive Officer. Under the amended services agreement, components of his compensation will either be paid directly to him by each of the Company, Liberty TripAdvisor Holdings, Inc., GCI Liberty, Inc., and Qurate Retail, Inc. (collectively, the “Service Companies”) or reimbursed to Liberty, in each case, based on allocations among Liberty and the Service Companies set forth in the amended services agreement, currently set at 18% for the Company. The new agreement provides for a five year employment term which began on January 1, 2020 and ends December 31, 2024, with an aggregate annual base salary of \$ million (with no contracted increase), an aggregate one-time cash commitment bonus of \$5 million, an aggregate annual target cash performance bonus of \$17 million, aggregate annual equity awards of \$17.5 million and aggregate equity awards granted in connection with

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

his entry into his new agreement of \$90 million (the “upfront awards”). A portion of the grants made to our CEO in the year ended December 31, 2019 related to our company’s allocable portion of these upfront awards.

On May 18, 2016, Time Warner Cable merged with Charter (the “Time Warner Cable Merger”). In connection with the Time Warner Cable Merger, Legacy Charter underwent a corporate reorganization, resulting in CCH I, LLC (“Charter”), a former subsidiary of Charter, becoming the new publicly traded parent company. Also on May 18, 2016, the previously announced acquisition of Bright House Networks, LLC (“Bright House”) from Advance/Newhouse Partnership (“A/N”) by Charter (the “Bright House Transaction”) was completed. In connection with the Time Warner Cable Merger and Bright House Transaction, Liberty Broadband entered into certain agreements with Legacy Charter, Charter (for accounting purposes a related party of the Company), Liberty Interactive Corporation (“Liberty Interactive” (now known as Qurate Retail, Inc.), for accounting purposes a related party of the Company) and Time Warner Cable. As a result of the Time Warner Cable Merger and Bright House Transaction (collectively, the “Transactions”), Liberty Broadband exchanged its shares of Time Warner Cable for shares of Charter and purchased additional shares of Charter. As a result, and pursuant to proxy agreements with GCI Liberty, Inc. (the “GCI Liberty Agreement”) and A/N (the “A/N Proxy”), Liberty Broadband controls 25.01% of the aggregate voting power of Charter. See note 5 for additional detail regarding these transactions and corresponding agreements.

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States (“GAAP”) and represent the historical consolidated financial information of Skyhook, the Company’s interest in Charter, the Company’s former minority equity investment in Time Warner Cable and certain deferred tax liabilities. All significant intercompany accounts and transactions have been eliminated in the consolidated financial statements.

(2) Description of Business

Skyhook Holding, Inc. (formerly known as TruePosition) was originally incorporated on November 24, 1992 to provide technology for locating wireless phones and other mobile devices. TruePosition offered a passive network-based location system based on its patented U-TDOA technology (“U-TDOA Service”) to provide E-9-1-1 services domestically and to enhance services in support of commercial applications and national security law enforcement worldwide. In February 2014, TruePosition acquired 100% of the outstanding common shares of Skyhook Wireless, Inc., for approximately \$57.5 million in cash. Skyhook Wireless, Inc. was an alternative location services provider that offered a positioning system that used device-based measurements, as opposed to TruePosition’s network-based technology.

In May 2016, TruePosition and Skyhook Wireless, Inc. combined operations in order to focus on the development and sale of Skyhook’s device-based location technology, and TruePosition subsequently changed its name to Skyhook Holding, Inc. Skyhook Holding, Inc. and Skyhook Wireless, Inc. are referred to collectively herein as “Skyhook.”

Today, Skyhook markets and sells two primary products: (1) a location determination service called the Precision Location Solution; and (2) a location intelligence and data insights service called Geospatial Insights.

Skyhook’s Precision Location Solution works by collecting nearby radio signals (such as information from WiFi access points, cell towers, IP addresses and other radio beacons) that are observed by a mobile device. Skyhook’s Geospatial Insights product uses location data to analyze foot traffic patterns and better understand the real-world behavior of consumers. Skyhook’s revenue is derived from the sale and integration of its Precision Location Solution (including the licensing of software and data components that make up that solution) and the licensing of Geospatial Insights data. In addition, Skyhook earns revenue through entering into licensing agreements with companies to utilize its underlying intellectual property (including patents).

Charter is the second largest cable operator in the United States and a leading broadband communications services company providing video, Internet and voice services to approximately 29.2 million residential and small and medium business customers at December 31, 2019. Charter offers mobile services to residential customers and recently launched mobile service to small and medium business customers. In addition, Charter sells video and online advertising inventory to local, regional and

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

national advertising customers and tailored communications and managed solutions to larger enterprise customers. Charter also owns and operates regional sports networks and local sports, news and community channels.

(3) Summary of Significant Accounting Policies

Cash and Cash Equivalents

Cash consists of cash deposits held in global financial institutions. Cash equivalents consist of highly liquid investments with original maturities of three months or less at the time of acquisition. Cash that has restrictions upon its usage has been excluded from cash and cash equivalents.

Derivative Instruments and Hedging Activities

All of the Company's derivatives, whether designated in hedging relationships or not, are recorded on the balance sheet at fair value. None of the Company's derivatives are currently designated as hedges, as a result, changes in the fair value of the derivative are recognized in earnings.

The fair value of certain of the Company's derivative instruments are estimated using the Black Scholes Merton option-pricing model ("Black-Scholes model"). The Black-Scholes model incorporates a number of variables in determining such fair values, including expected volatility of the underlying security and an appropriate discount rate. The Company obtained volatility rates from pricing services based on the expected volatility of the underlying security over the remaining term of the derivative instrument. A discount rate was obtained at the inception of the derivative instrument and updated each reporting period, based on the Company's estimate of the discount rate at which it could currently settle the derivative instrument. The Company considered its own credit risk as well as the credit risk of its counterparties in estimating the discount rate. Management judgment was required in estimating the Black-Scholes variables. The Company had no outstanding derivative instruments at December 31, 2019 or December 31, 2018.

Investment in Equity Method Affiliate

For those investments in affiliates in which the Company has the ability to exercise significant influence, the equity method of accounting is used. Under this method, the investment, originally recorded at cost, is adjusted to recognize the Company's share of net earnings or losses of the affiliate as they occur rather than as dividends or other distributions are received. Losses are limited to the extent of the Company's investment in, advances to and commitments for the investee. The Company determines the difference between the purchase price of the investee and the underlying equity which results in an excess basis in the investment. This excess basis is allocated to the underlying assets and liabilities of the Company's investee through a purchase accounting exercise and is allocated within memo accounts used for equity accounting purposes.

Depending on the applicable underlying assets, these amounts are either amortized over the applicable useful lives or determined to be indefinite lived. Changes in the Company's proportionate share of the underlying equity of an equity method investee, which result from the issuance of additional equity securities by such equity investee, are recognized in the statement of operations through the gain (loss) on dilution of investment in affiliate line item. We periodically evaluate our equity method investment to determine if decreases in fair value below our cost basis are other than temporary. If a decline in fair value is determined to be other than temporary, we are required to reflect such decline in our consolidated statement of operations. Other than temporary declines in fair value of our equity method investment would be included in share of earnings (losses) of affiliate in our consolidated statement of operations.

The primary factors we consider in our determination of whether declines in fair value are other than temporary are the length of time that the fair value of the investment is below our carrying value; the severity of the decline; and the financial condition, operating performance and near term prospects of the investee. In addition, we consider the reason for the decline in fair value, be it general market conditions, industry specific or investee specific; analysts' ratings and estimates of 12 month share price targets for the investee; changes in stock price or valuation subsequent to the balance sheet date; and our intent and ability to hold the investment for a period of time sufficient to allow for a recovery in fair value. Fair value of our publicly traded cost

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

and equity investments is based on the market prices of the investments at the balance sheet date. Impairments are calculated as the difference between our carrying value and our estimate of fair value. As our assessment of the fair value of our investments and any resulting impairment losses and the timing of when to recognize such charges requires judgment and includes estimates and assumptions, actual results could differ materially from our estimates and assumptions.

As Liberty Broadband does not control the decision making process or business management practices of our affiliate accounted for using the equity method, Liberty Broadband relies on management of its affiliate to provide it with accurate financial information prepared in accordance with GAAP that the Company uses in the application of the equity method. In addition, Liberty Broadband relies on the audit reports that are provided by the affiliate's independent auditors on the financial statements of such affiliate. The Company is not aware, however, of any errors in or possible misstatements of the financial information provided by its equity affiliate that would have a material effect on Liberty Broadband's consolidated financial statements. See note 5 for additional discussion regarding our investment in Charter and the Transactions that occurred during the second quarter of 2016.

Foreign Currency Translation and Transaction Gains and Losses

The functional currency of the Company is the United States ("U.S.") dollar. Transactions denominated in currencies other than the functional currency are recorded based on exchange rates at the time such transactions arise. Subsequent changes in exchange rates result in transaction gains and losses which are reflected in the accompanying consolidated statements of operations and comprehensive earnings (loss) as unrealized (based on the applicable period end exchange rate) or realized upon settlement of the transactions.

Revenue Recognition

As of January 1, 2018, the Company adopted the Accounting Standards Updates ("ASU") amending revenue recognition guidance using the modified retrospective method for all contracts reflecting the aggregate effect of modifications prior to the date of adoption. Results for reporting periods beginning after January 1, 2018 are presented under the new guidance, while prior period amounts were not adjusted and continue to be reported under the accounting standards in effect for those periods.

Upon adoption, we recognized a net cumulative effect of applying the new revenue guidance as a net increase to the opening balance of retained earnings of \$1.2 million, as well as an increase to other current assets of \$0.3 million, an increase to deferred income tax liabilities of \$0.4 million and a decrease to deferred revenue and other current liabilities of \$1.3 million, primarily due to changes in the timing of revenue recognition. The impact of the new accounting guidance to our consolidated statement of operations was not meaningful for the years ended December 31, 2019 and 2018, and we do not expect it to be meaningful going forward.

Skyhook earns revenue from the sale and integration of its Precision Location Solution (including the licensing of software and data components that make up that solution) and the licensing of Geospatial Insights data. In addition, Skyhook earns revenue through entering into licensing agreements with companies to utilize its underlying intellectual property.

Revenue is recognized upon transfer of control of promised products or services to its customers in an amount that reflects the consideration expected to be received in exchange for those products and services.

Skyhook sells its Precision Location Solution and Geospatial Insights data via fixed fee, usage basis or revenue share licensing arrangements. Revenue for fixed fee arrangements is recognized on a straight-line basis over the performance period. Revenue for usage based contracts or revenue share arrangements is recognized upon transfer of the service to its customers. Contracts with customers often include multiple products and services, which in general are not distinct within the context of the contract. Transaction prices of individual products and services are not allocated to specific performance obligations and are recognized ratably.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Skyhook recognizes fees received from intellectual property licensing at the inception of a license term for perpetual licenses when there are no ongoing performance obligations. Revenue recognition is deferred when there are ongoing performance obligations. In such circumstances, revenue would be allocated to the performance obligation and recognized upon the transfer of control of the promised product or service.

Deferred Revenue. At January 1, 2019, deferred revenue liabilities consisted of \$4.3 million and \$1.9 million, included in deferred revenue and other current liabilities and other liabilities, respectively. Of this \$6.2 million that was recorded as deferred revenue, \$4.3 million was recognized as revenue during the year ended December 31, 2019. At December 31, 2019, the related balance consisted of \$4.8 million and \$1.8 million, included in deferred revenue and other current liabilities, and other liabilities, respectively. Of this \$6.6 million that was recorded as deferred revenue, we expect to recognize approximately 97% over the next three years.

At January 1, 2018, deferred revenue liabilities consisted of \$4.5 million and \$2.3 million, included in deferred revenue and other current liabilities, and other liabilities, respectively. Of this \$6.8 million that was recorded as deferred revenue, \$4.2 million was recognized as revenue during the year ended December 31, 2018. At December 31, 2018, the related balance consisted of \$4.3 million and \$1.9 million, included in deferred revenue and other current liabilities, and other liabilities, respectively.

Accounting Policies Elected. The Company elected to exclude all taxes assessed by a governmental authority from the measurement of the transaction price.

Practical Expedients Utilized. The Company has elected to apply the new revenue guidance only to those contracts that were not completed contracts as of December 31, 2017 and considered contract modifications that occurred prior to January 1, 2018 as combined with the original contract. Subsequent to January 1, 2018, the Company considers each modification separately in accordance with the new guidance.

Significant Judgments. The Company estimates variable consideration at the most likely amount to which we expect to be entitled. The estimate of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance and all historical, current and forecast information that is reasonably available to us.

Stock-Based Compensation

As more fully described in note 9, Liberty Broadband has granted to its directors, employees and employees of certain of its subsidiaries, restricted stock and stock options to purchase shares of Liberty Broadband common stock (collectively, "Awards"). Liberty Broadband measures the cost of employee services received in exchange for an equity classified Award (such as stock options and restricted stock) based on the grant-date fair value of the Award, and recognizes that cost over the period during which the employee is required to provide service (usually the vesting period of the Award). Liberty Broadband measures the cost of employee services received in exchange for a liability classified Award based on the current fair value of the Award, and remeasures the fair value of the Award at each reporting date. Certain outstanding awards of Liberty were assumed by Liberty Broadband at the time of the Broadband Spin-Off.

Additionally, Skyhook sponsors long-term incentive plans ("LTIPs") which provide for the granting of phantom stock units ("PSUs"), and phantom stock appreciation rights ("PARs") to employees, directors, and consultants of Skyhook. Skyhook measures the cost of employee services received in exchange for awards of equity instruments based on the grant-date fair value of the award and recognizes that cost ratably over the period during which the employee is required to provide service (usually the vesting period of the award). Skyhook measures the cost of employee services received in exchange for awards of liability instruments (such as PSUs and PARs that will be settled in cash) based on the current fair value of the award, and remeasures the fair value of the award at each reporting date. The consolidated statements of operations includes stock-based compensation related to Skyhook awards.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Income Taxes

The Company accounts for income taxes using the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying value amounts and income tax bases of assets and liabilities and the expected benefits of utilizing net operating loss and tax credit carryforwards. The deferred tax assets and liabilities are calculated using enacted tax rates in effect for each taxing jurisdiction in which the Company operates for the year in which those temporary differences are expected to be recovered or settled. Net deferred tax assets are then reduced by a valuation allowance if the Company believes it more likely than not that such net deferred tax assets will not be realized. We consider all relevant factors when assessing the likelihood of future realization of our deferred tax assets, including our recent earnings experience by jurisdiction, expectations of future taxable income, and the carryforward periods available to us for tax reporting purposes, as well as assessing available tax planning strategies. The effect on deferred tax assets and liabilities of an enacted change in tax rates is recognized in income in the period that includes the enactment date. Due to inherent complexities arising from the nature of our businesses, future changes in income tax law, tax sharing agreements or variances between our actual and anticipated operating results, we make certain judgments and estimates. Therefore, actual income taxes could materially vary from these estimates.

When the tax law requires interest to be paid on an underpayment of income taxes, the Company recognizes interest expense from the first period the interest would begin accruing according to the relevant tax law. Such interest expense is included in interest expense in the accompanying consolidated statements of operations. Any accrual of penalties related to underpayment of income taxes on uncertain tax positions is included in other income (expense) in the accompanying consolidated statements of operations.

We recognize in our consolidated financial statements the impact of a tax position, if that position is more likely than not to be sustained upon an examination, based on the technical merits of the position.

Certain Risks and Concentrations

The Skyhook business is subject to certain risks and concentrations including dependence on relationships with its customers. The Company's largest customers, that accounted for greater than 10% of revenue, aggregated 58% of total revenue for the year ended December 31, 2019, 66% of total revenue for the year ended December 31, 2018 and 57% for the year ended December 31, 2017.

Contingent Liabilities

Periodically, we review the status of all significant outstanding matters to assess any potential financial exposure. When (i) it is probable that an asset has been impaired or a liability has been incurred and (ii) the amount of the loss can be reasonably estimated, we record the estimated loss in our consolidated statements of operations. We provide disclosure in the notes to the consolidated financial statements for loss contingencies that do not meet both these conditions if there is a reasonable possibility that a loss may have been incurred that would be material to the financial statements. Significant judgment is required to determine the probability that a liability has been incurred and whether such liability is reasonably estimable. We base accruals made on the best information available at the time which can be highly subjective. The final outcome of these matters could vary significantly from the amounts included in the accompanying consolidated financial statements.

Comprehensive Earnings (Loss)

Comprehensive earnings (loss) consists of net earnings (loss), cumulative foreign currency translation adjustments, unrealized gains and losses on available-for-sale securities, net of tax and the Company's share of the comprehensive earnings (loss) of our equity method affiliate.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Earnings per Share (EPS)

Basic earnings (loss) per common share (“EPS”) is computed by dividing net earnings (loss) by the weighted average number of common shares outstanding for the period. Diluted EPS presents the dilutive effect on a per share basis of potential common shares as if they had been converted at the beginning of the periods presented.

	Years ended December 31,		
	2019	2018	2017
	number of shares in thousands		
Basic WASO	181,531	181,325	181,772
Potentially dilutive shares	1,253	1,264	1,374
Diluted WASO	<u>182,784</u>	<u>182,589</u>	<u>183,146</u>

Potential common shares excluded from diluted EPS because their inclusion would be antidilutive for the years ended December 31, 2019, 2018 and 2017 are approximately 309 thousand, 10 thousand and zero, respectively.

Reclasses and adjustments

Certain prior period amounts have been reclassified for comparability with the current year presentation.

Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates. The Company considers the application of the equity method of accounting for its affiliates and accounting for income taxes to be its most significant estimates.

(4) Assets and Liabilities Measured at Fair Value

For assets and liabilities required to be reported at fair value, GAAP provides a hierarchy that prioritizes inputs to valuation techniques used to measure fair value into three broad levels. Level 1 inputs are quoted market prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 2 inputs are inputs, other than quoted market prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability. The Company does not have any recurring assets or liabilities measured at fair value that would be considered Level 3.

The Company’s assets and liabilities measured at fair value are as follows:

Description	December 31, 2019			December 31, 2018		
	Total	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Total	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)
	amounts in thousands					
Cash equivalents	\$ 48,174	48,174	—	67,329	67,329	—

LIBERTY BROADBAND CORPORATION**Notes to Consolidated Financial Statements (Continued)****December 31, 2019, 2018 and 2017***Other Financial Instruments*

Other financial instruments not measured at fair value on a recurring basis include trade receivables, trade payables, accrued and other current liabilities, current portion of debt and long-term debt. With the exception of long-term debt, the carrying amount approximates fair value due to the short maturity of these instruments as reported on our consolidated balance sheets. The carrying value of our long-term debt bears interest at a variable rate and therefore is also considered to approximate fair value.

Realized and Unrealized Gains (Losses) on Financial Instruments

Realized and unrealized gains (losses) on financial instruments are comprised of changes in the fair value of the following:

	Years ended December 31,		
	2019	2018	2017
	(amounts in thousands)		
Derivative instruments (1)	1,170	3,659	3,098
	<u>\$ 1,170</u>	<u>3,659</u>	<u>3,098</u>

(1) See note 8 for a summary of the Company's zero-strike call option activity.

(5) Investment in Charter Accounted for Using the Equity Method

Through a number of prior years' transactions, Liberty Broadband has acquired an interest in Charter. The investment in Charter is accounted for as an equity method affiliate based on our voting and ownership interest and the board seats held by individuals appointed by Liberty Broadband. As of December 31, 2019, the carrying value of Liberty Broadband's ownership in Charter was approximately \$12,195 million. The market value of Liberty Broadband's ownership in Charter as of December 31, 2019 was approximately \$26,229 million, which represented an approximate economic ownership of 26% of the outstanding equity of Charter as of that date.

Pursuant to the proxy agreements with GCI Liberty, Inc. and A/N, Liberty Broadband has an irrevocable proxy to vote certain shares of Charter common stock owned beneficially or of record by GCI Liberty, Inc. and A/N following the closing of the Time Warner Cable Merger, for a five year term subject to extension upon the mutual agreement of both parties, subject to certain limitations.

Liberty Broadband's overall voting interest is diluted by the outstanding A/N interest in a subsidiary of Charter because the A/N interest has voting rights in Charter. As a result of the A/N Proxy and the GCI Liberty, Inc. Agreement, Liberty Broadband controls 25.01% of the aggregate voting power of Charter following the completion of the Time Warner Cable Merger and the Bright House Transaction and is Charter's largest stockholder.

