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

FORM 10-K

(Mark One)

☒**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: 333-179121

Hughes Satellite Systems Corporation

(Exact name of registrant as specified in its charter)

Colorado	**45-0897865**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
100 Inverness Terrace East, Englewood, Colorado	**80112-5308**
(Address of principal executive offices)	(Zip Code)
(303) 706-4000	**Not Applicable**
(Registrant's telephone number, including area code)	(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act: **None**
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 o No x *

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 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. (Check one):

Large accelerated filer	☐	Accelerated filer	☐	Emerging growth company	☐
Non-accelerated filer	☒	Smaller reporting 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 registrant's voting interests held by non-affiliates on June 30, 2019 was $0.

As of February 10, 2020, the registrant's outstanding common stock consisted of 1,078 shares of common stock, $0.01 par value per share.

The Registrant meets the conditions set forth in General Instructions (I)(1)(a) and (b) of Form 10-K and is therefore filing this Annual Report on Form 10-K with the reduced disclosure format.

* The Registrant currently is not subject to the filing requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934 and is filing this Annual Report on Form 10-K/A on a voluntary basis. The Registrant 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 as if it were subject to such filing requirements during such period.

DOCUMENTS INCORPORATED BY REFERENCE None

TABLE OF CONTENTS

*** This item has been omitted pursuant to the reduced disclosure format as set forth in General Instructions (I) (2) (a) and (c) of Form 10-K.**

DISCLOSURE REGARDING FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K ("Form 10-K") contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including but not limited to statements about our estimates, expectations, plans, objectives, strategies, financial condition, expected impact of regulatory developments and legal proceedings, opportunities in our industries and businesses and other trends and projections for the next fiscal quarter and beyond. All statements, other than statements of historical facts, may be forward-looking statements. Forward-looking statements may also be identified by words such as "anticipate," "intend," "plan," "goal," "seek," "believe," "estimate," "expect," "predict," "continue," "future," "will," "would," "could," "can," "may" and similar terms. These forward-looking statements are based on information available to us as of the date of this Form 10-K and represent management's current views and assumptions. Forward-looking statements are not guarantees of future performance, events or results and involve potential known and unknown risks, uncertainties and other factors, many of which may be beyond our control and may pose a risk to our operating and financial condition. Accordingly, actual performance, events or results could differ materially from those expressed or implied in the forward-looking statements due to a number of factors including, but not limited to:

- significant risks related to the construction and operation of our satellites, such as the risk of not being able to timely complete the construction of or material malfunction on one or more of our satellites, changes in the space weather environment that could interfere with the operation of our satellites and our general lack of commercial insurance coverage on our satellites;
- our ability to implement and/or realize benefits of our domestic and/or international investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions including, without limitation, the BSS Transaction (as defined herein);
- lawsuits relating to the BSS Transaction could result in substantial costs;
- our ability to realize the anticipated benefits of our current satellites and any future satellite we may construct or acquire;
- risks related to our foreign operations and other uncertainties associated with doing business internationally, including changes in foreign exchange rates between foreign currencies and the United States dollar, economic instability, political disturbances and the consequences of being subject to foreign regulation and foreign legal proceedings, including increased operations costs and potential fines and penalties for violations, which may be substantial;
- the failure of third-party providers of components, manufacturing, installation services and customer support services to appropriately deliver the contracted goods or services; and
- our ability to bring advanced technologies to market to keep pace with our customers and competitors.

Other factors that could cause or contribute to such differences include, but are not limited to, those discussed in Part I, Item 1A. Risk Factors and Item 7. Management's Narrative Analysis of Results of Operations of this Form 10-K and Results of Operations of this Form 10-K and those discussed in other documents we file with the Securities and Exchange Commission ("SEC").

All cautionary statements made herein should be read as being applicable to all forward-looking statements wherever they appear. Investors should consider the risks and uncertainties described herein and should not place undue reliance on any forward-looking statements. We do not undertake, and specifically disclaim, any obligation to publicly release the results of any revisions that may be made to any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Although we believe that the expectations reflected in any forward-looking statements are reasonable, we cannot guarantee future results, events, levels of activity, performance or achievements. We do not assume responsibility for the accuracy and completeness of any forward-looking statements. We assume no responsibility for updating forward-looking information contained or incorporated by reference herein or in any documents we file with the SEC, except as required by law.

Should one or more of the risks or uncertainties described herein or in any documents we file with the SEC occur, or should underlying assumptions prove incorrect, our actual results and plans could differ materially from those expressed in any forward-looking statements.