Additionally, so long as the A/N Proxy is in effect, if A/N proposes to transfer common units of Charter Communications Holdings, LLC (which units are exchangeable into Charter shares and which will, under certain circumstances, result in the conversion of certain shares of Charter class B common stock into Charter shares) or Charter shares, in each case, constituting either (i) shares representing the first 7.0% of the outstanding voting power of Charter held by A/N or (ii) shares representing the last 7.0% of the outstanding voting power of Charter held by A/N, Liberty Broadband will have a right of first refusal ("ROFR") to purchase all or a portion of any such securities A/N proposes to transfer. The purchase price per share for any securities sold to Liberty Broadband pursuant to the ROFR will be the volume-weighted average price of Charter shares for the two trading day period before the notice of a proposed sale by A/N, payable in cash. Certain transfers are permitted to affiliates of A/N, subject to the transferee entity entering into an agreement assuming the transferor's obligations under the A/N Proxy.

LIBERTY BROADBAND CORPORATION**Notes to Consolidated Financial Statements (Continued)****December 31, 2019, 2018 and 2017**

During the years ended December 31, 2019, 2018 and 2017, there was a dilution loss of \$9 million, \$44 million, and \$18 million, respectively, in the Company's investment in Charter. The dilution losses are attributable to stock option exercises by employees and other third parties at prices below Liberty Broadband's book basis per share.

During the years ended December 31, 2019, 2018 and 2017, the Company recorded \$380 thousand, \$172 thousand and \$768 thousand, respectively, of its share of Charter's other comprehensive earnings (loss), net of income taxes. Charter records gains and losses related to the fair value of its interest rate swap agreements which qualify as hedging activities in other comprehensive earnings (loss). The pre-tax portion of Liberty Broadband's share of Charter's other comprehensive earnings was \$0.5 million, \$0.2 million and \$1.2 million for the years ended December 31, 2019, 2018 and 2017, respectively.

The excess basis has been allocated within memo accounts used for equity method accounting purposes as follows (amounts in millions):

	Years ended December 31,	
	2019	2018
Property and equipment	\$ 225	328
Customer relationships	1,043	721
Franchise fees	1,996	1,821
Trademarks	29	29
Goodwill	1,630	1,202
Debt	(9)	(105)
Deferred income tax liability	(817)	(698)
	<u>\$ 4,097</u>	<u>3,298</u>

Property and equipment and customer relationships have weighted average remaining useful lives of approximately 5 years and 10 years, respectively, and indefinite lives to franchise fees, trademarks and goodwill. The excess basis of outstanding debt is amortized over the contractual period using the straight-line method. The increase in excess basis for the year ended December 31, 2019, was primarily due to Charter's share buyback program. Included in our share of earnings from Charter of \$286 million, \$166 million and \$2,509 million for the years ended December 31, 2019, 2018 and 2017, respectively, are \$124 million, \$119 million and \$277 million, respectively, of losses, net of taxes, due to the amortization of the excess basis related to assets with identifiable useful lives and debt.

Accounting Changes

Charter adopted the new leasing standard as of January 1, 2019, using the modified retrospective approach with a cumulative-effect adjustment recorded at the beginning of the period of adoption. The new standard resulted in the recording of leased assets and lease liabilities for Charter's operating leases of approximately \$1.1 billion and \$1.2 billion, respectively, as of January 1, 2019. The difference between the leased assets and lease liabilities primarily represents the prior year end deferred rent liabilities balance, resulting from historical straight-lining of operating leases, which was effectively reclassified upon adoption to reduce the measurement of the leased assets. The adoption of the standard did not have an impact on Charter's shareholders equity, results from operations and cash flows.

Charter adopted several new accounting standards during the year ended December 31, 2018, including the new revenue guidance and guidance related to tax consequences of intra-entity asset transfers (other than the transfer of inventory). Upon adoption of the standards, Charter recognized an increase to total shareholders' equity of \$69 million during the year ended December 31, 2018.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Summarized financial information for Charter is as follows:

Consolidated Balance Sheets

	December 31, 2019	December 31, 2018
amounts in millions		
Current assets	\$ 6,537	2,944
Property and equipment, net	34,591	35,126
Goodwill	29,554	29,554
Intangible assets	74,775	76,884
Other assets	2,731	1,622
Total assets	<u>\$ 148,188</u>	<u>146,130</u>
Current liabilities	\$ 12,385	12,095
Deferred income taxes	17,711	17,389
Long-term debt	75,578	69,537
Other liabilities	3,703	2,837
Equity	38,811	44,272
Total liabilities and equity	<u>\$ 148,188</u>	<u>146,130</u>

Consolidated Statements of Operations

	Years ended December 31,		
	2019	2018	2017
amounts in millions			
Revenue	\$ 45,764	43,634	41,581
Cost and expenses:			
Operating costs and expenses (excluding depreciation and amortization)	29,224	27,860	26,541
Depreciation and amortization	9,926	10,318	10,588
Other operating expenses, net	103	235	346
	<u>39,253</u>	<u>38,413</u>	<u>37,475</u>
Operating income	6,511	5,221	4,106
Interest expense, net	(3,797)	(3,540)	(3,090)
Loss on extinguishment of debt	(25)	—	(40)
Other income (expense), net	(258)	5	52
Income tax (expense) benefit	(439)	(180)	9,087
Net earnings (loss)	1,992	1,506	10,115
Less: Net income attributable to noncontrolling interests	(324)	(276)	(220)
Net Income (loss) attributable to Charter shareholders	<u>\$ 1,668</u>	<u>1,230</u>	<u>9,895</u>

(6) Debt

Amended 2017 Margin Loan Facility

On August 19, 2019, a bankruptcy remote wholly owned subsidiary of the Company (“SPV”), entered into Amendment No. 2 to its multi-draw margin loan credit facility (the “Amended 2017 Margin Loan Facility” and, the credit agreement governing such facility, the “Amended 2017 Margin Loan Agreement”) with Wilmington Trust, National Association as the successor

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

administrative agent, BNP Paribas, Dublin Branch, as the successor calculation agent, and the lenders thereunder. SPV is permitted, subject to certain funding conditions, to borrow term loans up to an aggregate principal amount equal to \$1.0 billion. SPV will also have the ability from time to time to request additional loans in an aggregate principal amount of up to \$1.0 billion on an uncommitted basis subject to certain conditions. SPV had borrowed \$575 million and \$525 million as of December 31, 2019 and 2018, respectively. SPV has \$425 million available to be drawn until August 19, 2020. The maturity date of the loans under the Amended 2017 Margin Loan Agreement is August 24, 2021 (except for any incremental loans incurred thereunder to the extent SPV and the incremental lenders agree to a later maturity date). Borrowings under the Amended 2017 Margin Loan Agreement bear interest at the three-month LIBOR rate plus a per annum spread of 1.5%, unless it is unlawful for the applicable lender to fund or maintain loans based on LIBOR or there are material restrictions on the applicable lender to do so, in which case borrowings under the Amended 2017 Margin Loan Agreement will either (a) bear interest at 0.5% plus the higher of (i) the federal funds rate plus ½ of 1%, (ii) the prime rate and (iii) LIBOR plus 1% for each day during such period or (b) be prepaid. Borrowings outstanding under this margin loan bore interest at a rate of 3.4% per annum at December 31, 2019, and was calculated as LIBOR plus 1.5%. Interest is payable quarterly in arrears beginning on September 29, 2017. SPV used available cash and a portion of the proceeds of the loans under the Amended 2017 Margin Loan Facility to repay the two margin loan agreements entered into by a wholly-owned special purpose subsidiary of the Company on October 30, 2014 and two margin loan agreements entered into by another wholly-owned special purpose subsidiary of the Company on March 21, 2016.

The Amended 2017 Margin Loan Agreement contains various affirmative and negative covenants that restrict the activities of SPV (and, in some cases, the Company and its subsidiaries with respect to shares of Charter owned by the Company and its subsidiaries). The Amended 2017 Margin Loan Agreement does not include any financial covenants. The Amended 2017 Margin Loan Agreement also contains restrictions related to additional indebtedness and events of default customary for margin loans of this type.

SPV's obligations under the Amended 2017 Margin Loan Agreement are secured by first priority liens on a portion of the Company's ownership interest in Charter, sufficient for SPV to meet the loan to value requirements under the Amended 2017 Margin Loan Agreement. The Amended 2017 Margin Loan Agreement indicates that no lender party shall have any voting rights with respect to the shares transferred, except to the extent that a lender party buys any shares in a sale or other disposition made pursuant to the terms of the loan agreements. As of December 31, 2019, 6.8 million shares of Charter with a value of \$3.3 billion were pledged as collateral pursuant to the Amended 2017 Margin Loan Agreement.

(7) Income Taxes

On December 22, 2017, the U.S. government enacted the Tax Act. The Tax Act made broad and complex changes to the U.S. tax code, the most significant of which was a reduction to the U.S. federal corporate tax rate from 35 percent to 21 percent. The Company reflected the income tax effects of the Tax Act for which the accounting was known as of December 31, 2017. As of December 31, 2018, the Company had completed its analysis of the tax effects of the Tax Act.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Income tax benefit (expense) consists of:

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Current:			
Federal	\$ —	—	(11)
State and local	(2)	(355)	(84)
	<u>(2)</u>	<u>(355)</u>	<u>(95)</u>
Deferred:			
Federal	(30,841)	(17,501)	(301,837)
State and local	(7,099)	(4,068)	(115,001)
	<u>(37,940)</u>	<u>(21,569)</u>	<u>(416,838)</u>
Income tax benefit (expense)	\$ (37,942)	(21,924)	(416,933)

Income tax benefit (expense) differs from the amounts computed by applying the applicable U.S. federal income tax rate of 21% in 2019 and 2018 and 35% in 2017 as a result of the following:

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Computed expected tax benefit (expense)	\$ (32,583)	(19,294)	(857,710)
State and local taxes, net of federal income taxes	(5,414)	(3,831)	(74,805)
Change in valuation allowance	(249)	380	(1,208)
Change in tax rate - other	18	(27)	—
Change in tax rate - U.S. tax reform	—	—	515,773
Derivative instrument	246	768	1,084
Other	40	80	(67)
Income tax (expense) benefit	\$ (37,942)	(21,924)	(416,933)

For the year ended December 31, 2019, the significant reconciling item, as noted in the table above, is the result of state income taxes.

For the year ended December 31, 2018, the significant reconciling items, as noted in the table above, are the result of state income taxes, partially offset by unrealized gains attributable to the Company's own stock which is not recognized for tax purposes.

For the year ended December 31, 2017, the significant reconciling items, as noted in the table above, are the result of the effect of the change in the U.S. federal corporate tax rate from 35% to 21% on deferred taxes and the effect of state income taxes. The Company recorded a discrete net tax benefit of \$516 million in the period ending December 31, 2017. This net benefit primarily consisted of a net benefit for the corporate rate reduction.

LIBERTY BROADBAND CORPORATION**Notes to Consolidated Financial Statements (Continued)****December 31, 2019, 2018 and 2017**

The tax effects of temporary differences and tax attributes that give rise to significant portions of the deferred income tax assets and deferred income tax liabilities are presented below:

	December 31,	
	2019	2018
	amounts in thousands	
Deferred tax assets:		
Tax loss and tax credit carryforwards	\$ 66,329	56,056
Accrued stock-based compensation	7,969	5,571
Deferred revenue	1,562	1,430
Other	114	44
Total deferred tax assets	75,974	63,101
Less: valuation allowance	(8,021)	(7,773)
Net deferred tax assets	67,953	55,328
Deferred tax liabilities:		
Investments	(1,067,492)	(1,020,869)
Intangible assets	(46)	(261)
Other	(74)	(27)
Total deferred tax liabilities	(1,067,612)	(1,021,157)
Net deferred tax asset (liability)	\$ (999,659)	(965,829)

The Company's valuation allowance increased \$0.2 million in 2019, which affected tax expense during the year ended December 31, 2019.

At December 31, 2019, the Company had a deferred tax liability on investments of \$1,067.5 million due to its share of earnings in its equity investment in Charter.

At December 31, 2019, Liberty Broadband had federal and state net operating losses, capital loss carryforwards, interest expense carryforwards and tax credit carryforwards for income tax purposes aggregating \$66.3 million (on a tax effected basis). Of the \$66.3 million, \$17.1 million are carryforwards with no expiration. The remaining carryforwards expire at certain future dates. These carryforwards are expected to be utilized prior to expiration, except for \$8.0 million which based on current projections, may expire unused and accordingly are subject to a valuation allowance. The carryforwards that are expected to be utilized will begin to expire in 2020.

As of December 31, 2019, the Company had not recorded tax reserves related to unrecognized tax benefits for uncertain tax positions.

As of December 31, 2019, the IRS has completed its examination of Liberty Broadband's 2016, 2017 and 2018 tax years. Liberty Broadband's 2019 tax year is being examined as part of the IRS's Compliance Assurance Process "CAP" program. Because Liberty Broadband's ownership of Charter is less than the required 80%, Charter is not consolidated with Liberty Broadband for federal income tax purposes.

(8) Stockholders' Equity

In the Broadband Spin-Off, record holders of Liberty Series A, Series B and Series C common stock received one-fourth of a share of the corresponding series of Liberty Broadband common stock for each share of Liberty common stock held by them, with cash paid in lieu of fractional shares. This resulted in the issuance of an aggregate 85,761,332 shares of Series A, Series B and Series C common stock.

In addition, following the completion of the Broadband Spin-Off, on December 10, 2014, stockholders received a subscription right to acquire one share of Liberty Broadband Series C common stock for every five shares of Liberty Broadband

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

common stock they held as of the rights record date. Accordingly, 17,277,224 shares of Series C common stock were issued to those rightsholders exercising basic and, as applicable, oversubscription privileges. The subscription rights were issued to raise capital for general corporate purposes of Liberty Broadband.

In connection with the Time Warner Cable Merger in May 2016, Liberty Broadband funded its purchase of shares of Charter Class A common stock using proceeds of \$4.4 billion related to subscriptions for approximately 78.3 million newly issued shares of Liberty Broadband Series C common stock, par value \$0.01 per share (the "Series C Shares"), at a price per share of \$56.23. The purchasers of the Series C Shares were Liberty Interactive through its Liberty Ventures Group (approximately 42.7 million shares) and certain other third party investors, which all invested on substantially similar terms. The Liberty Ventures Group was later attributed to GCI Liberty, Inc. in a split-off transaction, including its interest in Series C Shares of the Company. As a result of the issuance of the Series C Shares in connection with the Transactions, GCI Liberty, Inc.'s non-voting economic ownership in Liberty Broadband was 23.5% as of December 31, 2019.

The Company had an outstanding zero-strike call option on 704,908 Series C Shares at December 31, 2016, which expired in March 2017. The Company prepaid a premium of \$47.9 million in December 2016. Liberty Broadband exercised its option to settle the contract in cash in March 2017 for cash proceeds of \$50.0 million. The Company entered into another zero-strike call option on 527,156 shares of Liberty Broadband Series C common stock and prepaid a premium of \$47.7 million in October 2017. Upon expiration of the contract in December 2017, the Company physically settled the contract by purchasing 527,156 shares of Liberty Broadband Series C common stock at a price of \$90.54 per share. As of December 31, 2018, the Company had no zero-strike call options outstanding. In September 2019, the Company entered into a zero-strike call option on 460,675 shares of Liberty Broadband Series C common stock and prepaid a premium of \$46.3 million. Upon expiration of the contract in December 2019, the Company exercised its option to settle the contract in cash for proceeds of \$47.5 million. As of December 31, 2019, the Company had no zero-strike call options outstanding. The Company accounted for the zero-strike call option as a financial instrument asset due to its settlement provisions. Accordingly, changes in the fair value of the asset are included in realized and unrealized gains (losses) on financial instruments in the accompanying statement of operations.

Preferred Stock

Liberty Broadband's preferred stock is issuable, from time to time, with such designations, preferences and relative participating, optional or other rights, qualifications, limitations or restrictions thereof, as shall be stated and expressed in a resolution or resolutions providing for the issue of such preferred stock adopted by Liberty Broadband's board of directors. As of December 31, 2019, no shares of preferred stock were issued.

Common Stock

Liberty Broadband's Series A common stock has one vote per share, Liberty Broadband's Series B common stock has ten votes per share and Liberty Broadband's Series C common stock has no votes per share (except as otherwise required by applicable law). Each share of the Series B common stock is exchangeable at the option of the holder for one share of Series A common stock. All series of our common stock participate on an equal basis with respect to dividends and distributions.

As of December 31, 2019, there were 4 thousand shares of Series A and 1.9 million shares of Series C common stock reserved for issuance under exercise privileges of outstanding stock options.

LIBERTY BROADBAND CORPORATION**Notes to Consolidated Financial Statements (Continued)****December 31, 2019, 2018 and 2017****(9) Stock-Based Compensation**

Included in the accompanying consolidated statements of operations are the following amounts of stock-based compensation for the years ended December 31, 2019, 2018 and 2017 (amounts in thousands).

	December 31,		
	2019	2018	2017
Operating expense	\$ 113	108	178
Selling, general and administrative	10,398	5,599	5,114
	<u>\$ 10,511</u>	<u>5,707</u>	<u>5,292</u>

Liberty Broadband - Incentive Plans

Pursuant to the Liberty Broadband 2019 Omnibus Incentive Plan, the Company may grant Awards to be made in respect of a maximum of 6.0 million shares of Liberty Broadband common stock. Awards generally vest over 1-5 years and have a term of 7-10 years. Liberty Broadband issues new shares upon exercise of equity awards.

Liberty Broadband – Grants of Stock Options

During the year ended December 31, 2019, Liberty Broadband granted 302 thousand options to purchase shares of Series C Liberty Broadband common stock and 25 thousand performance-based restricted stock units (“RSUs”) of Series C Liberty Broadband common stock to our CEO. Such options had a weighted average grant-date fair value (“GDFV”) of \$31.12 per share. The RSUs had a GDFV of \$88.99 per share at the time they were granted. The options mainly vest on December 31, 2023 and the RSUs cliff vest one year from the month of grant, subject to satisfaction of certain performance objectives. Performance objectives, which are subjective, are considered in determining the timing and amount of the compensation expense recognized. When the satisfaction of the performance objectives becomes probable, the Company records compensation expense. The probability of satisfying the performance objectives is assessed at the end of each reporting period. This grant includes the first upfront option grant related to the CEO’s new employment agreement. See discussion in note 1 regarding the new compensation agreement with the Company’s CEO.

Also during the year ended December 31, 2019, Liberty Broadband granted to its employees 41 thousand options to purchase shares of Series C Liberty Broadband common stock. Such options had a weighted average GDFV of \$32.21 and vest between three and five years.

During the years ended December 31, 2019, 2018 and 2017, Liberty Broadband granted 8 thousand, 10 thousand and 16 thousand options, respectively, to purchase shares of Series C Liberty Broadband common stock to its non-employee directors with a weighted average GDFV of \$31.18, \$24.04 and \$22.68 per share, respectively, which cliff vest over a one year vesting period. There were no options to purchase shares of Series A common stock granted during 2019.

The Company has calculated the GDFV for all of its equity classified awards and any subsequent remeasurement of its liability classified awards using the Black-Scholes Model. The Company estimates the expected term of the Awards based on historical exercise and forfeiture data. For grants made in 2019, 2018 and 2017, the range of expected terms was 5.3 to 6.3 years. The volatility used in the calculation for Awards is based on the historical volatility of Liberty Broadband common stock. For grants made in 2019, 2018 and 2017, the range of volatilities was 24.4% to 25.7%. The Company uses a zero dividend rate and the risk-free rate for Treasury Bonds with a term similar to that of the subject option.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Liberty Broadband – Outstanding Awards

The following tables present the number and weighted average exercise price (“WAEP”) of Awards to purchase Liberty Broadband common stock granted to certain officers, employees and directors of the Company, as well as the weighted average remaining life and aggregate intrinsic value of the Awards.

	Series A (in thousands)	WAEP	Weighted average remaining contractual life (in years)	Aggregate intrinsic value (in millions)
Outstanding at January 1, 2019	393	\$ 33.31		
Granted	—	\$ —		
Exercised	(389)	\$ 33.16		
Forfeited/Cancelled	—	\$ —		
Outstanding at December 31, 2019	<u>4</u>	\$ 47.92	2.0	\$ —
Exercisable at December 31, 2019	<u>4</u>	\$ 47.92	2.0	\$ —

	Series C (in thousands)	WAEP	Weighted average remaining contractual life (in years)	Aggregate intrinsic value (in millions)
Outstanding at January 1, 2019	2,356	\$ 43.77		
Granted	351	\$ 117.52		
Exercised	(775)	\$ 33.14		
Forfeited/Cancelled	—	\$ —		
Outstanding at December 31, 2019	<u>1,932</u>	\$ 61.43	5.3	\$ 124
Exercisable at December 31, 2019	<u>1,622</u>	\$ 50.00	4.9	\$ 123

The Company had no outstanding Series B options during 2019.

As of December 31, 2019, the total unrecognized compensation cost related to unvested Liberty Broadband Awards was approximately \$9.7 million. Such amount will be recognized in the Company’s consolidated statements of operations over a weighted average period of approximately 2.5 years.

As of December 31, 2019, Liberty Broadband reserved 1.9 million shares of Series A and Series C common stock for issuance under exercise privileges of outstanding stock Awards.

Liberty Broadband – Exercises

The aggregate intrinsic value of all options exercised during the years ended December 31, 2019, 2018 and 2017 was \$1.7 million, \$3.0 million and \$8.1 million, respectively.

Liberty Broadband – Restricted Shares

The aggregate fair value of all Series A and Series C restricted shares of Liberty Broadband common stock that vested during the years ended December 31, 2019, 2018 and 2017 was \$2.6 million, \$112 thousand and \$116 thousand, respectively.

LIBERTY BROADBAND CORPORATION**Notes to Consolidated Financial Statements (Continued)****December 31, 2019, 2018 and 2017**

As of December 31, 2019, the Company had approximately 47 thousand unvested restricted shares of Series A and Series C Liberty Broadband common stock held by certain directors, officers and employees of the Company with a weighted average GDFV of \$84.85 per share.

Skyhook equity incentive plans***Long-Term Incentive Plans***

Skyhook has a long-term incentive plan which provides for the granting of PARs and PSUs to employees, directors, and consultants of Skyhook that is not significant to Liberty Broadband. As of December 31, 2019 and 2018, \$1.2 million and \$1.1 million, respectively, are included in other liabilities for the fair value (Level 2) of the Company's LTIP obligations.

(10) Employee Benefit Plans

Employees of Skyhook participate in a separate defined-contribution plan administered by Skyhook (the "Skyhook 401(k) Plan"). The Skyhook 401(k) Plan provides for employees to make contributions by salary reductions for investment in several mutual funds and/or a self-directed brokerage account pursuant to Section 401(k) of the Internal Revenue Code.

Pursuant to the existing Skyhook 401(k) Plan, Skyhook employees are eligible for 100% matching contributions for each dollar contributed up to 10%, subject to certain limitations. For the years ended December 31, 2019, 2018 and 2017, Skyhook contributed approximately \$0.8 million, \$0.8 million and \$1.0 million, respectively.

(11) Commitments and Contingencies***Leases***

Skyhook leases various properties under operating leases expiring at various times through 2022. The aggregate minimum annual lease payments under the noncancelable operating leases as of December 31, 2019 are as follows (amounts in thousands):

	Operating Leases	
2020	\$	630
2021		432
2022		440
Total lease payments		1,502
Less: imputed interest		144
Total lease liabilities	\$	1,358

Skyhook's two principal facilities are under lease through December 2020 and December 2022, respectively. Total operating lease cost for the year ended December 31, 2019 was \$0.7 million. Total rental expense for the years ended December 31, 2018 and 2017 was \$1.0 million and \$1.1 million, respectively.

General Litigation

In the ordinary course of business, the Company and its consolidated subsidiaries are parties to legal proceedings and claims involving alleged infringement of third-party intellectual property rights, defamation, and other claims. Although it is reasonably possible that the Company may incur losses upon conclusion of such matters, an estimate of any loss or range of loss cannot be made. In the opinion of management, it is expected that amounts, if any, which may be required to satisfy such contingencies will not be material in relation to the accompanying consolidated financial statements.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Off-Balance Sheet Arrangements

Liberty Broadband did not have any off-balance sheet arrangements that have, or are reasonably likely to have, a current or future effect on the Company's financial condition, results of operations, liquidity, capital expenditures or capital resources.

(12) Segment Information

Liberty Broadband identifies its reportable segments as (A) those consolidated companies that represent 10% or more of its consolidated annual revenue, annual Adjusted OIBDA or total assets and (B) those equity method affiliates whose share of earnings or losses represent 10% or more of Liberty Broadband's annual pre-tax earnings (losses).

Liberty Broadband evaluates performance and makes decisions about allocating resources to its operating segments based on financial measures such as revenue and Adjusted OIBDA. In addition, Liberty Broadband reviews nonfinancial measures such as subscriber growth.

For segment reporting purposes, Liberty Broadband defines Adjusted OIBDA as revenue less operating expenses and selling, general and administrative expenses (excluding stock-based compensation). Liberty Broadband believes this measure is an important indicator of the operational strength and performance of its businesses by identifying those items that are not directly a reflection of each business' performance or indicative of ongoing business trends. In addition, this measure allows management to view operating results and perform analytical comparisons and benchmarking between businesses and identify strategies to improve performance. This measure of performance excludes depreciation and amortization, stock based compensation, separately reported litigation settlements and restructuring and impairment charges that are included in the measurement of operating income pursuant to GAAP. Accordingly, Adjusted OIBDA should be considered in addition to, but not as a substitute for, operating income, net earnings, cash flow provided by operating activities and other measures of financial performance prepared in accordance with GAAP. Liberty Broadband generally accounts for intersegment sales and transfers as if the sales or transfers were to third parties, that is, at current prices.

For the year ended December 31, 2019, Liberty Broadband has identified the following consolidated company and equity method investment as its reportable segments:

- Skyhook—a wholly owned subsidiary of the Company that provides the Precision Location Solution (a location determination service) and Geospatial Insights product (a location intelligence and data insights service).
- Charter—an equity method investment that is one of the largest providers of cable services in the United States, offering a variety of entertainment, information and communications solutions to residential and commercial customers.

Liberty Broadband's operating segments are strategic business units that offer different products and services. They are managed separately because each segment requires different technologies, distribution channels and marketing strategies. The accounting policies of the segments that are also consolidated companies are the same as those described in the Company's summary of significant accounting policies in the Company's annual financial statements. We have included amounts attributable to Charter in the tables below. Although Liberty Broadband owns less than 100% of the outstanding shares of Charter, 100% of the Charter amounts are included in the schedule below and subsequently eliminated in order to reconcile the account totals to the Liberty Broadband consolidated financial statements.

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

Performance Measures

	Years ended December 31,					
	2019		2018		2017	
	Revenue	Adjusted OIBDA	Revenue	Adjusted OIBDA	Revenue	Adjusted OIBDA
	amounts in thousands					
Skyhook	\$ 14,859	(4,704)	22,256	3,161	13,092	(9,496)
Charter	45,764,000	16,752,000	43,634,000	15,824,000	41,581,000	14,955,000
Corporate and other	—	(12,187)	—	(6,689)	—	(6,920)
	45,778,859	16,735,109	43,656,256	15,820,472	41,594,092	14,938,584
Eliminate equity method affiliate	(45,764,000)	(16,752,000)	(43,634,000)	(15,824,000)	(41,581,000)	(14,955,000)
Consolidated Liberty Broadband	\$ 14,859	(16,891)	22,256	(3,528)	13,092	(16,416)

Other Information

	December 31, 2019			December 31, 2018		
	Total assets	Investments in affiliates	Capital expenditures	Total assets	Investments in affiliates	Capital expenditures
	amounts in thousands					
Skyhook	\$ 18,145	—	500	21,763	—	41
Charter	148,188,000	—	7,195,000	146,130,000	—	9,125,000
Corporate and other	12,238,197	12,194,674	—	12,076,674	12,004,376	—
	160,444,342	12,194,674	7,195,500	158,228,437	12,004,376	9,125,041
Eliminate equity method affiliate	(148,188,000)	—	(7,195,000)	(146,130,000)	—	(9,125,000)
Consolidated Liberty Broadband	\$ 12,256,342	12,194,674	500	12,098,437	12,004,376	41

Revenue by Geographic Area

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
United States	\$ 12,507	19,946	10,315
Other countries	2,352	2,310	2,777
	\$ 14,859	22,256	13,092

LIBERTY BROADBAND CORPORATION
Notes to Consolidated Financial Statements (Continued)
December 31, 2019, 2018 and 2017

The following table provides a reconciliation of Adjusted OIBDA to Operating income (loss) and earnings (loss) before income taxes:

	Years ended December 31,		
	2019	2018	2017
	amounts in thousands		
Consolidated segment Adjusted OIBDA	\$ (16,891)	(3,528)	(16,416)
Stock-based compensation	(10,511)	(5,707)	(5,292)
Depreciation and amortization	(1,875)	(2,779)	(3,770)
Operating income (loss)	(29,277)	(12,014)	(25,478)
Interest expense	(25,166)	(23,302)	(19,570)
Share of earnings (loss) of affiliates, net	286,401	166,146	2,508,991
Gain (loss) on dilution of investment in affiliate	(79,329)	(43,575)	(17,872)
Realized and unrealized gains (losses) on financial instruments, net	1,170	3,659	3,098
Other, net	1,359	963	1,431
Earnings (loss) before income taxes	<u>\$ 155,158</u>	<u>91,877</u>	<u>2,450,600</u>

LIBERTY BROADBAND CORPORATION

Notes to Consolidated Financial Statements (Continued)

December 31, 2019, 2018 and 2017

(13) Quarterly Financial Information (Unaudited)

	<u>1st</u> <u>Quarter</u>	<u>2nd</u> <u>Quarter</u>	<u>3rd</u> <u>Quarter</u>	<u>4th</u> <u>Quarter</u>
amounts in thousands, except per share amounts				
2019:				
Revenue	\$ 3,458	3,747	3,713	3,941
Operating income (loss)	\$ (6,201)	(7,166)	(7,588)	(8,322)
Net earnings (loss) attributable to Liberty Broadband Corporation Series A, Series B and Series C stockholders	\$ (14,301)	12,052	27,496	91,969
Basic earnings (loss) attributable to Liberty Broadband Corporation Series A, Series B and Series C stockholders per common share	\$ (0.08)	0.07	0.15	0.51
Diluted earnings (loss) attributable to Liberty Broadband Corporation Series A, Series B and Series C stockholders per common share	\$ (0.08)	0.07	0.15	0.50
amounts in thousands, except per share amounts				
2018:				
Revenue	\$ 11,791	3,371	3,518	3,576
Operating income (loss)	\$ 2,246	(5,071)	(4,096)	(5,093)
Net earnings (loss) attributable to Liberty Broadband Corporation Series A, Series B and Series C stockholders	\$ (15,070)	10,580	59,639	14,804
Basic earnings (loss) attributable to Liberty Broadband Corporation Series A, Series B and Series C stockholders per common share	\$ (0.08)	0.06	0.33	0.08
Diluted earnings (loss) attributable to Liberty Broadband Corporation Series A, Series B and Series C stockholders per common share	\$ (0.08)	0.06	0.33	0.08

PART III

The following required information is incorporated by reference to our definitive proxy statement for our 2020 Annual Meeting of Stockholders presently scheduled to be held in the second quarter of 2020:

- Item 10. Directors, Executive Officers and Corporate Governance
- Item 11. Executive Compensation
- Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters
- Item 13. Certain Relationships and Related Transactions, and Director Independence
- Item 14. Principal Accounting Fees and Services

We expect to file our definitive proxy statement for our 2020 Annual Meeting of Shareholders with the Securities and Exchange Commission on or before April 29, 2020.

PART IV.

Item 15. Exhibits and Financial Statement Schedules

(a)(1) *Financial Statements*

Included in Part II of this report:

	<u>Page No.</u>
Liberty Broadband Corporation:	
Reports of Independent Registered Public Accounting Firm	II-15 - 16
Consolidated Balance Sheets, December 31, 2019 and 2018	II-18
Consolidated Statements of Operations, Years ended December 31, 2019, 2018 and 2017	II-19
Consolidated Statements of Comprehensive Earnings (loss), Years ended December 31, 2019, 2018 and 2017	II-20
Consolidated Statements of Cash Flows, Years ended December 31, 2019, 2018 and 2017	II-21
Consolidated Statements of Equity, Years ended December 31, 2019, 2018 and 2017	II-22
Notes to Consolidated Financial Statements, December 31, 2019, 2018 and 2017	II-23

(a)(2) *Financial Statement Schedules*

- (i) All schedules have been omitted because they are not applicable, not material or the required information is set forth in the financial statements or notes thereto.
- (ii) The audited consolidated financial statements of Charter Communications, Inc. as of December 31, 2019 and 2018, and for each of the years ended December 31, 2019, 2018 and 2017, as well as the accompanying notes thereto and the related Report of Independent Registered Public Accounting Firm, are contained in Charter Communications, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on January 31, 2020 and are incorporated herein by reference as Exhibit 99.1.

(a)(3) Exhibits

Listed below are the exhibits which are filed as a part of this Report (according to the number assigned to them in Item 601 of Regulation S-K):

3 - Articles of Incorporation and Bylaws:

- 3.1 [Restated Certificate of Incorporation of Liberty Broadband Corporation \(incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on November 10, 2014\) \(File No. 001-36713\) \(the "November 10, 2014 8-K"\)](#).
- 3.2 [Amended and Restated Bylaws of Liberty Broadband Corporation \(incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on August 13, 2015\) \(File No. 001-36711\)](#).

4 - Instruments Defining the Rights of Securities Holders, including Indentures:

- 4.1 [Specimen Certificate for shares of Series A Common Stock of the Registrant \(incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 filed on July 25, 2014\) \(File No. 333-197619\) \(the "S-1"\)](#).
- 4.2 [Specimen Certificate for shares of Series B Common Stock of the Registrant \(incorporated by reference to Exhibit 4.2 to the S-1\)](#).
- 4.3 [Specimen Certificate for shares of Series C Common Stock of the Registrant \(incorporated by reference to Exhibit 4.3 to the S-1\)](#).

- 4.4 [Margin Loan Agreement, dated as of August 31, 2017, among LBC Cheetah 6, LLC, as Borrower, various lenders and Bank of America, N.A., as Calculation Agent and Bank of America, N.A., as Administrative Agent \(incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 filed on November 1, 2017 \(File No. 001-36713\)\).](#)
 - 4.5 [Form of Amendment No. 1 to Margin Loan Agreement, dated as of August 24, 2018 \(incorporated by reference to Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2018 filed on November 1, 2018 \(File No. 001-36713\)\).](#)
 - 4.6 [Form of Amendment No. 2 to Margin Loan Agreement and Amendment No. 1 to Collateral Account Control Agreement, dated as of August 19, 2019 \(incorporated by reference to Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019 filed on November 1, 2019 \(File No. 001-36713\)\).](#)
 - 4.7 [Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.*](#)
- 10 - Material Contracts:
- 10.1+ [Liberty Broadband Corporation 2014 Omnibus Incentive Plan \(Amended and Restated as of March 11, 2015\) \(incorporated by reference to Annex A to the Registrant's Proxy Statement on Schedule 14A filed on April 22, 2015 \(File No. 001-36713\)\).](#)
 - 10.2+ [Liberty Broadband Corporation Transitional Stock Adjustment Plan \(incorporated by reference to Exhibit 99.1 to the Registrant's Registration Statement on Form S-8 filed on November 21, 2014 \(File No. 333-200436\)\).](#)
 - 10.3 [Stockholders Agreement, dated as of March 19, 2013, by and among Charter Communications, Inc. and Liberty Media Corporation \(incorporated by reference to Exhibit 10.1 to Liberty Media Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013 filed on May 9, 2013 \(File No. 001-35707\)\).](#)
 - 10.4 [Amendment to Stockholders Agreement, dated as of September 29, 2014, by and among Charter Communications, Inc., Liberty Media Corporation and Liberty Broadband Corporation \(incorporated by reference to Exhibit 7\(d\) to Liberty Media Corporation's Schedule 13D in respect of common stock of Charter Communications, Inc., filed on October 10, 2014 \(File No. 005-57191\)\).](#)
 - 10.5 [Second Amended and Restated Stockholders Agreement, dated May 23, 2015, by and among Charter Communications, Inc., CCH I, LLC, Liberty Broadband Corporation, and Advance/Newhouse Partnership \(incorporated by reference to Annex C to CCH I, LLC's Registration Statement on Form S-4 filed on June 26, 2015 \(File No. 333-205240\)\).](#)
 - 10.6 [Letter Agreement to the Second Amended and Restated Stockholders Agreement, dated May 18, 2016, by and among Liberty Broadband Corporation, Advance/Newhouse Partnership, CCH I, LLC and Charter Communications, Inc. \(incorporated by reference to Exhibit 7\(p\) to Amendment No. 3 to Liberty Broadband Corporation's Schedule 13D in respect of common stock of Charter Communications, Inc., filed on May 26, 2016 \(File No. 005-57191\) \(the "May 26, 2016 13D/A"\)\).](#)
 - 10.7 [Proxy and Right of First Refusal Agreement, dated as of May 18, 2016, by and among Liberty Broadband Corporation, Advance/Newhouse Partnership, Charter Communications, Inc. and CCH I, LLC \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed on May 20, 2016 \(File No. 001-36713\) \(the "May 20, 2016 8-K"\)\).](#)
 - 10.8 [Proxy and Right of First Refusal Agreement, dated as of May 23, 2015, by and between Liberty Broadband Corporation and Liberty Interactive Corporation \(incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed on May 29, 2015 \(File No. 001-36713\)\).](#)
 - 10.9 [Amendment No. 1 to the Proxy and Right of First Refusal Agreement, dated May 13, 2016, by and among Liberty Broadband Corporation, Liberty Interactive Corporation and LV Bridge, LLC \(incorporated by reference to Exhibit 7\(n\) to the May 26, 2016 13D/A\).](#)

- 10.10 [Aircraft Time Sharing Agreements, dated as of November 6, 2015, by and between Liberty Broadband Corporation and Liberty Media Corporation \(incorporated by reference to Exhibit 10.19 to the Registrant’s Annual Report on Form 10-K for the year ended December 31, 2015 filed on February 12, 2016 \(File No. 001-36713\) \(the “2015 10-K”\)\).](#)
- 10.11+ [Form of Non-Qualified Stock Option Agreement under the Liberty Broadband Corporation 2014 Omnibus Incentive Plan \(Amended and Restated as of March 11, 2015\) \(incorporated by reference to Exhibit 10.21 to the 2015 10-K\).](#)
- 10.12+ [Form of Restricted Stock Award Agreement under the Liberty Broadband Corporation 2014 Omnibus Incentive Plan \(Amended and Restated as of March 11, 2015\) \(incorporated by reference to Exhibit 10.22 to the 2015 10-K\).](#)
- 10.13 [Registration Rights Agreement, dated as of May 18, 2016, by and among Liberty Broadband Corporation, Advance/Newhouse Partnership and Charter Communications, Inc. \(incorporated by reference to Exhibit 10.3 to Charter Communications, Inc.’s Current Report on Form 8-K filed on May 20, 2016 \(File No. 001-33664\)\).](#)
- 10.14+ [Amendment, dated March 12, 2018, of certain Liberty Broadband Corporation incentive plans \(incorporated by reference to Exhibit 10.1 to the Registrant’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2018 filed on May 2, 2018 \(File No. 001-36713\)\).](#)
- 10.15 [Form of Amended and Restated Indemnification Agreement between the Registrant and its executive officers/directors \(incorporated by reference to Exhibit 10.1 to the Registrant’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2019 filed on May 2, 2019 \(File No. 001-36713\)\).](#)
- 10.16+ [Liberty Broadband Corporation 2019 Omnibus Incentive Plan \(incorporated by reference to Annex A to the Registrant’s Proxy Statement on Schedule 14A, filed on April 18, 2019 \(File No. 001-36713\)\).](#)
- 10.17+ [Form of Non-Qualified Stock Option Agreement under the Liberty Broadband Corporation 2019 Omnibus Incentive Plan.*](#)
- 10.18+ [Form of Performance-Based Restricted Stock Units Award Agreement under the Liberty Broadband Corporation 2019 Omnibus Incentive Plan.*](#)
- 10.19+ [Services Agreement, dated as of November 4, 2014, by and between Liberty Media Corporation and Liberty Broadband Corporation \(incorporated by reference to Exhibit 10.2 to the Registrant’s Current Report on Form 8-K, filed on November 14, 2014 \(File No. 001-36713\)\).](#)
- 10.20+ [Form of First Amendment to Services Agreement, effective as of December 13, 2019, between Liberty Media Corporation and Qurate Retail, Inc., Liberty Broadband Corporation, GCI Liberty, Inc. and Liberty TripAdvisor Holdings, Inc.*](#)
- 10.21+ [Executive Employment Agreement, dated effective as of December 13, 2019, between Liberty Media Corporation and Gregory B. Maffei \(incorporated by reference to Exhibit 10.1 to Liberty Media Corporation’s Current Report on Form 8-K, filed on December 19, 2019 \(File No. 001-35707\) \(the “LMC 2019 8-K”\)\).](#)
- 10.22+ [Form of Annual Option Award Agreement between Liberty Broadband Corporation and Gregory B. Maffei under the Liberty Broadband Corporation 2019 Omnibus Incentive Plan \(incorporated by reference to Exhibit 10.3 to the Registrant’s Current Report on Form 8-K filed on December 19, 2019 \(File No. 001-36713\) \(the “December 2019 8-K”\)\).](#)
- 10.23+ [Form of Annual Performance-based Restricted Stock Unit Award Agreement between Liberty Broadband Corporation and Gregory B. Maffei under the Liberty Broadband Corporation 2019 Omnibus Incentive Plan \(incorporated by reference to Exhibit 10.4 to the December 2019 8-K\).](#)