PART I

ITEM 1. BUSINESS

OVERVIEW

Hughes Satellite Systems Corporation (which, together with its subsidiaries, is referred to as “HSS,” the “Company,” “we,” “us” and “our”) is a holding company and a subsidiary of EchoStar Corporation (“EchoStar”). We were formed as a Colorado corporation in March 2011 to facilitate the acquisition by EchoStar (the “Hughes Acquisition”) of Hughes Communications, Inc. and its subsidiaries and related financing transactions. In connection with our formation, EchoStar contributed the assets and liabilities of its satellite services business to us, including the principal operating subsidiary of its satellite services business, EchoStar Satellite Services L.L.C. A substantial majority of the voting power of the shares of each of EchoStar and DISH Network Corporation (“DISH”) is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established for the benefit of his family.

We are a global provider of broadband satellite technologies, broadband internet services for consumer customers, which include home and small to medium-sized businesses, and satellite services. We also deliver innovative network technologies, managed services and communications solutions for enterprise customers, which include aeronautical and government enterprises.

Our industry continues to evolve with the increasing worldwide demand for broadband internet access for information, entertainment and commerce. In addition to fiber and wireless systems, other technologies such as geostationary high throughput satellites, low-earth orbit (“LEO”) networks, medium-earth orbit (“MEO”) systems, balloons and High Altitude Platform Systems are expected to play significant roles in enabling global broadband access, networks and services. We intend to use our expertise, technologies, capital, investments, global presence, relationships and other capabilities to continue to provide broadband internet systems, equipment, networks and services for information, the internet-of-things, entertainment and commerce in North America and internationally for consumer and enterprise customers. We are closely tracking the developments in next-generation satellite businesses, and we are seeking to utilize our services, technologies, licenses and expertise to find new commercial opportunities for our business.

We currently operate in two business segments: Hughes and ESS. These segments are consistent with the way we make decisions regarding the allocation of resources, as well as how operating results are reviewed by our chief operating decision maker, who is the Company’s Chief Executive Officer.

Our operations also include various corporate departments (primarily Executive, Treasury, Strategic Development, Human Resources, IT, Finance, Accounting, Real Estate and Legal) and other activities that have not been assigned to our operating segments such as costs incurred in certain satellite development programs and other business development activities, and gains or losses from certain of our investments. These activities, costs and income, as well as eliminations of intersegment transactions, are accounted for in *Corporate and Other* in our segment reporting.

In May 2019, EchoStar and one of our former subsidiaries, EchoStar BSS Corporation (“BSS Corp.”), entered into a master transaction agreement (the “Master Transaction Agreement”) with DISH and a wholly-owned subsidiary of DISH (“Merger Sub”). Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) EchoStar and its subsidiaries and we and our subsidiaries transferred to BSS Corp. certain real property and the various businesses, products, licenses, technology, revenues, billings, operating activities, assets and liabilities primarily relating to the former portion of our ESS segment that managed, marketed and provided (1) broadcast satellite services primarily to DISH and its subsidiaries (together with DISH, “DISH Network”) and EchoStar’s joint venture Dish Mexico, S. de R.L. de C.V., (“Dish Mexico”) and its subsidiaries and (2) telemetry, tracking and control (“TT&C”) services for satellites owned by DISH Network and a portion of EchoStar’s and our other businesses (collectively, the “BSS Business”); (ii) EchoStar distributed to each holder of shares of EchoStar’s Class A or Class B common stock entitled to receive consideration in the transaction an amount of shares of common stock of BSS Corp., par value $0.001 per share (“BSS Common Stock”), equal to one share of BSS Common Stock for each share of EchoStar’s Class A or Class B common stock owned by such EchoStar stockholder (the “Distribution”); and (iii) immediately after the Distribution, (1) Merger Sub merged with and into BSS Corp. (the “Merger”), such that BSS Corp. became a wholly-owned subsidiary of DISH and DISH owns and operates the BSS Business, and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Class A common stock, par value $0.001 per share (“DISH Common Stock”) ((i) - (iii) collectively, the “BSS Transaction”).

In connection with the BSS Transaction, EchoStar and DISH Network have agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively. Additionally, EchoStar and DISH and certain of our, EchoStar's and DISH's subsidiaries, as applicable, have (i) entered into certain customary agreements covering, among other things, matters relating to taxes, employees, intellectual property and the provision of transitional services; (ii) terminated certain previously existing agreements; and (iii) amended certain existing agreements and entered into certain new agreements pursuant to which we, EchoStar and certain of our and its other subsidiaries, on the one hand, and DISH Network, on the other hand, will obtain and provide certain products, services and rights from and to each other.