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10.24+	Form of Upfront Award Agreement between Liberty Broadband Corporation and Gregory B. Maffei under the Liberty Broadband Corporation 2019 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.5 to the December 2019 8-K).
21	Subsidiaries of Liberty Broadband Corporation.*
23.1	Consent of KPMG LLP.*
23.2	Consent of KPMG LLP.*
31.1	Rule 13a-14(a)/15d - 14(a) Certification.*
31.2	Rule 13a-14(a)/15d - 14(a) Certification.*
32	Section 1350 Certification.**
99.1	Audited consolidated financial statements of Charter Communications, Inc. as of December 31, 2019 and 2018 and for each of the years ended December 31, 2019, 2018 and 2017 (incorporated by reference to Charter Communications, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2019 (File No. 001-33664), filed on January 31, 2020).
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded with the Inline XBRL document.*
101.SCH	Inline XBRL Taxonomy Extension Schema Document.*
101.CAL	Inline XBRL Taxonomy Calculation Linkbase Document.*
101.LAB	Inline XBRL Taxonomy Label Linkbase Document.*
101.PRE	Inline XBRL Taxonomy Presentation Linkbase Document.*
101.DEF	Inline XBRL Taxonomy Definition Document.*
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith.

** Furnished herewith.

+ This document has been identified as a management contract or compensatory plan or arrangement.

Item 16. Form 10-K Summary.

Not applicable.

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

As of the end of the period covered by the most recent Annual Report on Form 10-K of Liberty Broadband Corporation (the "Registrant"), the following securities of the Registrant were registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): (1) Series A common stock, par value \$0.01 per share (the "Series A common stock"), and (2) Series C common stock, par value \$0.01 per share (the "Series C common stock").

Description of Registrant's Common Stock

The following description of the Registrant's Series A common stock and Series C common stock is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to the Registrant's Restated Certificate of Incorporation (the "charter"), which is an exhibit to this Annual Report on Form 10-K and is incorporated by reference herein. We encourage you to read the charter and the applicable provisions of the Delaware General Corporation Law for additional information.

Authorized Capital Stock

The Registrant's authorized capital stock consists of one billion sixty-eight million seven hundred fifty thousand (1,068,750,000) shares, of which one billion eighteen million seven hundred and fifty thousand (1,018,750,000) shares are designated common stock, par value \$0.01 per share, and fifty million (50,000,000) shares are designated preferred stock, par value \$0.01 per share (the "preferred stock"). The common stock is divided into three series. The Registrant has five hundred million (500,000,000) shares of Series A common stock, eighteen million seven hundred and fifty thousand (18,750,000) shares of Series B common stock (the "Series B common stock"), and five hundred million (500,000,000) shares of Series C common stock authorized.

The Registrant's Common Stock

The holders of the Registrant's Series A common stock, Series B common stock and Series C common stock have equal rights, powers and privileges, except as otherwise described below.

Voting Rights

The holders of the Registrant's Series A common stock are entitled to one vote for each share held, and the holders of its Series B common stock are entitled to ten votes for each share held, on all matters voted on by the Registrant's stockholders, including elections of directors. The holders of its Series C common stock are not entitled to any voting powers, except as required by Delaware law. When the vote or consent of holders of the Series C common stock is required by Delaware law, the holders of the Registrant's Series C common stock will be entitled to 1/100th of a vote for each share held. The Registrant's charter does not provide for cumulative voting in the election of directors.

Dividends; Liquidation

Subject to any preferential rights of any outstanding series of the Registrant's preferred stock created by the board from time to time, the holders of the Registrant's common stock will be entitled to such dividends as may be declared from time to time by the board from funds available therefor. Except as otherwise described under "—Distributions," whenever a dividend is paid to the holders of one series of common stock, the Registrant will also pay to the holders of the other series of its common stock an equal per share dividend.

Conversion

Each share of the Registrant's Series B common stock is convertible, at the option of the holder, into one share of Series A common stock. The Registrant's Series A common stock and Series C common stock are not convertible into shares of any other series of the Registrant's common stock.

In addition, at any time that the Registrant has outstanding less than 20% of the total number of shares of its Series B common stock issued in the spin-off of the Registrant from Liberty Media Corporation, each outstanding share of the Registrant's Series B common stock may be automatically converted into one share of the Registrant's Series A common stock at the option of the Registrant's board of directors.

Distributions

Subject to the exception provided below, distributions made in shares of the Registrant's Series A common stock, Series B common stock, Series C common stock or any other security with respect to the Series A common stock, Series B common stock or Series C common stock may be declared and paid only as follows:

- Ⓢ a share distribution (1) consisting of shares of the Registrant's Series C common stock (or securities convertible therefor) to holders of Series A common stock, Series B common stock and Series C common stock, on an equal per share basis; or (2) consisting of (x) shares of the Registrant's Series A common stock (or securities convertible therefore other than, for the avoidance of doubt, shares of Series B common stock) to holders of Series A common stock, on an equal per share basis, (y) shares of Series B common stock (or securities convertible therefor) to holders of Series B common stock, on an equal per share basis, and (z) consisting of shares of Series C common stock (or securities convertible therefor) to holders of Series C common stock, on an equal per share basis; and
- Ⓢ a share distribution consisting of any class or series of securities of the Registrant or any other person, other than the Registrant's Series A common stock, Series B common stock or Series C common stock (or securities convertible therefor) on the basis of a distribution of (1) identical securities, on an equal per share basis, to holders of Series A common stock, Series B common stock and Series C common stock; or (2) separate classes or series of securities, on an equal per share basis, to holders of each such shares of the Registrant's common stock; or (3) a separate class or series of securities to the holders of one or more series of the Registrant's common stock and, on an equal per share basis, a different class or series of securities to the holders of all other series of the Registrant's common stock, provided that, in the case of (2) or (3) above, the securities so distributed do not differ in any respect other than their relative voting rights and related differences in designation, conversion and share distribution provisions, with the holders of shares of Series B common stock receiving securities of the class or series having the highest relative voting rights and the holders of shares of each other series of common stock receiving securities of the class or series having lesser relative voting rights, and provided further that, if different classes or series of securities are being distributed to holders of Series A common stock and Series C common stock, then such securities shall be distributed either as determined by the board of directors or such that the relative voting rights of the securities of the class or series of securities to be received by the holders of Series A common stock and Series C common stock corresponds, to the extent practicable, to the relative voting rights of each such series of common stock.

Reclassification

The Registrant may not reclassify, subdivide or combine any series of its common stock without reclassifying, subdividing or combining the other series of its common stock, on an equal per share basis.

Liquidation and Dissolution

In the event of the liquidation, dissolution or winding up of the Registrant, after payment or provision for payment of the debts and liabilities of the Registrant and subject to the prior payment in full of any preferential amounts to which the preferred stock holders may be entitled, the holders of Series A common stock, Series B

common stock and Series C common stock will share equally, on a share for share basis, in the Registrant's assets remaining for distribution to the holders of its common stock.

Other Provisions of the Registrant's Certificate of Incorporation

The Registrant's Preferred Stock

The Registrant's charter authorizes its board of directors (the "board") to establish one or more series of preferred stock and to determine, with respect to any series of preferred stock, the terms and rights of the series, including:

- ① the designation of the series;
- ① the number of authorized shares of the series, which number the board may subsequently increase or decrease but not below the number of such shares of such series preferred stock then outstanding;
- ① the dividend rate or amounts, if any, payable on the shares and, in the case of cumulative dividends, the date or dates from which dividends on all shares of the series will be cumulative and the relative preferences or rights of priority or participation with respect to such dividends;
- ① the rights of the series in the event of the Registrant's voluntary or involuntary liquidation, dissolution or winding up and the relative preferences or rights of priority of payment;
- ① the rights, if any, of holders of the series to convert into or exchange for other classes or series of stock or indebtedness and the terms and conditions of any such conversion or exchange, including provision for adjustments within the discretion of the board;
- ① the voting rights, if any, of the holders of the series;
- ① the terms and conditions, if any, for us to purchase or redeem the shares of the series; and
- ① any other relative rights, preferences and limitations of the series.

The Registrant believes that the ability of its board to issue one or more series of its preferred stock will provide it with flexibility in structuring possible future financings and acquisitions, and in meeting other corporate needs that might arise. The authorized shares of preferred stock, as well as shares of common stock, will be available for issuance without further action by stockholders, unless such action is required by applicable law or the rules of any stock exchange or automatic quotation system on which the Registrant's securities may be listed or traded.

Although the Registrant has no intention at the present time of doing so, it could issue a series of preferred stock that could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt. The board will make any determination to issue such shares based upon its judgment as to the best interests of the Registrant's stockholders. The board, in so acting, could issue preferred stock having terms that could discourage an acquisition attempt through which an acquirer may be able to change the composition of the board of directors, including a tender offer or other transaction that some, or a majority, of stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then-current market price of the stock.

Board of Directors

The Registrant's charter provides that, subject to any rights of the holders of any series of preferred stock to elect additional directors, the number of directors will not be less than three and the exact number will be fixed from time to time by a resolution of the board. The members of the board, other than those who may be elected by holders of any then-outstanding preferred stock, will be divided into three classes. Each class will consist, as nearly

as possible, of a number of directors equal to one-third of the then authorized number of board members. As of December 31, 2019, the terms of the Class I, II and III directors who were then in office will expire at the annual meeting of stockholders to be held in 2021, 2022 and 2020, respectively. At each annual meeting of stockholders, the successors of that class of directors whose term expires at that meeting will be elected to hold office for a term expiring at the annual meeting of stockholders to be held in the third year following the year of their election. The directors of each class will hold office until the expiration of the term of such class and their respective successors are elected and qualified or until such director's earlier death, resignation or removal.

The charter provides that, subject to the rights of the holders of any series of preferred stock, directors may be removed from office only for cause upon the affirmative vote of the holders of at least a majority of the aggregate voting power of outstanding capital stock entitled to vote on such matter voting together as a single class.

The charter provides that, subject to the rights of the holders of any series of preferred stock, vacancies on the board resulting from death, resignation, removal, disqualification or other cause, and newly created directorships resulting from any increase in the number of directors on the board, will be filled only by the affirmative vote of a majority of the remaining directors then in office (even though less than a quorum) or by the sole remaining director. Any director so elected shall hold office for the remainder of the full term of the class of directors in which the vacancy occurred or to which the new directorship is assigned, and until that director's successor will have been elected and qualified or until such director's earlier death, resignation or removal. No decrease in the number of directors constituting the Registrant's board will shorten the term of any incumbent director, except as may be provided in any certificate of designation with respect to a series of preferred stock with respect to any additional director elected by the holders of that series of preferred stock.

These provisions would preclude a third party from removing incumbent directors and simultaneously gaining control of the board by filling the vacancies created by removal with its own nominees. Under the classified board provisions described above, it would take at least two elections of directors for any individual or group to gain control of the board. Accordingly, these provisions could discourage a third party from initiating a proxy contest, making a tender offer or otherwise attempting to gain control of the Registrant.

Corporate Opportunity

The charter acknowledges that the Registrant may have overlapping directors and officers with other entities that compete with its businesses and that the Registrant may engage in material business transactions with such entities. The Registrant has renounced its rights to certain business opportunities and the charter provides that no director or officer of the Registrant will breach their fiduciary duty and therefore be liable to the Registrant or its stockholders by reason of the fact that any such individual directs a corporate opportunity to another person or entity (including Qurate Retail, Inc., Liberty Media Corporation or Liberty TripAdvisor Holdings, Inc.) instead of the Registrant, or does not refer or communicate information regarding such corporate opportunity to the Registrant, unless (x) such opportunity was expressly offered to such person solely in his or her capacity as a director or officer of the Registrant or as a director or officer of any of the Registrant's subsidiaries, and (y) such opportunity relates to a line of business in which the Registrant or any of its subsidiaries is then directly engaged.

Limitation on Liability and Indemnification

To the fullest extent permitted by Delaware law, the Registrant's directors are not liable to the Registrant or any of its stockholders for monetary damages for breaches of fiduciary duties as a director. In addition, the Registrant indemnifies, to the fullest extent permitted by applicable law, any person involved in any suit or action by reason of the fact that such person is a director or officer of the company or, at the Registrant's request, a director, officer, employee or agent of another corporation or entity, against all liability, loss and expenses incurred by such person. The Registrant will pay expenses of a director or officer in defending any proceeding in advance of its final disposition, provided that such payment is made upon receipt of an undertaking by the director or officer to repay all amounts advanced if it should be ultimately determined that the director or officer is not entitled to indemnification.

No Stockholder Action by Written Consent; Special Meetings

The Registrant's charter provides that, except as provided in the terms of any series of preferred stock, any action required to be taken or which may be taken at any annual or special meeting of the stockholders may not be taken without a meeting and may not be effected by any consent in writing by such holders. Except as otherwise required by law and subject to the rights of the holders of any series of preferred stock, special meetings of stockholders for any purpose or purposes may be called only by the Secretary (i) upon the written request of the holders of not less than 66 2/3% of the total voting power of the then outstanding shares of the Series A common stock, Series B common stock and, if applicable, the preferred stock, entitled to vote thereon or (ii) at the request of at least 75% of the members of the board of directors then in office.

Amendments

The Registrant's charter provides that, subject to the rights of the holders of any series of preferred stock, the affirmative vote of the holders of at least 66 2/3% of the aggregate voting power of the outstanding capital stock entitled to vote on such matter, voting together as a single class, is required to adopt, amend or repeal any provision of the charter or to add or insert any provision in the charter, provided that the foregoing enhanced voting requirement will not apply to any adoption, amendment, repeal, addition or insertion (1) as to which Delaware law does not require the consent of stockholders or (2) which has been approved by at least 75% of the members of the board then in office. The Registrant's charter further provides that the affirmative vote of the holders of at least 66 2/3% of the aggregate voting power of the outstanding capital stock entitled to vote on such matter, voting together as a single class, is required to adopt, amend or repeal any provision of the bylaws, provided that the board of directors may adopt, amend or repeal the bylaws by the affirmative vote of not less than 75% of the members of the board then in office.

Supermajority Voting Provisions

In addition to the supermajority voting provisions discussed under "—Amendments" above, the Registrant's charter provides that, subject to the rights of the holders of any series of preferred stock, the affirmative vote of the holders of at least 66 2/3% of the aggregate voting power of the outstanding capital stock entitled to vote on such matter, voting together as a single class, is required for:

- Ⓢ the merger or consolidation of the Registrant with or into any other corporation, provided, that the foregoing voting provision will not apply to any such merger or consolidation (1) as to which the laws of the State of Delaware, as then in effect, do not require the consent of the Registrant's stockholders, or (2) that at least 75% of the members of the board then in office have approved;
- Ⓢ the sale, lease or exchange of all, or substantially all, of the Registrant's assets, provided, that the foregoing voting provisions will not apply to any such sale, lease or exchange that at least 75% of the members of the board then in office have approved; or
- Ⓢ the Registrant's dissolution, provided, that the foregoing voting provision will not apply to such dissolution if at least 75% of the members of the board then in office have approved such dissolution.

Section 203 of the Delaware General Corporation Law

Section 203 of the DGCL prohibits certain transactions between a Delaware corporation and an "interested stockholder." An "interested stockholder" for this purpose generally is a stockholder who is directly or indirectly a beneficial owner of 15% or more of the outstanding voting power of a Delaware corporation. This provision prohibits certain business combinations between an interested stockholder including certain related persons and a corporation for a period of three years after the date on which the stockholder became an interested stockholder, unless: (1) prior to the time that a stockholder became an interested stockholder, either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder is approved by the corporation's board of directors, (2) the interested stockholder acquired at least 85% of the voting power of the corporation in the transaction in which the stockholder became an interested stockholder, or (3) the business

combination is approved by a majority of the board and the affirmative vote of the holders of 66 2/3% of the outstanding voting power of the shares not owned by the interested stockholder at or subsequent to the time that the stockholder became an interested stockholder. The Registrant is subject to Section 203.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS NONQUALIFIED STOCK OPTION AGREEMENT (this “Agreement”) is made as of the date set forth on Schedule I hereto (the “Grant Date”), by and between the issuer identified in Schedule I hereto (the “Company”), and the recipient (the “Grantee”) of an Award of Options granted by the Plan Administrator (as defined in Schedule I hereto) as set forth in this Agreement.

The Company has adopted the incentive plan identified on Schedule I hereto (as has been or may hereafter be amended, the “Plan”), a copy of which is attached via a link at the end of this online Agreement as Exhibit A and by this reference made a part hereof, for the benefit of eligible persons as specified in the Plan. Capitalized terms used and not otherwise defined in this Agreement will have the meanings ascribed to them in the Plan.

Pursuant to the Plan, the Plan Administrator has determined that it would be in the interest of the Company and its stockholders to award Options to the Grantee, subject to the conditions and restrictions set forth herein and in the Plan, in order to provide the Grantee with additional remuneration for services rendered, to encourage the Grantee to remain in the service or employ of the Company or its Subsidiaries and to increase the Grantee’s personal interest in the continued success and progress of the Company.

The Company and the Grantee therefore agree as follows:

1. Definitions. The following terms, when used in this Agreement, have the following meanings:

“Base Price” means , with respect to each type of Common Stock for which Options are granted hereunder, the amount set forth on Schedule I hereto as the Base Price for such Common Stock, which is the Fair Market Value of a share of such Common Stock on the Grant Date.

“Business Day” means any day other than Saturday, Sunday or a day on which banking institutions in Denver, Colorado, are required or authorized to be closed.

“Cause” has the meaning specified as “cause” in Section 10.2(b) of the Plan.

“Close of Business” means, on any day, 5:00 p.m., Denver, Colorado time.

“Common Stock” has the meaning specified in Schedule I hereto.

“Company” has the meaning specified in the preamble to this Agreement.

“Grant Date” has the meaning specified in the preamble to this Agreement.

“Grantee” has the meaning specified in the preamble to this Agreement.

“Nonemployee Director” has the meaning specified in the Plan.

“Options” has the meaning specified in Section 2.

“Option Share” has the meaning specified in Section 4(c)(i).

“Option Termination Date” has the meaning specified in Schedule I hereto.

“Plan” has the meaning specified in the recitals of this Agreement.

“Plan Administrator” has the meaning specified in Schedule I hereto.

“Required Withholding Amount” has the meaning specified in Section 5.

“Section 409A” has the meaning specified in Section 21.

“Term” has the meaning specified in Section 2.

“Unvested Fractional Option” has the meaning specified in Section 3(b).

“Vesting Date” has the meaning specified in Section 3(a).

“Vesting Percentage” has the meaning specified in Section 3(a).

2. Award. Pursuant to the terms of the Plan and in consideration of the covenants and promises of the Grantee herein contained, the Company hereby awards to the Grantee as of the Grant Date nonqualified stock options to purchase from the Company at the applicable Base Price the number and type of shares of Common Stock authorized by the Plan Administrator and set forth in the notice of online grant delivered to the Grantee pursuant to the Company’s online grant and administration program, subject to the conditions and restrictions set forth in this Agreement and in the Plan (the “Options”). The Options are exercisable as set forth in Section 3 during the period commencing on the Grant Date and expiring at the Close of Business on the Option Termination Date (the “Term”), subject to earlier termination as provided in Section 7 below. However, if the Term expires when trading in the Common Stock is prohibited by law or the Company’s insider trading policy, then the Term shall expire on the 30th day after the expiration of such prohibition.

3. Conditions of Exercise. Unless otherwise determined by the Plan Administrator in its sole discretion, the Options will be exercisable only in accordance with the conditions stated in this Section 3.

(a) Except as otherwise provided in Section 10.1(b) of the Plan, the Options may be exercised only to the extent they have become exercisable in accordance with the provisions of this Section 3(a) or Section 3(b), and subject to the provisions of Section 3(c). That number of each type of Options that is equal to the fraction or percentage specified on Schedule I hereto (the “Vesting Percentage”) of the total number of such type of Options that are subject to this Agreement, in each case rounded down to the nearest whole number of such type of Options, shall become exercisable on each of the dates specified on Schedule I hereto (each such date, together with any other date on which Options vest pursuant to this Agreement, a “Vesting Date”).

(b) If rounding pursuant to Section 3(a) prevents any portion of an Option from becoming exercisable on a particular Vesting Date (any such portion, an “Unvested Fractional Option”), one additional Option to purchase a share of the type of Common Stock covered by such Option will become exercisable on the earliest succeeding Vesting Date on which the cumulative fractional amount of all Unvested Fractional Options to purchase shares of such type of Common Stock (including any Unvested Fractional Option created on such succeeding Vesting Date) equals or exceeds one whole Option, with any excess treated as an Unvested Fractional Option thereafter subject to the application of this Section 3(b). Any Unvested Fractional Option comprising part of a whole Option that vests pursuant to the preceding sentence will thereafter cease to be an Unvested Fractional Option.

(c) Notwithstanding the foregoing, (i) in the event that any date on which Options would otherwise become exercisable is not a Business Day, such Options will become exercisable on the first Business Day following such date, (ii) all Options will become exercisable on the date of the Grantee’s termination of employment or service (including service as a Nonemployee Director) if (A) the Grantee’s employment with, or service to, the Company or a Subsidiary (including service as a Nonemployee Director) terminates by reason of Disability or (B) the Grantee dies while employed by, or providing services to, the Company or a Subsidiary (including service as a Nonemployee Director) and (iii) if the Grantee’s employment with, or service to, the Company or a Subsidiary is terminated by the Company or such Subsidiary without Cause, any unvested Options will become exercisable to the extent, if any, indicated on Schedule I.

(d) To the extent the Options become exercisable, such Options may be exercised in whole or in part (at any time or from time to time, except as otherwise provided herein) until expiration of the Term or earlier termination thereof.

(e) The Grantee acknowledges and agrees that the Plan Administrator, in its discretion and as contemplated by Section 3.3 of the Plan, may adopt rules and regulations from time to time after the date hereof with respect to the exercise of the Options and that the exercise by the Grantee of Options will be subject to the further condition that such exercise is made in accordance with all such rules and regulations as the Plan Administrator may determine are applicable thereto.

4. Manner of Exercise. Options will be considered exercised (as to the number and type of Options specified in the notice referred to in Section 4(c)(i)) on the latest of (a) the date of exercise designated in the written notice referred to in Section 4(c)(i), (b) if the date so designated is not a Business Day, the first Business Day following such date or (c) the earliest Business Day by which the Company has received all of the following:

(i) Written notice, in such form as the Plan Administrator may require, containing such representations and warranties as the Plan Administrator may require and designating, among other things, the date of exercise and the number and type of shares of Common Stock to be purchased by exercise of Options (each, an “Option Share”);

(ii) Payment of the applicable Base Price for each Option Share in any (or a combination) of the following forms: (A) cash, (B) check, (C) the delivery, together with a properly executed exercise notice, of irrevocable instructions to a broker to deliver promptly to the Company the amount of sale or loan proceeds required to pay such Base Price (and, if applicable, the Required Withholding Amount as described in Section 5) or (D) at the option of the Company, the delivery of irrevocable instructions via the Company's online grant and administration program for the Company to withhold the number of shares of Common Stock (valued at the Fair Market Value of such Common Stock on the date of exercise) required to pay such Base Price (and, if applicable, the Required Withholding Amount as described in Section 5) that would otherwise be delivered by the Company to the Grantee upon exercise of the Options; and

(iii) Any other documentation that the Plan Administrator may reasonably require.

5. Mandatory Withholding for Taxes. The Grantee acknowledges and agrees that the Company will deduct from the shares of Common Stock otherwise payable or deliverable upon exercise of any Options that number of shares of the applicable Common Stock (valued at the Fair Market Value of such Common Stock on the date of exercise) that is equal to the amount of all national, federal, state and other governmental taxes required to be withheld by the Company or any Subsidiary of the Company upon such exercise, as determined by the Company (the "Required Withholding Amount"), unless provisions to pay such Required Withholding Amount have been made to the satisfaction of the Company. If the Grantee elects to make payment of the applicable Base Price by delivery of irrevocable instructions to a broker to deliver promptly to the Company the amount of sale or loan proceeds required to pay such Base Price, such instructions may also include instructions to deliver the Required Withholding Amount to the Company. In such case, the Company will notify the broker promptly of its determination of the Required Withholding Amount.

6. Payment or Delivery by the Company. As soon as practicable after receipt of all items referred to in Section 4, and subject to the withholding referred to in Section 5, the Company will deliver or cause to be delivered to the Grantee certificates issued in the Grantee's name for, or cause to be transferred to a brokerage account through Depository Trust Company for the benefit of the Grantee, the number of shares of Common Stock purchased by exercise of Options. Any delivery of shares of Common Stock will be deemed effected for all purposes when certificates representing such shares have been delivered personally to the Grantee or, if delivery is by mail, when the stock transfer agent of the Company has deposited the certificates in the United States mail, addressed to the Grantee or at the time the stock transfer agent initiates transfer of shares to a brokerage account through Depository Trust Company for the benefit of the Grantee, if applicable.

7. Early Termination of Options. Subject to any longer period of exercisability specified in Schedule I hereto, the Options will terminate, prior to the expiration of the Term, at the time specified below:

(a) Subject to Section 7(b), if the Grantee's employment with, or service to, the Company or a Subsidiary (including service as a Nonemployee Director) is

terminated, in each case other than (i) by the Company or such Subsidiary for Cause, or (ii) by reason of death or Disability, then the Options will terminate at the Close of Business on the first Business Day following the expiration of the 90-day period that began on the date of termination of the Grantee's employment, or, in the case of a Nonemployee Director, at the Close of Business on the first Business Day following the expiration of the one-year period that began on the date of termination of the Grantee's service as a Nonemployee Director.

(b) If the Grantee dies while employed by, or providing services to, the Company or a Subsidiary (including service as a Nonemployee Director), or prior to the expiration of a period of time following termination of the Grantee's employment or service during which the Options remain exercisable as provided in Section 7(a) or Section 7(c), as applicable, the Options will terminate at the Close of Business on the first Business Day following the expiration of the one-year period that began on the date of the Grantee's death .

(c) Subject to Section 7(b), if the Grantee's employment with, or service to, the Company or a Subsidiary (including service as a Nonemployee Director) terminates by reason of Disability, then the Options will terminate at the Close of Business on the first Business Day following the expiration of the one-year period that began on the date of termination of the Grantee's employment or service.

(d) If the Grantee's employment with, or service to, the Company or a Subsidiary (including service as a Nonemployee Director) is terminated by the Company or such Subsidiary for Cause, then the Options will terminate immediately upon such termination of the Grantee's employment or service.

In any event in which Options remain exercisable for a period of time following the date of termination of the Grantee's employment or service as provided above or on Schedule I, the Options may be exercised during such period of time only to the extent the same were exercisable as provided in Section 3 effective as of such date of termination of the Grantee's employment or service. Notwithstanding any period of time referenced in this Section 7 or any other provision of this Section 7 that may be construed to the contrary, the Options will in any event terminate upon the expiration of the Term.

Unless the Plan Administrator otherwise determines, a change of the Grantee's employment from the Company to a Subsidiary or from a Subsidiary to the Company or another Subsidiary will not be considered a termination of the Grantee's employment for purposes of this Agreement if such change of employment is made at the request or with the express consent of the Company. Unless the Plan Administrator otherwise determines, however, any such change of employment that is not made at the request or with the express consent of the Company will be a termination of the Grantee's employment within the meaning of this Agreement.

8. Nontransferability. Options are not transferable (either voluntarily or involuntarily), before or after the Grantee's death, except as follows: (a) during Grantee's lifetime, pursuant to a Domestic Relations Order, issued by a court of competent jurisdiction, that is not contrary to the terms and conditions of the Plan or this Agreement, and in a form acceptable to the Plan Administrator; or (b) after the Grantee's death, by will or pursuant to the applicable laws of descent and distribution, as may be the case. Any person to whom Options are transferred in

accordance with the provisions of the preceding sentence shall take such Options subject to all of the terms and conditions of the Plan and this Agreement, including that the vesting and termination provisions of this Agreement will continue to be applied with respect to the Grantee. Options are exercisable only by the Grantee (or, during the Grantee's lifetime, by the Grantee's court appointed legal representative) or a person to whom the Options have been transferred in accordance with this Section.

9. No Stockholder Rights. Prior to the exercise of Options in accordance with the terms and conditions set forth in this Agreement, the Grantee will not be deemed for any purpose to be, or to have any of the rights of, a stockholder of the Company with respect to any shares of Common Stock represented by the Options, nor will the existence of this Agreement affect in any way the right or power of the Company or its stockholders to accomplish any corporate act, including, without limitation, the acts referred to in Section 10.16 of the Plan.

10. Adjustments.

(a) The Options will be subject to adjustment (including, without limitation, as to the Base Price) in such manner as the Plan Administrator, in its sole discretion, deems equitable and appropriate in connection with the occurrence of any of the events described in Section 4.2 of the Plan following the Grant Date.

(b) In the event of any Approved Transaction, Board Change or Control Purchase following the Grant Date, the Options may become exercisable in accordance with Section 10.1(b) of the Plan.

11. Restrictions Imposed by Law. Without limiting the generality of Section 10.8 of the Plan, the Grantee will not exercise the Options, and the Company will not be obligated to make any cash payment or issue or cause to be issued any shares of Common Stock, if counsel to the Company determines that such exercise, payment or issuance would violate any applicable law or any rule or regulation of any governmental authority or any rule or regulation of, or agreement of the Company with, any securities exchange or association upon which shares of Common Stock are listed or quoted. The Company will in no event be obligated to take any affirmative action in order to cause the exercise of the Options or the resulting payment of cash or issuance of shares of Common Stock to comply with any such law, rule, regulation or agreement.

12. Notice. Unless the Company notifies the Grantee in writing of a different procedure or address, any notice or other communication to the Company with respect to this Agreement will be in writing and will be delivered personally or sent by first class mail, postage prepaid, to the address specified for the Company in Schedule I hereto. Unless the Company elects to notify the Grantee electronically pursuant to the online grant and administration program or via email, any notice or other communication to the Grantee with respect to this Agreement will be in writing and will be delivered personally, or will be sent by first class mail, postage prepaid, to the Grantee's address as listed in the records of the Company or any Subsidiary of the Company on the Grant Date, unless the Company has received written notification from the Grantee of a change of address.

13. Amendment. Notwithstanding any other provision hereof, this Agreement may be supplemented or amended from time to time as approved by the Plan Administrator as

contemplated by Section 10.7(b) of the Plan. Without limiting the generality of the foregoing, without the consent of the Grantee:

(a) this Agreement may be amended or supplemented from time to time as approved by the Plan Administrator (i) to cure any ambiguity or to correct or supplement any provision herein that may be defective or inconsistent with any other provision herein, (ii) to add to the covenants and agreements of the Company for the benefit of the Grantee or surrender any right or power reserved to or conferred upon the Company in this Agreement, subject to any required approval of the Company's stockholders, and provided, in each case, that such changes or corrections will not adversely affect the rights of the Grantee with respect to the Award evidenced hereby or (iii) to make such other changes as the Company, upon advice of counsel, determines are necessary or advisable because of the adoption or promulgation of, or change in the interpretation of, any law or governmental rule or regulation, including any applicable federal or state securities laws; and

(b) subject to any required action by the Board of Directors or the stockholders of the Company, the Options granted under this Agreement may be canceled by the Plan Administrator and a new Award made in substitution therefor, provided that the Award so substituted will satisfy all of the requirements of the Plan as of the date such new Award is made and no such action will adversely affect any Options to the extent then exercisable.

14. Grantee Employment or Status as a Nonemployee Director. Nothing contained in the Plan or this Agreement, and no action of the Company or the Plan Administrator with respect thereto, will confer or be construed to confer on the Grantee any right to continue in the employ or service of the Company or any Subsidiary or as a Nonemployee Director or interfere in any way with the right of the Company or any employing Subsidiary (or the Company's stockholders in the case of a Nonemployee Director) to terminate the Grantee's employment or service, as applicable, at any time, with or without Cause, subject to the provisions of any employment or consulting agreement between the Grantee and the Company or any Subsidiary, or in the case of a Nonemployee Director, to the charter and bylaws of the Company, as the same may be in effect from time to time.

15. Nonalienation of Benefits. Except as provided in Section 8, (a) no right or benefit under this Agreement will be subject to anticipation, alienation, sale, assignment, hypothecation, pledge, exchange, transfer, encumbrance or charge, and any attempt to anticipate, alienate, sell, assign, hypothecate, pledge, exchange, transfer, encumber or charge the same will be void, and (b) no right or benefit hereunder will in any manner be subjected to or liable for the debts, contracts, liabilities or torts of the Grantee or other person entitled to such benefits.

16. Governing Law. This Agreement will be governed by, and construed in accordance with, the internal laws of the State of Delaware. Each party irrevocably submits to the general jurisdiction of the state and federal courts located in the State of Colorado and in the State of Delaware in any action to interpret or enforce this Agreement and irrevocably waives any objection to jurisdiction that such party may have based on inconvenience of forum.

17. Construction. References in this Agreement to "this Agreement" and the words "herein," "hereof," "hereunder" and similar terms include all Exhibits and Schedules appended

hereto, including the Plan. All references to “Sections” in this Agreement shall be to Sections of this Agreement unless explicitly stated otherwise. The word “include” and all variations thereof are used in an illustrative sense and not in a limiting sense. All decisions of the Plan Administrator upon questions regarding the Plan or this Agreement will be conclusive. Unless otherwise expressly stated herein, in the event of any inconsistency between the terms of the Plan and this Agreement, the terms of the Plan will control. The headings of the sections of this Agreement have been included for convenience of reference only, are not to be considered a part hereof and will in no way modify or restrict any of the terms or provisions hereof.

18. Rules by Plan Administrator. The rights of the Grantee and the obligations of the Company hereunder will be subject to such reasonable rules and regulations as the Plan Administrator may adopt from time to time.

19. Entire Agreement. This Agreement is in satisfaction of and in lieu of all prior discussions and agreements, oral or written, between the Company and the Grantee regarding the subject matter hereof. The Grantee and the Company hereby declare and represent that no promise or agreement not herein expressed has been made and that this Agreement contains the entire agreement between the parties hereto with respect to the Award and replaces and makes null and void any prior agreements between the Grantee and the Company regarding the Award. Subject to the restrictions set forth in Sections 8 and 15, this Agreement will be binding upon and inure to the benefit of the parties and their respective heirs, successors and assigns.

20. Grantee Acknowledgment. The Grantee will signify acceptance of the terms and conditions of this Agreement by acknowledging the acceptance of this Agreement via the procedures described in the online grant and administration program utilized by the Company.

21. Code Section 409A. To the extent that Section 409A of the Code or the related regulations and Treasury pronouncements (“Section 409A”) are applicable to the Grantee in connection with the Award, this Award is subject to the provisions of Section 10.17 of the Plan regarding Section 409A.

22. Administrative Blackouts. In addition to its other powers under the Plan, the Plan Administrator has the authority to suspend (i) the exercise of Options and (ii) any other transactions under the Plan as it deems necessary or appropriate for administrative reasons.

23. Stock Ownership Guidelines. This Award may be subject to any applicable stock ownership guidelines adopted by the Company, as amended or superseded from time to time.

**Schedule I
to Liberty Broadband Corporation
Nonqualified Stock Option Agreement**

Grant Date: [●], 20[●]

Issuer/Company: Liberty Broadband Corporation, a Delaware corporation

Plan: Liberty Broadband Corporation 2019 Omnibus Incentive Plan, as the same may be amended from time to time

Plan Administrator: The Compensation Committee of the Board of Directors of the Company appointed by the Board of Directors of the Company pursuant to Section 3.1 of the Plan to administer the Plan

Common Stock: The Company's Series [●] Common Stock

Option Termination Date: [●], 20[●]

Base Price: LBRD[●] Common Stock: \$[●]

Vesting Dates and Percentages:	Vesting Date	Vesting Percentage
	[●], 20[●] [●], 20[●]	[●]% [●]%

Additional Vesting Terms Upon Termination Without Cause: If the Grantee's employment with, or service to, the Company or a Subsidiary is terminated by the Company or such Subsidiary without Cause prior to [●], 20[●], certain Options will become exercisable effective as of the date of termination of the Grantee's employment with, or service to, the Company or a Subsidiary (the "**Termination Date**") if the Release Conditions (as defined below) are met. The Grantee acknowledges that while certain Options will retroactively vest effective as of the Termination Date if the Release Conditions are met, the Grantee will nonetheless not be able to exercise any such Options unless and until such conditions are met.

"Release Conditions" means satisfaction of the following conditions: (1) not later than 60 days following the Termination Date the Grantee has executed and delivered to the Company in accordance with the notice requirements of this Agreement, a general release agreement in a form satisfactory to the Company and (2) not later than 60 days following the Termination Date such release has become irrevocable in accordance with its terms.

The Options that become vested on each of the Vesting Dates specified above on this Schedule I are referred to as individual "Tranches." If the Release Conditions are met, then a pro rata portion of each Tranche of Options that is not fully vested on the Termination Date will vest effective as of the Termination Date, such pro rata portion with respect to each such Tranche of Options to be equal to the product of "A" multiplied by "B," where "A" equals the number of Options in such Tranche that are not vested on the Termination Date, and "B" is a fraction, the numerator of which is the number of calendar days that have elapsed from the Grant Date through the Termination Date plus (i) an additional 270 calendar days if the Grantee is an Assistant Vice President or Vice President of the Company or a Subsidiary, Liberty Media Corporation or Qurate Retail, Inc. on the Termination Date or (ii) an additional 365 calendar days if the Grantee is a Senior Vice President, Executive Vice President or Chief of the Company or a Subsidiary, Liberty Media Corporation or Qurate Retail, Inc. on the Termination Date, and the denominator of which is the number of days in the entire vesting period for such Tranche (in no event to exceed the total number of unvested Options in such Tranche as of the Termination Date). For purposes of this Agreement, the vesting period for each Tranche of Options is the period that begins on the Grant Date and ends on the Vesting Date for such Tranche.

Additional Exercisability
Terms:

Section 7 of the Option Agreement is amended as follows:

1. If the Release Conditions (as defined in Schedule I hereto) are met, the following sentence is added to the end of Section 7(b):

If the Grantee dies prior to the expiration of a period of time following termination of the Grantee's employment or service during which the Options remain exercisable as provided in Section 7(e), the Options will terminate at the Close of Business on the first Business Day following the later of the expiration of (i) the one-year period that began on the date of the Grantee's death or (ii) the Special Termination Period (as defined in Section 7(e)).