The BSS Transaction was structured in a manner intended to be tax-free to EchoStar and its stockholders for U.S. federal income tax purposes and was accounted for as a spin-off to EchoStar's stockholders as we and EchoStar did not receive any consideration. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. As a result of the BSS Transaction, the financial results of the BSS Business, except for certain real estate that transferred in the transaction, are presented as discontinued operations and, as such, excluded from continuing operations and segment results for all periods presented in our accompanying Consolidated Financial Statements and notes thereto in Item 15 of this Form 10-K ("Accompanying Consolidated Financial Statements").

During 2017, EchoStar and certain of its and our subsidiaries entered into a share exchange agreement (the "Share Exchange Agreement") with DISH and certain of its subsidiaries. EchoStar and certain of its and our subsidiaries received all the shares of the Hughes Retail Preferred Tracking Stock previously issued by EchoStar and us (together, the "Tracking Stock") in exchange for 100% of the equity interests of certain EchoStar subsidiaries that held substantially all of EchoStar's former EchoStar Technologies businesses and certain other assets (collectively, the "Share Exchange"). Following the consummation of the Share Exchange, EchoStar no longer operates its former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated.

See Note 5 in our Accompanying Consolidated Financial Statements for further detail of our discontinued operations.

The Accompanying Consolidated Financial Statements have been prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"). All amounts reference results from continuing operations unless otherwise noted and are expressed in thousands of U.S. dollars, except share and per share amounts and unless otherwise noted. Additionally, certain prior period amounts have been adjusted to conform to the current period presentation.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, with respect to the annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information that we with the SEC. Our public filings are maintained on the SEC's internet site at http://www.sec.gov, which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

WEBSITE ACCESS

Our Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, may also be accessed free of charge through EchoStar's website at http://www.echostar.com, the website of our parent company EchoStar, as soon as reasonably practicable after we have electronically filed such material with, or furnished it to, the SEC.

EchoStar has adopted a written code of ethics that applies to all of our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer and controller, in accordance with the Sarbanes-Oxley Act of 2002 and the rules of the SEC promulgated thereunder. This code of ethics is available on EchoStar's corporate website at http://www.echostar.com. In the event that EchoStar makes changes in, or provides waivers of, the provisions of this code of ethics that the SEC requires EchoStar to disclose, it intends to disclose these events on its website.

ITEM 1A. RISK FACTORS

The risks and uncertainties described below are not the only ones facing us. If any of the following events occur, our business, financial condition, results of operation, prospects or ability to fund a debt repurchase program, invest capital in or otherwise run our business or execute on our strategic plans could be materially and adversely affected.

GENERAL RISKS AFFECTING OUR BUSINESS

We may pursue acquisitions, dispositions, capital expenditures, the development, acquisition and launch of new satellites and other strategic transactions to complement or expand our business, which may not be successful and we may lose a portion or all of our investment in these acquisitions and transactions.

Our future success may depend on the existence of, and our ability to capitalize on, opportunities to acquire or develop other businesses or technologies or partner with other companies that could complement, enhance or expand our current business, services or products or that may otherwise offer us growth opportunities. We may pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions or other strategic initiatives and transactions or development activities, including, without limitation, the design, development, construction, acquisition and launch of new satellites, to complement or expand our business and satellite fleet. Any such acquisitions, dispositions, activities, transactions or investments that we are able to identify and complete which may become substantial over time, involve a high degree of risk, including, but not limited to, the following:

- the risks associated with developing and constructing new satellites;
- the diversion of our management's attention from our existing business to integrate or divide the operations and personnel of the acquired, disposed or combined business, technology or joint venture and/or to engage in such investments, dispositions and/or other activities;
- the ability and capacity of our management team to carry out all of our business plans, including with respect to our existing businesses and any businesses we acquire or embark on in the future;
- possible adverse effects on our and our targets' and partners' business, financial condition or operating results during the integration process;
- exposure to significant financial losses if the transactions, activities, investments, dispositions and/or the underlying ventures are not successful and/or we are unable to achieve the intended objectives of the transaction, disposition or investment;
- the inability to obtain in the anticipated time frame, or at all, any regulatory approvals required to complete proposed acquisitions, dispositions, activities, transactions or investments;
- the risks associated with complying with regulations applicable to the acquired or developed business or technologies which may cause us to incur substantial expenses;
- the inability to realize anticipated benefits or synergies from acquisitions, dispositions, investments, alliances and/or the development and launch of new satellites;
- the disruption of relationships with employees, vendors or customers; and
- the risks associated with foreign and international operations and/or investments or dispositions.

New investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions, development activities, including, without limitation, the design, development, construction and launch of new satellites and other strategic initiatives may require the commitment of significant capital that may otherwise be directed to investments in our existing businesses.

Our strategic initiatives may not be successfully implemented, may not elicit the expected customer response in the market and may result in competitive reactions.

We intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships**,** joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow us to increase our existing market share, increase our satellite capacity, expand into new markets, obtain new customers, broaden our portfolio of services, products and intellectual property, make our business more valuable, align us for future growth and expansion, maximize the return on our investments and strengthen our business and relationships with our customers. We may allocate significant resources for long-term initiatives that may not have a short or medium-term or any positive impact on our revenue, results of operations, or cash flow. The successful implementation of our strategic initiatives requires an investment of time, talent and money and is dependent upon a number of factors some of which are not within our control. Those factors include the ability to execute such initiatives in new and existing markets, the response of existing and potential new customers and the actions or reactions of competitors. If we fail to properly execute or deliver products or services that address customers' expectations, it may have an adverse effect on our ability to retain and attract customers and may increase our costs and reduce our revenue. Similarly, competitive actions or reactions to our initiatives or advancements in technology or competitive products or services could impair our ability to execute those strategic initiatives or advancements. In addition, new strategic initiatives may face barriers to entering new or existing markets with established or new competitors. There can be no assurance that we will successfully implement these strategic initiatives or that, if successfully pursued, they will have the desired effect on our business or results of operations.

The failure to adequately anticipate the need for satellite capacity or the inability to obtain satellite capacity for our Hughes segment could harm our results of operations.

Our Hughes segment has made substantial contractual commitments for satellite capacity based on our existing customer contracts and backlog. If our existing customer contracts were to be terminated prior to their respective expiration dates, we may be committed to maintaining excess satellite capacity for which we will have insufficient revenue to cover our costs, which would have a negative impact on our margins and results of operations. Alternatively, we may not have sufficient satellite capacity available from our satellites or purchased from third parties to meet demand and we may not be able to quickly or easily adjust our capacity to changes in demand. At present, until the launch and operation of additional satellites, there is limited availability of capacity on the frequencies we use in North America, including within our own fleet of satellites, which could materially and adversely affect our ability to provide services to customers and grow our revenue and business. In addition, following the consolidation of the fixed satellite services ("FSS") industry, the main FSS providers in North America and a number of smaller regional providers own and operate the current satellites that are available for our capacity needs. The failure of any of these FSS providers to replace existing satellite assets at the end of their useful lives or a downturn in their industry as a whole could reduce the satellite capacity available to us. Our business and results of operations could be adversely affected if we are not able to renew our capacity leases at economically viable rates, or if capacity is not available due to problems experienced by these FSS providers. Our ability to provide additional capacity for subscriber growth in our North American consumer market could also be adversely affected by regulations and/or legislation in the U.S. that enable or propose to enable the use of a portion of the frequency bands, we currently use or in the future intend to use for satellite services, 5G mobile terrestrial services or other uses. These bands include the Ka-band, where we operate our broadband gateway earth stations and other bands in which we may operate in the future. Such regulation or legislation could limit our ability to use the Ka-band and/or other bands, limit our flexibility to change the way in which we use the Ka-band and/or adversely impact our ability to use additional bands in the future. Other countries in which we currently, or may in the future, operate are also considering regulations that could similarly limit access to the Ka-band or other frequency bands.

We could face decreased demand and increased pricing pressure to our products and services due to competition.

Our business operates in an intensely competitive, consumer- and enterprise-driven and rapidly changing environment and competes with a growing number of companies that provide products and services to consumer and enterprise customers. There can be no assurance that we will be able to effectively compete against our competitors due to their significant resources and operating history. Risks to our business from competition include, but are not limited to, the following:

- In our consumer market, our Hughes segment faces competition primarily from digital subscriber line ("DSL"), fiber, fixed wireless and cable internet service providers. Also, other telecommunications, satellite and wireless broadband companies have launched or are planning the launch of consumer internet access services in competition with our service offerings in North, Central and South America. Some of these competitors offer consumer services and hardware at lower prices, higher speeds and/or higher capacity than ours. In addition, terrestrial alternatives do not require our external dish, which may limit customer acceptance of our products. Further, government funding for competing products and services may reduce the demand for our products and services. We may be unsuccessful in competing effectively against DSL, fiber, fixed wireless and cable internet service providers and other satellite broadband providers, which could harm our business, operating results and financial condition.