2. If the Release Conditions are met, the following provisions are added as Section 7(e):

Subject to Section 7(b), if the Grantee's employment or service with the Company or a Subsidiary is terminated by the Company or such Subsidiary without Cause, the Options will terminate at the Close of Business on the first Business Day following the expiration of the Special Termination Period. The Special Termination Period is the period of time beginning on the Termination Date and continuing for the

number of days that is equal to the sum of (i) 90, plus (ii) 180 multiplied by the Grantee's total Years of Continuous Service. A Year of Continuous Service means a consecutive 12-month period, measured by the Grantee's hire date (as reflected in the payroll records of Liberty Media Corporation) and the anniversaries of that date, during which the Grantee is employed by Liberty Media Corporation or a Subsidiary.

Additional Provisions
Applicable to Grantees who
as of the Grant Date hold the
office of Assistant Vice
President or above of the
Company or of Liberty Media
Corporation:

Forfeiture for Misconduct and Repayment of Certain Amounts. If (i) a material restatement of any financial statement of the Company (including any consolidated financial statement of the Company and its consolidated Subsidiaries) is required and (ii) in the reasonable judgment of the Plan Administrator, (A) such restatement is due to material noncompliance with any financial reporting requirement under applicable securities laws and (B) such noncompliance is a result of misconduct on the part of the Grantee, the Grantee will repay to the Company Forfeitable Benefits received by the Grantee during the Misstatement Period in such amount as the Plan Administrator may reasonably determine, taking into account, in addition to any other factors deemed relevant by the Plan Administrator, the extent to which the market value of Common Stock during the Misstatement Period was affected by the error(s) giving rise to the need for such restatement. "Forfeitable Benefits" means (i) any and all cash and/or shares of Common Stock received by the Grantee (A) upon the exercise during the Misstatement Period of any SARs held by the Grantee or (B) upon the payment during the Misstatement Period of any Cash Award or Performance Award held by the Grantee, the value of which is determined in whole or in part with reference to the value of Common Stock, and (ii) any proceeds received by the Grantee from the sale, exchange, transfer or other disposition during the Misstatement Period of any shares of Common Stock received by the Grantee upon the exercise, vesting or payment during the Misstatement Period of any Award held by the Grantee. By way of clarification, "Forfeitable Benefits" will not include any shares of Common Stock received upon exercise of any Options during the Misstatement Period that are not sold, exchanged, transferred or otherwise disposed of during the Misstatement Period. "Misstatement Period" means the 12-month period beginning on the date of the first public issuance or the filing with the Securities and Exchange Commission, whichever occurs earlier, of the financial statement requiring restatement.

Qualifying Service:

Unless the Plan Administrator in its sole discretion determines otherwise in connection with the commencement of employment or service with Liberty Media Corporation, Qurate Retail, Inc. or any entity that is a Subsidiary of either of them, notwithstanding anything to the contrary in this Agreement, Grantee's employment or service

with Liberty Media Corporation, Qurate Retail, Inc. or any entity that is a Subsidiary of either of them at the time of determination shall be deemed to be employment or service with the Company for all purposes under the Awards granted pursuant to this Agreement.

Other Clawback Policies: Notwithstanding any other provisions in the Plan, this Award shall be subject to recovery or clawback by the Company under any clawback policy adopted by the Company in accordance with SEC regulations or other applicable law, as amended or superseded from time to time.

Company Notice Address: Liberty Broadband Corporation
12300 Liberty Boulevard
Englewood, Colorado 80112
Attn: [●]

PERFORMANCE-BASED RESTRICTED STOCK UNITS AGREEMENT

THIS PERFORMANCE-BASED RESTRICTED STOCK UNITS AGREEMENT (this “Agreement”) is made as of the date set forth on Schedule I hereto (the “Grant Date”), by and between the issuer identified in Schedule I of this Agreement (the “Company”), and the recipient (the “Grantee”) of an Award of Restricted Stock Units (as defined below) granted by the Compensation Committee of the Board of Directors of the Company as set forth in this Agreement.

The Company has adopted the incentive plan identified on Schedule I hereto (as has been or may hereafter be amended, the “Plan”), a copy of which is attached via a link at the end of this online Agreement as Exhibit A and by this reference made a part hereof, for the benefit of eligible persons as specified in the Plan. Capitalized terms used and not otherwise defined in this Agreement will have the meanings ascribed to them in the Plan.

Pursuant to the Plan, the Compensation Committee appointed by the Board of Directors of the Company pursuant to Section 3.1 of the Plan to administer the Plan (the “Committee”) has determined that it would be in the interest of the Company and its stockholders to award Restricted Stock Units to the Grantee, subject to the conditions and restrictions set forth herein and in the Plan, in order to provide the Grantee with additional remuneration for services rendered, to encourage the Grantee to remain in the service or employ of the Company or its Subsidiaries and to increase the Grantee’s personal interest in the continued success and progress of the Company.

The Company and the Grantee therefore agree as follows:

1. **Definitions.** The following terms, when used in this Agreement, have the following meanings:

“Cause” has the meaning specified as “cause” in Section 10.2(b) of the Plan.

“Close of Business” means, on any day, 5:00 p.m., Denver, Colorado time.

“Committee” has the meaning specified in the recitals to this Agreement.

“Committee Certification Date” has the meaning specified in Section 5(b).

“Common Stock” has the meaning specified in Schedule I of this Agreement.

“Company” has the meaning specified in the preamble to this Agreement.

“Grant Date” has the meaning specified in the preamble to this Agreement.

“Grantee” has the meaning specified in the preamble to this Agreement.

“Plan” has the meaning specified in the recitals of this Agreement.

“Required Withholding Amount” has the meaning specified in Section 12 .

“Restricted Stock Units” has the meaning specified in Section 2 .

“RSU Dividend Equivalents” means, to the extent specified by the Committee only, an amount equal to all dividends and other distributions (or the economic equivalent thereof) which are payable to stockholders of record during the Restriction Period on a like number and kind of shares of Common Stock as the shares represented by the Restricted Stock Units.

“Section 409A” has the meaning specified in Section 22.

“Unpaid RSU Dividend Equivalents” has the meaning specified in Section 5(c).

“Vested RSU Dividend Equivalents” has the meaning specified in Section 4.

“Vesting Date” means each date on which any Restricted Stock Units cease to be subject to a risk of forfeiture, as determined in accordance with this Agreement and the Plan.

2. **Award.** Subject to the terms and conditions herein, pursuant to the Plan, the Company grants to the Grantee effective as of the Grant Date an Award of the number and type of performance-based Restricted Stock Units (as defined in the Plan) authorized by the Committee and set forth in the notice of online grant delivered to the Grantee pursuant to the Company’s online grant and administration program (the “Restricted Stock Units”), each representing the right to receive one share of the type of Common Stock specified in such notice of online grant, subject to the conditions and restrictions set forth below in this Agreement and in the Plan.

3. **Settlement of Restricted Stock Units.** Settlement of Restricted Stock Units that vest in accordance with Section 5 or 6 of this Agreement or Section 10.1(b) of the Plan shall be made as soon as administratively practicable after the applicable Vesting Date, but in no event later than March 15 of the calendar year following the calendar year in which such Vesting Date occurs. Settlement of vested Restricted Stock Units shall be made in payment of shares of the applicable type of Common Stock, together with any related Unpaid RSU Dividend Equivalents, in accordance with Section 7 hereof.

4. **No Stockholder Rights; RSU Dividend Equivalents.** The Grantee shall have no rights of a stockholder with respect to any shares of Common Stock represented by any Restricted Stock Units unless and until such time as shares of Common Stock represented by vested Restricted Stock Units have been delivered to the Grantee in accordance with Section 7 hereof. The Grantee will have no right to receive, or otherwise with respect to, any RSU Dividend Equivalents until such time, if ever, as (a) the Restricted Stock Units with respect to which such RSU Dividend Equivalents relate shall have become vested, or (b) such RSU Dividend Equivalents shall have become vested in accordance with the penultimate sentence of this Section 4, and, if vesting does not occur, the related RSU Dividend Equivalents will be forfeited. RSU Dividend Equivalents shall not bear interest or be segregated in a separate account. Notwithstanding the foregoing, the Committee may, in its sole discretion, accelerate the vesting of any portion of the RSU Dividend Equivalents (the “Vested RSU Dividend Equivalents”). The settlement of any Vested RSU Dividend Equivalents shall be made as soon as administratively practicable after the accelerated vesting date, but in no event later than March 15 of the calendar year following the year in which such accelerated vesting date occurs.

5. Vesting.

(a) Unless the Committee otherwise determines in its sole discretion, subject to earlier vesting in accordance with Section 6 of this Agreement or Section 10.1(b) of the Plan, Restricted Stock Units will vest, in whole or in part, only in accordance with this Section 5.

(b) After December 31, 20[●] but prior to March 15, 20[●], (i) the Committee will certify the number and type of Restricted Stock Units that will vest (the date as of which such certification is made, the "Committee Certification Date") based on the Committee's assessment in its sole discretion (after input from the Company's Chief Executive Officer) of the Grantee's satisfaction of such discretionary performance objectives for calendar year 20[●] as may be deemed relevant by the Committee, including the Committee's exercise of any negative discretion, and (ii) the Committee will specify the Vesting Date of such Restricted Stock Units, which Vesting Date will be not later than March 15, 20[●].

(c) Upon the satisfaction of any other applicable restrictions, terms and conditions of the Plan and this Agreement, any RSU Dividend Equivalents with respect to the Restricted Stock Units that have not theretofore become Vested RSU Dividend Equivalents ("Unpaid RSU Dividend Equivalents") will become vested to the extent that the Restricted Stock Units related thereto shall have become vested in accordance with this Agreement.

(d) Any Restricted Stock Units that do not vest pursuant to Section 5(b) will automatically be forfeited as of the Close of Business on the Committee Certification Date, together with any related Unpaid Dividend Equivalents.

(e) Notwithstanding the foregoing, the Grantee will not vest, pursuant to this Section 5, in Restricted Stock Units or related Unpaid RSU Dividend Equivalents in which the Grantee would otherwise vest as of a given date if the Grantee has not been continuously employed by or providing services to the Company or its Subsidiaries from the Grant Date through such date (the vesting or forfeiture of such Restricted Stock Units and related Unpaid RSU Dividend Equivalents to be governed instead by Section 6 hereof).

6. Early Vesting or Forfeiture.

(a) Unless otherwise determined by the Committee in its sole discretion and except as otherwise provided on Schedule I hereto:

i. If the Grantee's employment or service with the Company or a Subsidiary terminates prior to the Committee Certification Date for any reason other than the Grantee's death or Disability or a termination of the Grantee by the Company without Cause on or after December 31, 20[●], the Restricted Stock Units, to the extent not theretofore vested, and any related Unpaid RSU Dividend Equivalents, will be forfeited immediately; and

ii. If the Grantee's employment or service with the Company or a Subsidiary terminates prior to the Committee Certification Date by reason of the Grantee's death or Disability, the Restricted Stock Units, to the extent not theretofore vested, and any related Unpaid RSU Dividend Equivalents, will immediately become fully vested; and

iii. If the Grantee remains employed or continues providing services to the Company or a Subsidiary until December 31, 20[●], and the Grantee's employment or service, as applicable, is then terminated by the Company without cause on or after December 31, 20[●], but prior to the Committee Certification Date, the Restricted Stock Units and the related Unpaid Dividend Equivalents will remain outstanding until the Committee Certification Date and will thereafter vest in accordance with Section 5 to the extent the Committee certifies they have vested in accordance with such Section.

(b) Upon forfeiture of any unvested Restricted Stock Units, and any related Unpaid RSU Dividend Equivalents, including pursuant to Section 3 and this Section 6, such Restricted Stock Units and any related Unpaid RSU Dividend Equivalents will be immediately cancelled, and the Grantee will cease to have any rights with respect thereto.

(c) Unless the Committee otherwise determines, a change of the Grantee's employment from the Company to a Subsidiary or from a Subsidiary to the Company or another Subsidiary will not be considered a termination of the Grantee's employment for purposes of this Agreement if such change of employment is made at the request or with the express consent of the Company. Unless the Committee otherwise determines, however, any such change of employment that is not made at the request or with the express consent of the Company will be a termination of the Grantee's employment within the meaning of this Agreement.

7. **Delivery by Company.** As soon as practicable after the vesting of Restricted Stock Units, and any related Unpaid RSU Dividend Equivalents, pursuant to Section 5 or 6 hereof or Section 10.1(b) of the Plan (but no later than March 15 of the calendar year following the year in which such vesting occurs), and subject to the withholding referred to in Section 12 of this Agreement, the Company will (a) cause to be issued and transferred to a brokerage account through Depository Trust Company for the benefit of the Grantee, or cause to be issued and delivered to the Grantee, certificates issued in the Grantee's name for, that number and type of shares of Common Stock represented by such vested Restricted Stock Units and any securities representing related vested Unpaid RSU Dividend Equivalents, and (b) cause to be delivered to the Grantee any cash payment representing related vested Unpaid RSU Dividend Equivalents. Any delivery of securities will be deemed effected for all purposes when (i) certificates representing such securities and, in the case of any Unpaid RSU Dividend Equivalents, any other documents necessary to reflect ownership thereof by the Grantee, have been delivered personally to the Grantee or, if delivery is by mail, when the Company or its stock transfer agent has deposited the certificates and/or such other documents in the United States mail, addressed to the Grantee or (ii) in the case of a book-entry transfer, at the time the Company's stock transfer agent initiates the transfer of such securities to a brokerage account through Depository Trust Company for the benefit of the Grantee. Any cash payment will be deemed effected when a check from the Company, payable to or at the direction of the Grantee and in the amount equal to the amount of the cash payment, has

been delivered personally to or at the direction of the Grantee or deposited in the United States mail, addressed to the Grantee or his or her nominee.

8. **Nontransferability of Restricted Stock Units.** Restricted Stock Units and any related Unpaid RSU Dividend Equivalents, are not transferable (either voluntarily or involuntarily and whether by sale, assignment, gift, pledge, exchange or otherwise) before or after the Grantee's death, except as follows: (a) during the Grantee's lifetime, pursuant to a domestic relations order issued by a court of competent jurisdiction that is not contrary to the terms and conditions of the Plan or this Agreement, and in a form acceptable to the Committee; or (b) after the Grantee's death, by will or pursuant to the applicable laws of descent and distribution, as may be the case. Any person to whom Restricted Stock Units are transferred in accordance with the provisions of the preceding sentence shall take such Restricted Stock Units and any related Unpaid RSU Dividend Equivalents subject to all of the terms and conditions of the Plan and this Agreement, including that the vesting and termination provisions of this Agreement will continue to be applied with respect to the Grantee. Certificates representing Restricted Stock Units that have vested may be delivered (or, in the case of book entry registration, registered) only to the Grantee (or during the Grantee's lifetime, to the Grantee's court appointed legal representative) or to a person to whom the Restricted Stock Units have been transferred in accordance with this Section.

9. **Adjustments.**

(a) The Restricted Stock Units and any related Unpaid RSU Dividend Equivalents will be subject to adjustment pursuant to Section 4.2 of the Plan in such manner as the Committee, in its sole discretion, deems equitable and appropriate in connection with the occurrence following the Grant Date of any of the events described in Section 4.2 of the Plan following the Grant Date.

(b) In the event of any Approved Transaction, Board Change or Control Purchase following the Grant Date, the Restricted Stock Units and any related Unpaid RSU Dividend Equivalents may become vested in accordance with Section 10.1(b) of the Plan.

10. **Company's Rights.** The existence of this Agreement will not affect in any way the right or power of the Company or its stockholders to accomplish any corporate act, including, without limitation, the acts referred to in Section 10.16 of the Plan.

11. **Restrictions Imposed by Law.** Without limiting the generality of Section 10.8 of the Plan, the Company shall not be obligated to deliver any shares of Common Stock represented by vested Restricted Stock Units or securities constituting any Unpaid RSU Dividend Equivalents if counsel to the Company determines that the issuance or delivery thereof would violate any applicable law or any rule or regulation of any governmental authority or any rule or regulation of, or agreement of the Company with, any securities exchange or association upon which shares of Common Stock or such other securities are listed or quoted. The Company will in no event be obligated to take any affirmative action in order to cause the delivery of shares of Common Stock represented by vested Restricted Stock Units or securities constituting any Unpaid RSU Dividend Equivalents to comply with any such law, rule, regulation, or agreement. Any certificates representing any such securities issued or delivered under this Agreement may bear such legend

or legends as the Company deems appropriate in order to assure compliance with applicable securities laws.

12. **Mandatory Withholding for Taxes.** To the extent that the Company or any Subsidiary of the Company is subject to withholding tax requirements under any national, state, local or other governmental law with respect to the award of the Restricted Stock Units to the Grantee or the vesting thereof, or the designation of any RSU Dividend Equivalents as payable or distributable or the payment or distribution thereof, the Grantee must make arrangements satisfactory to the Company to make payment to the Company or its designee of the amount required to be withheld under such tax laws, as determined by the Company (collectively, the "Required Withholding Amount"). To the extent such withholding is required because the Grantee vests in some or all of the Restricted Stock Units and any related RSU Dividend Equivalents, the Company shall withhold (a) from the shares of Common Stock represented by vested Restricted Stock Units and otherwise deliverable to the Grantee a number of shares of the applicable type of Common Stock and/or (b) from any related RSU Dividend Equivalents otherwise deliverable to the Grantee an amount of such RSU Dividend Equivalents, which collectively have a value (or, in the case of securities withheld, a Fair Market Value) equal to the Required Withholding Amount, unless the Grantee remits the Required Withholding Amount to the Company or its designee in cash in such form and by such time as the Company may require or other provisions for withholding such amount satisfactory to the Company have been made. Notwithstanding any other provisions of this Agreement, the delivery of any shares of Common Stock represented by vested Restricted Stock Units and any related RSU Dividend Equivalents may be postponed until any required withholding taxes have been paid to the Company.

13. **Notice.** Unless the Company notifies the Grantee in writing of a different procedure or address, any notice or other communication to the Company with respect to this Agreement will be in writing and will be delivered personally or sent by first class mail, postage prepaid, to the Company's then current headquarters, which as of the Grant Date is the address specified for the Company on Schedule I hereto. Unless the Company elects to notify the Grantee electronically pursuant to the online grant and administration program or via email, any notice or other communication to the Grantee with respect to this Agreement will be in writing and will be delivered personally, or will be sent by first class mail, postage prepaid, to the Grantee's address as listed in the records of the Company or any Subsidiary of the Company on the Grant Date, unless the Company has received written notification from the Grantee of a change of address.

14. **Amendment.** Notwithstanding any other provision hereof, this Agreement may be supplemented or amended from time to time as approved by the Committee as contemplated by Section 10.7(b) of the Plan. Without limiting the generality of the foregoing, without the consent of the Grantee:

(a) this Agreement may be amended or supplemented from time to time as approved by the Committee (i) to cure any ambiguity or to correct or supplement any provision herein that may be defective or inconsistent with any other provision herein, (ii) to add to the covenants and agreements of the Company for the benefit of the Grantee or surrender any right or power reserved to or conferred upon the Company in this Agreement, subject to any required approval of the Company's stockholders, and provided, in each case, that such changes or corrections will not adversely affect the rights of the Grantee with respect to

the Award evidenced hereby, (iii) to reform the Award made hereunder as contemplated by Section 10.17 of the Plan or to exempt the Award made hereunder from coverage under Code Section 409A, or (iv) to make such other changes as the Company, upon advice of counsel, determines are necessary or advisable because of the adoption or promulgation of, or change in the interpretation of, any law or governmental rule or regulation, including any applicable federal or state securities laws; and

(b) subject to any required action by the Board of Directors or the stockholders of the Company, the Restricted Stock Units granted under this Agreement may be canceled by the Committee and a new Award made in substitution therefor, provided that the Award so substituted will satisfy all of the requirements of the Plan as of the date such new Award is made and no such action will adversely affect any Restricted Stock Units that are then vested.

15. Grantee Employment. Nothing contained in the Plan or this Agreement, and no action of the Company or the Committee with respect thereto, shall confer or be construed to confer on the Grantee any right to continue in the employ or service of the Company or any Subsidiary or interfere in any way with the right of the Company or any employing Subsidiary to terminate the Grantee's employment or service, as applicable, at any time, with or without Cause, subject to the provisions of any employment or consulting agreement between the Grantee and the Company or any Subsidiary.