- In our enterprise network communications market, our Hughes segment faces competition from providers of terrestrial-based networks, such as fiber, DSL, cable modem service, multiprotocol label switching and internet protocol-based virtual private networks, which may have advantages over satellite networks for certain customer applications. Although we also sell terrestrial services to this market, we may not be as cost competitive as other providers and it may become more difficult for us to compete. The network communications industry is characterized by competitive pressures to provide enhanced functionality for the same or lower price with each new generation of technology. Terrestrial-based networks are offered by telecommunications carriers and other large companies, many of which have substantially greater financial resources and greater name recognition than ours. As the prices of our products decrease, we will need to sell more products and/or reduce the per-unit costs to improve or maintain our results of operations. The costs of a satellite network may exceed those of a terrestrial-based network or other networks, especially in areas that have experienced significant DSL and cable internet build-out. It may become more difficult for us to compete with terrestrial and other providers as the number of these areas continues to increase and the cost of their network and hardware services continues to decline. Terrestrial networks also have a competitive edge over satellite networks because of lower latency for data transmission.
- Our ESS segment competes against larger, well-established satellite service companies. Because the satellite services industry is relatively mature, our strategy depends largely on our ability to displace current incumbent providers, which often have the benefit of long-term contracts with customers. These long-term contracts and other factors result in relatively high costs for customers to change service providers, making it more difficult for us to displace customers from their current relationships with our competitors. In addition, the supply of satellite capacity available in the market has increased in recent years, which makes it more difficult for us to sell our services in certain markets and to price our capacity at acceptable levels. Competition may continue to cause downward pressure on prices and further reduce the utilization of our capacity, both of which could have an adverse effect on our financial performance. Our ESS segment also competes with both fiber optic cable and terrestrial delivery systems, which may have a cost advantage, particularly in point-to-point applications where such delivery systems have been installed, and with new delivery systems being developed, which may have lower latency and other advantages.

We are dependent upon third-party providers for components, manufacturing, installation services and customer support services, and our results of operations may be materially adversely affected if any of these third-party providers fail to appropriately deliver the contracted goods or services.

We are dependent upon third-party services and products provided to us, including the following:

- ***Components***. A limited number of suppliers manufacture, and in some cases a single supplier manufactures, some of the key components required to build our products. These key components may not be continually available and we may not be able to forecast our component requirements sufficiently in advance, which may have a detrimental effect on supply. If we are required to change suppliers for any reason, we would experience a delay in manufacturing our products if another supplier is not able to meet our requirements on a timely basis. In addition, if we are unable to obtain the necessary volumes of components on favorable terms or prices on a timely basis, we may be unable to produce our products at competitive prices and we may be unable to satisfy demand from our customers. Our reliance on a single or limited group of suppliers, particularly foreign suppliers, and our reliance on subcontractors, involves several risks. These risks include a potential inability to obtain an adequate supply of required components, reduced control over pricing, quality and timely delivery of these components, and the potential bankruptcy, lack of liquidity or operational failure of our suppliers. We do not generally maintain long-term agreements with any of our suppliers or subcontractors for our products. An inability to obtain adequate deliveries or any other circumstances requiring us to seek alternative sources of supply could affect our ability to ship our products on a timely basis, which could damage our relationships with current and prospective customers and harm our business, resulting in a loss of market share and reduced revenue and income.
- ***Commodity Price Risk***. Fluctuations in pricing of raw materials can affect our product costs. To the extent that component pricing does not decline or increases, whether due to inflation, increased demand, decreased supply, trade policies, tariffs or other factors, we may not be able to pass on the impact of increasing raw materials prices, component prices or labor and other costs, to our customers, and we may not be able to operate profitably. Such changes could have an adverse impact on our product costs.
- ***Manufacturing***. While we develop and manufacture prototypes for certain of our products, we use contract manufacturers to produce a significant portion of our hardware. If these contract manufacturers fail to provide

products that meet our specifications in a timely manner, then our customer relationships and revenue may be harmed.

- ***Installation and customer support services***. Some of our products and services, such as our North American and international operations, utilize a network of third-party installers to deploy our hardware. In addition, a portion of our customer support and management is provided by third-party call centers. A decline in levels of service or attention to the needs of our customers could adversely affect our reputation, renewal rates and ability to win new business.
- ***Other services.*** Some of our products rely on third parties to provide services necessary for the operation of functionalities of the products, such as third-party cloud computing services and satellite uplink hosting services. The failure of these services could disrupt the operation of certain functionalities of our products, which could harm our customer relationship and result in a loss of sales. In addition, if the agreements for the provision of these services are terminated or not renewed, we could face difficulties replacing these service providers, which would adversely affect our ability to obtain and retain customers and result in reduced revenue and income.

Our foreign operations and investments expose us to risks and restrictions not present in our domestic operations.

Our sales outside the U.S. accounted for 21.3%, 20.2% and 28.5% of our revenue for the years ended December 31, 2019, 2018 and 2017, respectively. We expect our foreign operations to represent a significant and growing portion of our business. Over the last 10 years, we sold products in over 100 countries and began offering broadband internet services to consumers in several Central and South American countries. Our foreign operations involve varying degrees of risk and uncertainties inherent in doing business abroad. Such risks include:

- ***Complications in complying with restrictions on foreign ownership and investment and limitations on repatriation.*** We may not be permitted to own our operations in some countries and may have to enter into partnership or joint venture relationships. Many foreign legal regimes and/or our contractual arrangements restrict our repatriation of earnings to the U.S. from our subsidiaries and joint venture entities. Applicable law in such foreign countries may also limit our ability to distribute or access our assets or offer our products and services in certain circumstances. In such event, we will not have access to the cash flow and assets of our subsidiaries and joint ventures.
- ***Difficulties in following a variety of laws and regulations related to foreign operations***. Our international operations are subject to the laws and regulations of many different jurisdictions that may differ significantly from U.S. laws and regulations. For example, local privacy or intellectual property laws may hold us responsible for the data that is transmitted over our network by our customers. In addition, we are subject to the Foreign Corrupt Practices Act and similar anti-bribery laws in other jurisdictions that generally prohibit companies and their intermediaries from making improper payments or giving or promising to give anything of value to foreign officials and other individuals for the purpose of obtaining or retaining business or gaining a competitive advantage. Our policies mandate compliance with these laws. However, we operate in many parts of the world that have experienced corruption to some degree. Compliance with these laws may lead to increased operations costs or loss of business opportunities. Violations of these laws could result in fines or other penalties or sanctions, which could have a material adverse impact on our business, financial condition, results of operations or cash flow.
- ***Restrictions on space station landing/terrestrial rights***. Satellite market access and landing rights and terrestrial wireless rights are dependent on the national regulations established by foreign governments, including, but not limited to obtaining national authorizations or approvals and meeting other regulatory, coordination and registration requirements for satellites. Because regulatory schemes vary by country, we may be subject to laws or regulations in foreign countries of which we may not be aware. Non-compliance with these requirements may result in the loss of the authorizations and licenses to conduct business in these countries, as well as fines or other financial and non-financial penalties for non-compliance with regulations. If that were to be the case, we could be subject to sanctions, penalties and/or other actions by a foreign government that could materially and adversely affect our ability to operate in that country. There is no assurance that any current regulatory approvals held by us are, or will remain, sufficient in the view of foreign regulatory authorities, or that any additional necessary approvals will be granted on a timely basis or at all, in all jurisdictions in which we wish to operate new satellites, or that applicable restrictions in those jurisdictions will not be unduly burdensome. Violations of laws or regulations may result in various sanctions including fines, loss of authorizations and the denial of applications for new authorizations or for the renewal of existing

authorizations, and the failure to obtain or comply with the authorizations and regulations governing our international operations could have a material adverse effect on our ability to generate revenue and our overall competitive position.