16. Nonalienation of Benefits. Except as provided in Section 8 and prior to the vesting of any Restricted Stock Unit, (a) no right or benefit under this Agreement will be subject to anticipation, alienation, sale, assignment, hypothecation, pledge, exchange, transfer, encumbrance or charge, and any attempt to anticipate, alienate, sell, assign, hypothecate, pledge, exchange, transfer, encumber or charge the same will be void, and (b) no right or benefit hereunder will in any manner be subjected to or liable for the debts, contracts, liabilities or torts of the Grantee or other person entitled to such benefits.

17. Governing Law. This Agreement will be governed by, and construed in accordance with, the internal laws of the State of Delaware. Each party irrevocably submits to the general jurisdiction of the state and federal courts located in the State of Colorado and in the State of Delaware in any action to interpret or enforce this Agreement and irrevocably waives any objection to jurisdiction that such party may have based on inconvenience of forum.

18. Construction. References in this Agreement to "this Agreement" and the words "herein," "hereof," "hereunder" and similar terms include all Exhibits and Schedules appended hereto, including the Plan. All references to "Sections" in this Agreement shall be to Sections of this Agreement unless explicitly stated otherwise. The word "include" and all variations thereof are used in an illustrative sense and not in a limiting sense. All decisions of the Committee upon questions regarding the Plan or this Agreement will be conclusive. Unless otherwise expressly stated herein, in the event of any inconsistency between the terms of the Plan and this Agreement, the terms of the Plan will control. The headings of the sections of this Agreement have been included for convenience of reference only, are not to be considered a part hereof and will in no way modify or restrict any of the terms or provisions hereof.

19. **Rules by Committee.** The rights of the Grantee and the obligations of the Company hereunder will be subject to such reasonable rules and regulations as the Committee may adopt from time to time.

20. **Entire Agreement.** This Agreement is in satisfaction of and in lieu of all prior discussions and agreements, oral or written, between the Company and the Grantee regarding the subject matter hereof. The Grantee and the Company hereby declare and represent that no promise or agreement not herein expressed has been made and that this Agreement contains the entire agreement between the parties hereto with respect to the Award and replaces and makes null and void any prior agreements between the Grantee and the Company regarding the Award. Subject to the restrictions set forth in Sections 8 and 16 of this Agreement, this Agreement will be binding upon and inure to the benefit of the parties and their respective heirs, successors and assigns.

21. **Grantee Acknowledgment.** The Grantee will signify acknowledgment of the terms and conditions of this Agreement by acknowledging the acceptance of this Agreement via the procedures described in the online grant and administration program utilized by the Company.

22. **Code Section 409A.** To the extent that Section 409A of the Code or the related regulations and Treasury pronouncements (“Section 409A”) are applicable to the Grantee in connection with the Award, the Award is subject to the provisions of Section 10.17 of the Plan regarding Section 409A.

23. **Administrative Blackouts.** In addition to its other powers under the Plan, the Committee has the authority to suspend any transactions under the Plan as it deems necessary or appropriate for administrative reasons.

24. **Stock Ownership Guidelines.** This Award may be subject to any applicable stock ownership guidelines adopted by the Company, as amended or superseded from time to time.

* * * * *

Schedule I
to Liberty Broadband Corporation
Performance-Based Restricted Stock Units Agreement

Grant Date: [●], 20[●]

Issuer/Company: Liberty Broadband Corporation, a Delaware corporation

Plan: Liberty Broadband Corporation 2019 Omnibus Incentive Plan, as the same may be amended from time to time

Common Stock: The Company's Series [●] Common Stock ("LBRD[●] Common Stock")

Additional Provisions
Applicable to Grantees
who as of the Grant Date
hold the office of Assistant
Vice President or above of
the Company or of Liberty
Media Corporation:

Forfeiture for Misconduct and Repayment of Certain Amounts. If (i) a material restatement of any financial statement of the Company (including any consolidated financial statement of the Company and its consolidated Subsidiaries) is required and (ii) in the reasonable judgment of the Committee, (A) such restatement is due to material noncompliance with any financial reporting requirement under applicable securities laws and (B) such noncompliance is a result of misconduct on the part of the Grantee, the Grantee will repay to the Company Forfeitable Benefits received by the Grantee during the Misstatement Period in such amount as the Committee may reasonably determine, taking into account, in addition to any other factors deemed relevant by the Committee, the extent to which the market value of Common Stock during the Misstatement Period was affected by the error(s) giving rise to the need for such restatement. "Forfeitable Benefits" means (i) any and all cash and/or shares of Common Stock received by the Grantee (A) upon the exercise during the Misstatement Period of any SARs held by the Grantee or (B) upon the payment during the Misstatement Period of any Cash Award or Performance Award held by the Grantee, the value of which is determined in whole or in part with reference to the value of Common Stock, and (ii) any proceeds received by the Grantee from the sale, exchange, transfer or other disposition during the Misstatement Period of any shares of Common Stock received by the Grantee upon the exercise, vesting or payment during the Misstatement Period of any Award held by the Grantee. By way of clarification, "Forfeitable Benefits" will not include any shares of Common Stock received upon vesting of any Restricted Stock Units during the Misstatement Period that are not sold, exchanged, transferred or otherwise disposed of during the Misstatement Period. "Misstatement Period" means the 12-month period beginning on the date of the first public issuance or the filing with the Securities and Exchange Commission, whichever occurs earlier, of the financial statement requiring restatement.

Qualifying Service:

Unless the Committee in its sole discretion determines otherwise in connection with the commencement of employment or service to Liberty Media Corporation, Qurate Retail, Inc. or any entity that is a Subsidiary of either of them, notwithstanding anything to the contrary in this Agreement, Grantee's employment or service with Liberty Media Corporation, Qurate Retail, Inc. or any entity that is a Subsidiary of either of them at the time of determination shall be deemed to be employment or service with the Company for all purposes under the Awards granted pursuant to this Agreement.

Other Clawback Policies: Notwithstanding any other provisions in the Plan, this Award shall be subject to recovery or clawback by the Company under any clawback policy adopted by the Company in accordance with SEC regulations or other applicable law, as amended or superseded from time to time.

Company Notice Address: Liberty Broadband Corporation
12300 Liberty Boulevard
Englewood, Colorado 80112
Attn: [●]

FORM OF FIRST AMENDMENT TO SERVICES AGREEMENT

This First Amendment to Services Agreement (this "Amendment"), effective as of December 13, 2019, is between Liberty Media Corporation, a Delaware corporation (the "Provider"), and [____], a Delaware corporation ("[____]" or "[____]").

RECITALS

WHEREAS, the Provider and [____] previously entered into that certain Services Agreement, dated as of [____] (the "Original Agreement"); and

WHEREAS, in connection with the execution and delivery by the Provider and Gregory B. Maffei ("Executive") of that certain Executive Employment Agreement dated as of the date hereof (the "Executive Employment Agreement"), the Provider and [____] desire to amend the Original Agreement on the terms and conditions set forth herein.

AGREEMENT

NOW THEREFORE, in consideration of the foregoing recitals, the mutual agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be bound legally, agree as follows:

1. Defined Terms. All initially capitalized terms used but not defined herein shall have the respective meanings assigned to such terms in the Original Agreement.

(a) The term "[____]" as used in the Original Agreement and this Amendment (and the term "[____]" as used in this Amendment) shall each refer to [____], a Delaware corporation.

(b) References to "the Agreement" shall be deemed to be references to the Original Agreement, as amended by this Amendment and as it may be further amended from time to time in accordance with the terms thereof and hereof.

2. Amendment to Section 2.2. Section 2.2 of the Original Agreement is amended to read in its entirety as follows:

"Section 2.2Cost Reimbursement. In addition to (and without duplication of) the [Allocated Expenses] [Services Fee] payable pursuant to Section 2.1 and Executive Allocated Expenses pursuant to Section 2.5, [____] also will reimburse the Provider for all direct out-of-pocket costs, with no markup ("Out-of-Pocket Costs"), incurred by the Provider in performing the Services (e.g., postage and courier charges, [software license fees attributable to desktop or laptop computers utilized by Employees,] travel, meals and entertainment expenses, and other miscellaneous expenses that are incurred by the Provider or the [Employees] [Personnel] in the conduct of the Services)."

3. **Amendment to [Section 2.4] [Article II].** [Section 2.4] [Article II] of the Original Agreement is amended to [read in its entirety] [insert new Section 2.4 and Section 2.5] as follows:

“[Section 2.4. Survival.] The terms and conditions of this Article II will survive the expiration or earlier termination of this Agreement with respect to such amounts as are payable in respect of the period of time prior to the effective date of such expiration or termination.”

4. **[Amendment to Article II.** Article II of the Original Agreement is amended to insert new Section 2.5 as follows:]

“Section 2.5. Executive Compensation Expenses. Notwithstanding anything in this Agreement to the contrary, this Section 2.5 shall apply with respect to the Executive Allocated Expenses and Direct Compensation (each as defined below).

(a) Executive Allocated Expenses. [] shall be allocated a portion of the Executive Allocated Expenses equal to its Executive Percentage (as defined below). The “Executive Allocated Expenses” mean Executive’s aggregate salary, commitment bonus (as described in Section 4.2 of the Executive Employment Agreement), health, retirement and other compensation, benefits, perquisites, any legal fees and other expense reimbursements owed to Executive pursuant to Section 9.6 of the Executive Employment Agreement, any Special Reimbursement payments owed to Executive by the Provider (as defined and described in Section 9.7 of the Executive Employment Agreement) and other expenses paid by Provider in connection with the employment of Executive and all Severance Payments (as defined below) paid by Provider; *provided, however*, that the Executive Allocated Expenses will not include (1) any annual cash bonus amounts with respect to services performed for the benefit of the Provider (excluding, for the avoidance of doubt, the commitment bonus described in Section 4.2 of the Executive Employment Agreement) and any equity-based compensation, in each case, paid to such [Employee] [Personnel] by the Provider, (2) all Direct Compensation and any Prorated Executive Bonus Payment (as defined below), and (3) Out-of-Pocket Costs. The Executive Allocated Expenses will be more fully set forth in, and determined from time to time in the manner set forth in, Schedule 2.5 attached hereto, as such Schedule may be periodically amended and revised by the parties as set forth in this Section 2.5.

(b) Payment of Direct Compensation. In accordance with the Executive Employment Agreement, [] agrees to (i) pay Executive []’s allocation of the annual cash bonus amounts with respect to services performed for the benefit of [] in accordance with Section 4.3 of the Executive Employment Agreement with such allocation being equal to the Executive Percentage, (ii) grant Executive options to purchase shares of Series [] Common Stock of [] (“[] Common Stock”) in accordance with Section 4.10 of the Executive Employment Agreement (the “Service Company Term Awards”) and (iii) grant Executive an annual award with respect to [] Common Stock in accordance with Section 4.11 of the Executive Employment Agreement (the “Annual Executive Incentive Awards” and, together with the Service Company Term Awards, the “Equity Awards”). The compensation described in the preceding sentence is referred to herein as the “Direct Compensation.” [] will be solely responsible for all liabilities associated with the Direct Compensation, including with respect to satisfaction of the obligations with respect to Annual Executive Incentive Awards on any

termination of Executive's services with the Provider or [____]. The Direct Compensation will be more fully set forth in, and determined from time to time in the manner set forth in, Schedule 2.5 attached hereto, as such Schedule may be periodically amended and revised by the parties as set forth in this Section 2.5.

(c) Payment of Executive Severance.

(i) The Executive Allocated Expenses shall include all cash severance payments and benefit continuation obligations owed to Executive by the Provider pursuant to Section 5 of the Executive Employment Agreement ("Severance Payments"). Furthermore, [____] may, in lieu of reimbursing Provider the Executive Percentage of any Severance Payments and in accordance with Section 5 of the Executive Employment Agreement, directly deliver shares of [____] Common Stock to Executive in satisfaction of a portion of its Executive Percentage of the Severance Payments (a "Share-Based Severance Payment"), *provided, that*, in the event [____] is unable or otherwise fails to deliver any Share-Based Severance Payment in [____] Common Stock, [____] shall deliver cash to Provider in an amount equal to the value of Share-Based Severance Payment otherwise required to be delivered to Executive by [____].

(ii) Following an Executive Service Termination (as defined below) under circumstances qualifying Executive for payment of a prorated annual bonus pursuant to Section 5.7 of the Executive Employment Agreement (the "Prorated Executive Bonus Payment"), [____] shall pay Executive the Prorated Executive Bonus Payment at the time such payment is due under the Executive Employment Agreement; *provided, that*, in the event [____] fails to pay the Prorated Executive Bonus Payment, it shall reimburse the Provider amounts paid by Provider in respect thereof.

(iii) The amounts set forth in this Section 2.5(c) shall be paid by [____] in addition to any Executive Termination Payment payable to Provider under Section 3.4 of this Agreement.

(iv) In the event of any termination of employment or Services of Executive, this Section 2.5 shall apply to any severance or other payments to be made by or allocated to [____] [in lieu of, and notwithstanding, Section 4.3 of this Agreement].

(d) Executive Percentage. The "Executive Percentage" for the period commencing January 1, 2020 through December 31, 2020 is set forth in Schedule 2.5 and thereafter the Executive Percentage and the Executive Allocated Expenses will be determined annually by the Provider, in consultation with [____] and the Executive, prior to each December 15th of the Term, pursuant to paragraph (e) below.

(e) Determination of Amounts and Allocations. Unless otherwise agreed between the Provider and [____], in consultation with Executive, the Executive Percentage will be determined consistent with the methodology described on Schedule 2.5. In addition, following any Significant Corporate Transaction, the Provider and [____], in consultation with Executive, will negotiate in good faith any appropriate adjustments to the Executive Percentage, Executive Allocated Expenses and Direct Compensation. In no event will any such adjustments apply

retroactively (without the prior written consent of Provider and [] in consultation with the Executive and, with respect to any retroactive adjustments to Direct Compensation previously paid or awarded to Executive, without the prior written consent of Executive).

(i) The parties acknowledge and agree that the methodology described on Schedule 2.5 reflects a good faith estimate of the amount of time that the Provider estimates Executive will spend providing Services to [] during the upcoming fiscal year and that the parties in making any good faith adjustments to the Executive Percentage may take into account such other factors as they deem relevant, including (for the avoidance of doubt) those described in clause (ii) below.

(ii) In the event of (1) a termination by Executive or any other company to whom Executive is providing service at the direction of Provider (each, an “Other Service Company”) of Executive’s services to such Other Service Company, (2) a Change in Control (as such term is defined in the Executive Employment Agreement) of any Other Service Company, (3) a Fundamental Corporate Event (as defined in the Executive Employment Agreement) with respect to the Provider or any Other Service Company, or (4) any other material change in circumstances with respect to the Provider or any Other Service Company following the last agreed adjustment to the Executive Percentage, Executive Allocated Expenses or Direct Compensation that, in each case, results in a change in the allocable percentage of time spent by Executive providing Services to [], in the Executive Allocated Expenses or in the Direct Compensation (any such event in clause (1) through (4) inclusive, a “Significant Corporate Transaction”), the Provider and [] shall promptly, and in good faith, renegotiate the Executive Percentage, Executive Allocated Expenses and Direct Compensation, in consultation with Executive, based on, among other things deemed relevant by the parties, the anticipated Services to be provided by Executive to [] during any upcoming fiscal period and the amount of time that the Provider estimates Executive will spend providing Services to [] during such time.

(iii) In the event of a dispute between the Provider and [] as to the determination of the amount of the Executive Percentage, Executive Allocated Expenses or Direct Compensation, each of the Provider and [] agrees to attempt, in good faith and in consultation with the Executive, to resolve the dispute as set forth in Section 7.16 of this Agreement.

(iv) It is intended that the payments by [] to the Provider under this Agreement in respect of Executive Allocated Expenses and any Termination Payment, when combined with the payment of the Direct Compensation and any Prorated Executive Bonus Payment by [] directly to Executive, are comparable to those which [] would pay to a third party on an arm’s length basis for the same services.

(f) Provider as Payor. Notwithstanding Section 4.2 of this Agreement, the parties acknowledge and agree that the Provider, and not [], will be solely responsible for the payment of salaries, wages, benefits (including health insurance, retirement, and other similar benefits, if any), perquisites and other compensation applicable to Executive; *provided, however*, that [] is responsible for the reimbursement to Provider of the Executive Percentage of the

Executive Allocated Expenses and payment of the Direct Compensation and any Prorated Executive Bonus Payment directly to Executive each as provided in this Section 2.5. The parties acknowledge that Executive will provide services directly to [] in consideration for the receipt of the Direct Compensation and any Prorated Executive Bonus Payment. [Except as otherwise required by the terms of the Tax Sharing Agreement,] the Provider will be responsible for the payment of all federal, state, and local withholding taxes on the compensation of Executive (other than Direct Compensation and any Prorated Executive Bonus Payment) and other such employment related taxes as are required by law, and [] will be responsible for the payment of all federal, state, and local withholding taxes on the Direct Compensation and any Prorated Executive Bonus Payment paid to Executive by [] and other such employment related taxes as are required by law. Each of [] and the Provider will cooperate with the other to facilitate the other's compliance with applicable federal, state, and local laws, rules, regulations, and ordinances applicable to the employment of Executive by either party.

(g) Monthly Payment. [] will pay the Provider, by wire or intrabank transfer of funds or in such other manner specified by the Provider to [], in arrears on or before the last day of each calendar month beginning with January 2020, its allocated portion of the Executive Allocated Expenses then in effect, in monthly installments.

(h) No Duplication. For the avoidance of doubt, no Executive Allocated Expenses, Direct Compensation, Prorated Executive Bonus Payments or Executive Termination Payment (as defined below) will be included in the [Allocated Expenses or in the severance payments under Section 4.2 allocated to [] pursuant to this Agreement][Services Fee].”

5. Amendment to Section 3.3. Section 3.3 of the Original Agreement is amended to insert the following as the last paragraph:

“An Executive Termination Payment may be due in connection with the termination of this Agreement pursuant to this Section 3.3 as described in and subject to the limitations of Section 3.4(c).”

6. Amendment to Article III. Article III of the Original Agreement is amended to insert new Section 3.4 as follows:

“Section 3.4. Termination of Executive Services. This Section 3.4 shall apply with respect to the termination of any Services provided by Executive in lieu of and notwithstanding Section 3.2 of this Agreement:

(a) Termination of Executive Services by []. At any time during the Term, [] may elect to discontinue obtaining any of the Services from Executive (including removing Executive from his position as [Executive Chairman] [President and CEO] at []) by providing written notice to the Provider and the Executive (an “Executive Service Termination”). Such Executive Service Termination shall be effective (i) in the case of termination for Cause (as defined in the Executive Employment Agreement with reference to []), on the date written notice is provided by [] to the Provider and the Executive and (ii) in the case of termination for any reason other than termination for Cause on the later of (x)

the 30th day following the delivery of such notices (or such later date as may be specified in the notices) and (y) the payment by [] to the Provider of the Executive Termination Payment.

(b) *Termination of Executive Services by Provider.* At any time during the Term, the Provider may elect to discontinue providing [] any of the Services by Executive by providing written notice to [] and the Executive, including, in connection with a termination by Executive of his employment with the Provider or of any services provided to [] under his Executive Employment Agreement. Such termination shall be effective on the date specified in the notices.

(c) *Termination Requiring Payment of Executive Termination Payment.*

(i) An Executive Service Termination for any reason other than termination for Cause (as defined in the Executive Employment Agreement with reference to []) will result in an obligation by [] to pay the Provider the Executive Termination Payment no later than the effective date of such Executive Service Termination.

(ii) A termination (x) by the Provider of the Services provided to [] by Executive following or in connection with a Change in Control (as defined in the Executive Employment Agreement with reference to []) of [] or (y) by Executive of his Services provided to [] under the Executive Employment Agreement, in each case, shall also require the payment by [] to the Provider of the Executive Termination Payment no later than the effective date of such termination. The effective date of a termination described in clause (y) of this Section 3.4(c)(ii) shall be determined in accordance with the Executive Employment Agreement.