- ***Financial and legal constraints and obligations***. Operating pursuant to foreign licenses subjects us to certain financial constraints and obligations, including, but not limited to: (a) tax liabilities that may or may not be dependent on revenue; (b) the regulatory requirements associated with maintaining such licenses, which may change over time, are subject to interpretation by foreign courts and regulatory bodies, and may result in additional costs to operate and/or fines, sanctions and penalties being imposed on us or our subsidiaries if found to be violating the terms of such licenses, any or all of which could be material; (c) the burden of creating and maintaining additional entities, branches, facilities and/or staffing in foreign jurisdictions; and (d) legal regulations requiring that we make certain satellite capacity available for "free," which may impact our revenue. In addition, if we need to pursue legal remedies against our customers or our business partners located outside of the U.S., it may be difficult for us to enforce our rights against them.
- ***Compliance with applicable export control laws and regulations in the U.S. and other countries***. We must comply with all applicable export control and trade sanctions laws and regulations of the U.S. and other countries. U.S. laws and regulations applicable to us include the Arms Export Control Act, the International Traffic in Arms Regulations ("ITAR"), the Export Administration Regulations ("EAR"), and trade sanctions laws and regulations administered by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC"). The export of certain hardware, technical data and services relating to satellites is regulated by the U.S. Department of Commerce's Bureau of Industry and Security ("BIS") under the EAR. Other items are controlled for export by the U.S. Department of State's Directorate of Defense Trade Controls under ITAR. We cannot provide equipment or services to certain countries subject to U.S. trade sanctions unless we first obtain the necessary authorizations from OFAC. Violations of these laws or regulations could result in significant sanctions including fines, more onerous compliance requirements, debarments from export privileges, or loss of authorizations needed to conduct aspects of our international business. A violation of ITAR or other export or trade-related regulations could materially adversely affect our business, financial condition and results of operations.
- ***Changes in exchange rates between foreign currencies and the U.S. dollar***. We conduct our business and incur cost in the local currency of a number of the countries in which we operate. Accordingly, our applicable results of operations are reported in the relevant local currency and then translated to U.S. dollars at the applicable currency exchange rate for inclusion in our financial statements. In addition, we sell our products and services and acquire supplies and components from countries that historically have been, and may continue to be, susceptible to recessions, instability or currency devaluation. These fluctuations in currency exchange rates, recessions and currency devaluations have affected, and may in the future affect, revenue, profits and cash earned on international sales.
- ***Greater exposure to the possibility of economic instability, the disruption of operations from labor and political disturbances, expropriation or war***. As we conduct operations throughout the world, we could be subject to regional or national economic downturns or instability, acts of terrorism, labor or political disturbances or conflicts of various sizes, including wars. Any of these disruptions could detrimentally affect our sales in the affected region or country or lead to damage to, or expropriation of, our property or danger to our personnel.
- ***Competition with large or state-owned enterprises and/or regulations that effectively limit our operations and favor local competitors***. Many of the countries in which we conduct business have traditionally had state-owned or state-granted monopolies on telecommunications services that favor an incumbent service provider. We face competition from these favored and entrenched companies in countries that have not deregulated. The slower pace of deregulation in these countries, including in Asia, Latin America, Middle East, India, Africa and Eastern Europe, has adversely affected, and is likely to continue to adversely affect, the development and growth of our business in these regions.
- ***Customer credit risks***. Customer credit risks are exacerbated in foreign operations because there is often little information available about the credit histories of customers in certain of the foreign countries in which we operate.

We may experience loss from some of our customer contracts.

We provide access to our telecommunications networks to customers that use a variety of platforms such as satellite, wireless 4G, 5G, cable, fiber optic and DSL. These customer contracts may require us to provide services at a fixed price for the term of the contract. To facilitate the provision of this access, we may enter into contracts with terrestrial platform providers. Our agreements with these subcontractors may allow for prices to be changed during the term of the contracts. We assume greater financial risk on these customer contracts than on other types of contracts because if we do not estimate costs accurately and there is an increase in our subcontractors' prices, our net profit may be significantly reduced or there may be a loss on the contracts.

We may experience significant financial losses on our existing investments.

We have entered into certain strategic transactions and investments. These investments involve a high degree of risk and could diminish our financial condition or our ability to fund a debt repurchase program or invest capital in our business. The overall sustained economic uncertainty, as well as financial, operational and other difficulties encountered by certain companies in which we have invested increases the risk that the actual amounts realized in the future on our debt and equity investments will differ significantly from the fair values currently assigned to them. In addition, the companies in which we invest or with whom we partner may not be able to compete or operate effectively or may experience bankruptcy or other liquidity or other financial stress or there may be insufficient demand for the services and products offered by these companies. These investments could also expose us to significant financial losses and may restrict our ability to make other investments or limit alternative uses of our capital resources. If our investments suffer losses, our financial condition could be materially adversely affected.

We may not be able to generate cash to meet our debt service needs or fund our operations.

As of December 31, 2019, our total indebtedness was $2.4 billion. Our ability to make payments on or to refinance our indebtedness and to fund our operations will depend on our ability to generate cash in the future, which is subject in part to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control. We may need to raise additional capital in order to fund ongoing operations or to capitalize on business opportunities. We may not be able to generate sufficient cash flow from operations and future borrowings or equity may not be available in amounts sufficient to enable us to service or repay our indebtedness or to fund our operations or other liquidity needs. If we are unable to generate sufficient cash, we may be forced to take actions such as revising or delaying our strategic plans, reducing or delaying capital expenditures and/or the development, design, acquisition and construction of new satellites, selling assets, restructuring or refinancing our debt or seeking additional equity capital. We may not be able to implement any of these actions on satisfactory terms, or at all. The indentures governing our indebtedness limit our ability to dispose of assets and use the proceeds from such dispositions. Therefore, we may not be able to consummate those dispositions on satisfactory terms, or at all, or to use those proceeds in a manner we may otherwise prefer. The Tax Cuts and Jobs Act of 2017 enacted in December 2017 (the "2017 Tax Act") limits the deductibility of interest expense for U.S. federal income tax purposes. While the 2017 Tax Act has reduced our federal income tax obligations, if these limitations or other newly enacted provisions become applicable to us, they could minimize such reductions or otherwise require us to pay additional federal income taxes, which in turn could result in additional liquidity needs.