(iii) In event of the termination of this Agreement on or before the expiration of the Employment Period (as defined in the Executive Employment Agreement) pursuant to Section 3.3, [] will pay the Executive Termination Payment to the Provider no later than the effective date of such termination; *provided, however*, that if such termination of this Agreement is at or after the time Executive's services to [] or Provider under the Executive Employment Agreement have been terminated for Cause or by Executive without Good Reason (each as defined in the Executive Employment Agreement with reference to either Provider or []), then no Executive Termination Payment shall be due.

(iv) Notwithstanding anything to contrary in this Section 3.4(c), (1) no Executive Termination Payment shall be payable if in connection with the events giving rise to such payment obligation Executive is no longer employed by Provider, and (2) only one Executive Termination Payment shall be paid under this Agreement.

(v) The "Executive Termination Payment" means the net present value (determined by Provider in good faith, as of the date on which Executive's services to [] are terminated (the "Service Termination Date")) of the sum of:

(1) an amount equal to (x) the Executive Percentage then-in effect multiplied by (y) all Executive Allocated Expenses that would have been allocated to [] pursuant to Section 2.5 (absent termination of Executive's services to []) from and

after the Service Termination Date through the earlier of the expiration of the Employment Period or December 31 of the calendar year following the year in which the Service Termination Date occurs (and if the Executive Percentage for such following year has not yet been determined, then the Executive Percentage for such following year will be deemed to be the same as the Executive Percentage for the year in which the Service Termination Date occurs); plus

(2) an amount equal to (x) [_____]’s allocation of the Aggregate Target Bonus (as defined in the Executive Employment Agreement) for the year in which the Service Termination Date occurs multiplied by (y) the ratio of (A) the number of days remaining in the year in which the Service Termination Date occurs to (B) 365; plus

(3) an amount equal to [_____]’s allocation of the Aggregate Target Bonus for the first calendar year commencing after the Service Termination Date (and if [_____]’s allocation of the Aggregate Target Bonus for such year has not yet been determined, then this clause (3) shall refer to [_____]’s allocation of the Aggregate Target Bonus for the year in which the Service Termination Date occurs); *provided*, that if the Service Termination Date occurs during the last calendar year of the Employment Period, then this clause (3) shall equal \$0; plus

(4) if the Service Company Term Awards to be granted to Executive by [_____] pursuant to Section 2.5(b)(ii) of this Agreement have not been granted on or before the Service Termination Date, then an amount equal to the portion of the \$45,000,000 grant value for all Term Awards (as defined in the Executive Employment Agreement) that is allocated to [_____] pursuant to Section 4.10(b) of the Executive Employment Agreement (and if the portion of the Term Awards that will be allocated to [_____] pursuant to Section 4.10(b) of the Executive Employment Agreement has not yet been determined, then this clause (4) shall refer to the portion of the Term Awards allocated to [_____] pursuant to Schedule 2.5 to this Agreement with respect to the Service Company Term Awards granted by [_____] in December 2019 pursuant to Section 4.10(a) of the Executive Employment Agreement, unless otherwise agreed by the Provider and [_____] in consultation with the Executive); *provided that* if all Service Company Term Awards have been granted to Executive on or before the Service Termination Date then this clause (4) shall equal \$0; plus

(5) if the Annual Executive Incentive Awards to be granted to Executive by [_____] pursuant to Section 2.5(b)(iii) of this Agreement for the year in which the Service Termination Date occurs have not been granted on or before the Service Termination Date, then an amount equal to the Service Company Target Amount (as defined in the Executive Employment Agreement) applicable to [_____] pursuant to Section 4.11(b) of the Executive Employment Agreement for such year (and if all Annual Executive Incentive Awards for the year in which the Service Termination Date occurs have been granted to Executive, then this clause (5) shall equal \$0); plus

(6) an amount equal to the Service Company Target Amount (as defined in the Executive Employment Agreement) applicable to [_____] for the first calendar year commencing after the Service Termination Date (and if the Service Company Target

Amount for such year has not yet been determined, then this clause (6) shall refer to the Service Company Target Amount applicable to [] for the year in which the Service Termination Date occurs) ; *provided*, that if the Service Termination Date occurs during the last calendar year of the Employment Period, then this clause (6) shall equal \$0.

(d) *No Effect on other Services.* The Provider shall have no obligation to provide the Services that have been discontinued pursuant to this Section 3.4, and []'s obligation to further compensate the Provider for such Services, in each case, from and after the effective date of the termination of such Services in accordance with this Agreement will remain in effect for the remainder of the Term with respect to those Services that have not been so discontinued. Each party will remain liable to the other for any required payment or performance accrued prior to the effective date of the termination of such Services.

(e) *Impact on Equity Awards.* The impact of termination of any Services provided by Executive pursuant to this Section 3.4 on the Equity Awards will be as specified in the Equity Award Agreements.”

7. Amendment to Article V. Article V of the Original Agreement is amended to insert new Section 5.3 as follows:

“Section 5.3. Equity Awards. [] represents and warrants that each equity award granted to Executive with respect to its common stock shall either be exempt from or comply with Section 409A of the Internal Revenue Code of 1986, as amended (“Section 409”). Without limiting the foregoing, each option granted to Executive that is intended to be exempt from Section 409A shall be with respect to “service recipient stock” and with respect to an “eligible issuer of service recipient stock” (each as defined in Section 409A), shall not contain any feature for the deferral of compensation and shall have an exercise or strike price that is not less than the fair market value of such service recipient stock on the grant date of such award.”

8. Amendment to Section 6.4. Section 6.4 of the Original Agreement is amended to read in its entirety as follows:

“Section 6.4.Survival. The terms and conditions of this Article VI will survive the expiration or termination of this Agreement only in respect of claims for indemnification asserted against the Indemnitor prior to such termination.”

9. Amendment to Section 7.6. Section 7.6 of the Original Agreement is amended to read in its entirety as follows:

“Section 7.6. Third-Party Rights. Nothing expressed or referred to in this Agreement is intended or will be construed to give any Person other than the parties hereto, the [] Indemnitees, Provider Indemnitees, Executive and their respective successors and permitted assigns any legal or equitable right, remedy or claim under or with respect to this Agreement, or any provision hereof, it being the intention of the parties hereto that this Agreement and all of its provisions and conditions are for the sole and exclusive benefit of the parties to this Agreement, Executive and their respective successors and assigns. For the avoidance of doubt, Executive shall be considered a third party beneficiary of this Agreement with respect to, and entitled to the

rights and benefits set forth in, the Amendment and may enforce the applicable provisions of this Agreement as if Executive was a party hereto.”

10. Amendment to Section 7.9. Section 7.9(a) of the Original Agreement is amended to read in its entirety as follows:

“(a) This Agreement will inure to the benefit of and be binding on the parties to this Agreement and their respective legal representatives, successors and permitted assigns, including, for avoidance of doubt successors and assigns of [] as a result of a Spin Transaction or a Fundamental Corporate Event (each as defined in the Executive Employment Agreement).”

11. Amendment to Article VII. Article VII of the Original Agreement is amended to insert new Section 7.16 as follows:

“Section 7.16. Dispute Resolution. In the event of any dispute arising out of or related to this Agreement or any of the transactions contemplated hereby, the parties shall first negotiate in good faith to resolve such dispute in accordance with this Section 7.16 prior to commencing any action, suit or proceeding before any court or other adjudicatory body. The parties shall designate representatives to meet to negotiate in good faith a resolution of such dispute for a period of thirty days (which may be extended by agreement of the parties). If at the end of the good faith negotiation period the parties fail to resolve the dispute, then the parties shall mediate the dispute before a neutral third party mediator under the then current American Arbitration Association (AAA) procedures for mediation of business disputes. The parties will equally share the cost of the mediation.”

12. Counterparts; Electronic Execution. This Amendment may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Amendment. Delivery of an executed counterpart of this Amendment electronically (including by e-mail delivery of a “.pdf” format data file) shall be equally as effective as delivery of a manually executed counterpart of this Amendment. Any party delivering an executed counterpart of this Amendment electronically also shall deliver a manually executed counterpart of this Amendment but the failure to deliver a manually executed counterpart shall not affect the validity, enforceability, and binding effect of this Amendment.

13. Entire Agreement. The Original Agreement as amended by this Amendment constitutes the entire agreement and understanding between the parties hereto with respect to the subject matter hereof and thereof, and supersedes any and all prior agreements and understandings, oral or written, relating to the subject matter hereof and thereof.

14. Reaffirmation of the Original Agreement. Except as specifically set forth in this Amendment, all other terms and conditions of the Original Agreement shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, each of the parties has signed this Amendment, or has caused this Amendment to be signed by its duly authorized officer, as of the date first above written.

PROVIDER:

LIBERTY MEDIA CORPORATION

By: _____

Name: Renee Wilm

Title: Chief Legal Officer

[]:

[]

By: _____

Name: Kate Jewell

Title: Assistant Vice President

[Signature Page to [] Amendment]

Schedule 2.5

Executive Percentage

2020 Executive Percentage

For Executive's 2020 compensation, the Executive Percentage for each of Provider, Qurate Retail, Inc. ("Qurate"), Liberty Broadband Corporation ("LBC"), GCI Liberty, Inc. ("GCIL") and Liberty TripAdvisor Holdings, Inc. ("LTAH") and together with Qurate, LBC and GCIL, the "Service Companies" and each, a "Service Company") will be as set forth below, unless a different allocation is otherwise agreed by Provider, the Service Companies and Executive:

	Provider			Qurate	GCIL	LBC	LTAH
	FWONK	LSXMK	BATRK	QRTEA	GLIBA	LBRDK	LTRPB
2020 Executive Percentage (by ticker)	16.0%	23.0%	5.0%	19.0%	14.0%	18.0%	5.0%
2020 Executive Percentage (by company)	44.0%			19.0%	14.0%	18.0%	5.0%

Executive Percentage Methodology

For calendar years 2021 and beyond, the "Executive Percentage" will be determined based on the following two factors, each weighted 50%: (i) the relative market capitalization of shares of Series C Liberty SiriusXM common stock, par value \$0.01 per share ("LSXMK"), Series C Liberty Braves common stock, par value \$0.01 per share ("BATRK"), and Series C Liberty Formula One common stock, par value \$0.01 per share ("FWONK," and together with LSXMK and BATRK, the "Series C Common Stock"), Series A common stock, par value \$0.01 per share, of Qurate ("QRTEA"), Series C common stock, par value \$0.01 per share, of LBC ("LBRDK"), Series A common stock, \$0.01 per share, of GCIL ("GLIBA") and Series B common stock, par value \$0.01 per share, of LTAH ("LTRPB," and together with the Series C Common Stock, QRTEA, LBRDK and GLIBA, the "Common Stock"; and (ii) on the average of (x) the percentage allocation of time for all Provider employees across the applicable Service Companies or tracking stock groups represented by all Series C Common Stock and (y) the Executive's percentage allocation of time across the applicable Service Companies or tracking stock groups represented by all Series C Common Stock (in each case, for the prior calendar year), unless a different allocation method is otherwise agreed by the Provider and the Service Companies in consultation with the Executive.

Certain 2020 Executive Allocated Expenses

For the avoidance of doubt, the aggregate annual base salary and the initial commitment bonus payable to Executive pursuant to the Executive Employment Agreement shall be allocated to, and reimbursed to Provider by, each Service Company in 2020 based on its respective Executive Percentage as set forth below:

	Aggregate Amount	Allocation of Aggregate Annual Base Salary and Initial Commitment Bonus by Company				
		Provider	Qurate	GCIL	LBC	LTAH
2020 Executive Percentage		44.0%	19.0%	14.0%	18.0%	5.0%
2020 Annual Base Salary	\$3,000,000	\$1,320,000	\$570,000	\$420,000	\$540,000	\$150,000
Initial Commitment Bonus	\$5,000,000	\$2,200,000	\$950,000	\$700,000	\$900,000	\$250,000

Direct Compensation

Direct Compensation

The amounts of the annual cash performance bonus, the Annual Executive Incentive Awards and the Service Company Term Awards payable by each Service Company directly to Executive pursuant to Section 2.5(b) of this Agreement shall be determined as follows:

- Annual Cash Performance Bonus. Executive’s aggregate target annual cash performance bonus amount Of \$17 million (“Aggregate Annual Target Cash Bonus”) is allocated to each Service Company based on its respective Executive Percentage and may be made subject to the achievement of one or more performance metrics as described in Section 4.3 of the Executive Employment Agreement;
- Annual Incentive Awards. Executive’s aggregate annual equity award target value of \$17.5 million (“Aggregate Annual Equity Award Target”) is allocated to each Service Company based on its respective Executive Percentage; and
- Service Company Term Awards. Executive’s aggregate upfront stock option and restricted stock unit (“RSU”) grant date value of \$90 million (“Aggregate Term Award”) is allocated to each Service Company based on its respective Executive Percentage.

2020 Allocation

The Aggregate Annual Target Cash Bonus, Aggregate Annual Equity Incentive Award Target and Aggregate Term Award shall be allocated to each Service Company in 2020 based on its respective Executive Percentage as set forth below:

	Aggregate Annual Target Cash Bonus	Allocation of Aggregate Annual Target Cash Bonus by Company				
		Provider	Qurate	GCIL	LBC	LTAH
2020 Executive Percentage		44.0%	19.0%	14.0%	18.0%	5.0%
2020 Annual Target Cash Bonus	\$17,000,000	\$7,480,000	\$3,230,000	\$2,380,000	\$3,060,000	\$850,000

	Aggregate Annual Equity Award Target	Allocation of Aggregate Annual Equity Award Target by Ticker ⁽¹⁾						
		Provider			Qurate	GCIL	LBC	LTAH
		FWONK	LSXMK	BATRK	QRTEA	GLIBA	LBRDK	LTRPB
2020 Executive Percentage		16.0%	23.0%	5.0%	19.0%	14.0%	18.0%	5.0%
2020 Annual Equity Award Target	\$17,500,000	\$2,800,000	\$4,025,000	\$875,000	\$3,325,000	\$2,450,000	\$3,150,000	\$875,000
2020 Annual Equity Awards (by company)	\$17,500,000	Total: \$7,700,000			\$3,325,000	\$2,450,000	\$3,150,000	\$875,000

(1) The exercise price of any options granted by the Provider or a Service Company will equal the fair market value of the underlying stock on the grant date determined in accordance with the governing plan, which will not occur

during a blackout. The value will be determined in accordance with the applicable company's standard grant practice.

	Aggregate Term Award ⁽¹⁾	Allocation of Aggregate Term Award by Ticker ⁽¹⁾⁽²⁾						
		Provider			Qurate	GCIL	LBC	LTAH
		FWONK	LSXMK	BATRK	QRTEA	GLIBA	LBRDK	LTRPB
Executive Percentage		16.0%	23.0%	5.0%	19.0%	14.0%	18.0%	5.0%
2019 tranche	\$45,000,000	\$7,200,000	\$10,350,000	\$2,250,000	\$8,550,000	\$6,300,000	\$8,100,000	\$2,250,000
2020 tranche (estimated)	\$45,000,000	\$7,200,000	\$10,350,000	\$2,250,000	\$8,550,000	\$6,300,000	\$8,100,000	\$2,250,000
Total Term Awards (by company)	\$90,000,000	Total: \$39,600,000			\$17,100,000	\$12,600,000	\$16,200,000	\$4,500,000

- (1) The Aggregate Term Award will be split into two equal tranches to be granted in December 2019 and December 2020, with each tranche cliff vesting on December 31 of 2023 and 2024, respectively, except LTAH's awards of upfront RSUs will vest on the fourth anniversary of each grant date.
- (2) The exercise price of any options granted by the Provider or a Service Company will equal the fair market value of the underlying stock on the grant date determined in accordance with the governing plan, which will not occur during a blackout. The value will be determined in accordance with the applicable company's standard grant practice.

Methodology for Allocation of 2020 tranche of Aggregate Term Awards

With respect to the second tranche of the Aggregate Term Awards to be granted on or before December 15, 2020, the awards will be the responsibility of the Provider and each Service Company based on an allocation of \$45 million grant value across each class of Common Stock and on the following two factors, each weighted 50%: (i) the relative market value of each such class of Common Stock and (ii) the average of (x) the percentage allocation of time for all Provider employees across the applicable Service Company or tracking stock groups represented by all Series C Common Stock and (y) the Executive's percentage allocation of time across the applicable Service Company or tracking stock groups represented by all Series C Common Stock (in each case, for calendar year 2020), unless a different allocation method is otherwise agreed by the Provider and the Service Companies in consultation with the Executive.

As of December 31, 2019

A table of subsidiaries of Liberty Broadband Corporation is set forth below, indicating as to each the state or jurisdiction of organization and the names under which such subsidiaries do business. Subsidiaries not included in the table are inactive or, considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary.

Entity Name	Domicile
Communication Capital, LLC (fka Communication Capital Corp.)	DE
JJCK, LLC (dba EmFinders)	TX
LBC Cheetah 1, LLC	DE
LBC Cheetah 5, LLC	DE
LBC Cheetah 6, LLC	DE
LMC Cheetah 1, LLC	DE
LMC Cheetah 4, LLC	DE
Skyhook Holding, Inc. (fka True Position, Inc.)	DE
Skyhook Software Services Ltd.	China
Skyhook Wireless, Inc.	DE
TP Israel, LLC	DE
TP Nigeria, LLC (fka TruePosition Nigeria, LLC; fka TP Nigeria, LLC)	DE
TP UK, LLC	DE

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Liberty Broadband Corporation:

We consent to the incorporation by reference in the following registration statements of Liberty Broadband Corporation of our reports dated February 3, 2020, with respect to the consolidated balance sheets of Liberty Broadband Corporation as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive earnings (loss), cash flows, and equity for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2019, which reports appear in the December 31, 2019 annual report on Form 10-K of Liberty Broadband Corporation.

Our report on the consolidated financial statements refers to a change in the method of accounting for leases at the Company's equity method investee, Charter Communications, Inc., as of January 1, 2019 due to the adoption of Accounting Standard Codification Topic 842, *Leases*.

Description	Registration Statement No.	Description
S-8	333-200436	Liberty Broadband Corporation Transitional Stock Adjustment Plan, as amended
S-8	333-200438	Liberty Broadband Corporation 2014 Omnibus Incentive Plan (Amended and Restated as of March 11, 2015), as amended
S-8	333-233258	Liberty Broadband Corporation 2019 Omnibus Incentive Plan

/s/ KPMG LLP

Denver, Colorado
February 3, 2020

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Charter Communications, Inc.:

We consent to the incorporation by reference in the registration statement Nos. 333-200436, 333-200438 and 333-233258 on Form S-8 of Liberty Broadband Corporation of our report dated January 30, 2020, with respect to the consolidated balance sheets of Charter Communications, Inc. as of December 31, 2019 and 2018, the related consolidated statements of operations, changes in shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2019, which report is incorporated by reference in the December 31, 2019 annual report on Form 10-K of Liberty Broadband Corporation.

Our report refers to a change in the method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standard Codification Topic 842, *Leases*.

/s/ KPMG LLP

St. Louis, Missouri
January 30, 2020

CERTIFICATION

I, Gregory B. Maffei, certify that:

1. I have reviewed this annual report on Form 10-K of Liberty Broadband Corporation, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements and other financial information included in this annual report fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by this annual report based on such evaluation; and
 - d) disclosed in this annual report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent function):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 3, 2020

/s/ GREGORY B. MAFFEI
Gregory B. Maffei
President and Chief Executive Officer

CERTIFICATION

I, Brian J. Wendling, certify that:

1. I have reviewed this annual report on Form 10-K of Liberty Broadband Corporation, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements and other financial information included in this annual report fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures as of the end of the period covered by this annual report based on such evaluation; and
 - d) disclosed in this annual report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent function):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 3, 2020

/s/ BRIAN J. WENDLING

Brian J. Wendling
Chief Accounting Officer and Principal Financial Officer

Certification

**Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)**

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), each of the undersigned officers of Liberty Broadband Corporation, a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Annual Report on Form 10-K for the period ended December 31, 2019 (the "Form 10-K") of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 3, 2020

/s/ GREGORY B. MAFFEI

Gregory B. Maffei
President and Chief Executive Officer

Dated: February 3, 2020

/s/ BRIAN J. WENDLING

Brian J. Wendling
*Chief Accounting Officer and Principal Financial Officer
(Principal Financial Officer and Principal Accounting Officer)*

The foregoing certification is being furnished solely pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code) and is not being filed as part of the Form 10-K or as a separate disclosure document.