In addition, conditions in the financial markets could make it difficult for us to access equity or debt markets at acceptable terms or at all. Instability or other conditions in the equity markets could make it difficult for us to raise equity financing without incurring substantial dilution to EchoStar's existing shareholders. In addition, sustained or increased economic weaknesses or pressures or new economic conditions may limit our ability to generate sufficient internal cash to fund investments, capital expenditures, acquisitions and other strategic transactions and/or the development, design, acquisition and construction of new satellites. We cannot predict with any certainty whether or not we will be impacted by economic conditions. As a result, these conditions make it difficult for us to accurately forecast and plan future business activities because we may not have access to funding sources necessary for us to pursue organic and strategic business development opportunities.

Covenants in our indentures restrict our business in many ways.

The indentures governing our 7 5/8% Senior Notes due 2021, 5.250% Senior Secured Notes due August 1, 2026 and 6.625% Senior Unsecured Notes due August 1, 2026 contain various covenants, subject to certain exceptions, that limit our ability and/or certain of our subsidiaries' ability to, among other things:

- incur additional debt;
- pay dividends or make distributions on our capital stock or repurchase our capital stock;
- make certain investments;

- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on our or their ability to pay dividends, make distributions, make other payments, or transfer assets.

Failure to comply with these and certain other financial covenants, if not cured or waived, may result in an event of default under the indentures, which could have a material adverse effect on our business, financial condition, results of operations or prospects. If certain events of default occur and are continuing under the respective indenture, the trustee under that indenture or the requisite holders of the notes under that indenture may declare all such notes to be immediately due and payable and, in the case of the indenture governing our secured notes, could proceed against the collateral that secures the secured notes. If certain other events of default occur, the indentures will become immediately due and payable. We and certain of our subsidiaries have pledged a significant portion of our assets as collateral to secure the 5.250% Senior Secured Notes due August 1, 2026. If we do not have enough cash to service our debt or fund other liquidity needs, we may be required to take actions such as requesting a waiver from the holders of the notes, reducing or delaying capital expenditures, selling assets, restructuring or refinancing all or part of the existing debt, or seeking additional equity capital. We cannot assure you that any of these remedies can be implemented on commercially reasonable terms or at all, which could result in the trustee declaring the notes to be immediately due and payable and/or foreclosing on the collateral.

To the extent we have available satellite capacity in our ESS segment, our results of operations may be materially adversely affected if we are not able to provide satellite services on this capacity to third parties.

While we are currently evaluating various opportunities to make profitable use of our available satellite capacity (including, but not limited to, supplying satellite capacity for new domestic and international ventures), there can be no assurance that we can successfully develop these business opportunities. If we are unable to utilize our available satellite capacity for providing satellite services to third parties our margins could be negatively impacted, and we may be required to record impairments related to our satellites.

We rely on key personnel and the loss of their services may negatively affect our businesses.

We believe that our future success depends to a significant extent upon the performance of Mr. Charles W. Ergen, our Chairman, and certain other key executives. The loss of Mr. Ergen or of certain other key executives, the ability to effectively provide for the succession of our senior management, or the ability of Mr. Ergen or such other key executives to devote sufficient time and effort to our business could have a material adverse effect on our business, financial condition and results of operations. Although some of our key executives may have agreements relating to their equity compensation that limit their ability to work for or consult with competitors, under certain circumstances, we generally do not have employment agreements with them. To the extent Mr. Ergen is performing services for both DISH Network and us, his attention may be diverted away from our business and therefore adversely affect our business.

A natural disaster could diminish our ability to provide service to our customers.

Natural disasters could damage or destroy our ground stations and/or our other or our vendors' infrastructure, equipment and facilities, resulting in a disruption of service to our customers. We currently have backup systems and technology in place to safeguard our antennas and protect our ground stations during natural disasters such as tornadoes, but the possibility still exists that our ground facilities and/or our other and our vendors' infrastructure, equipment and facilities could be impacted during a major natural disaster. If a future natural disaster impairs or destroys any of our ground facilities and/or our other and our vendors' infrastructure, equipment and facilities, we may be unable to provide service to our customers in the affected area for a period of time which may adversely affect our business and results of operations.

We may have additional tax liabilities and changes in tax laws or regulations may have a material adverse effect on our business, cash flow, financial condition or results of operations.

We are subject to income taxes in the U.S. and foreign jurisdictions. Significant judgments are required in determining our provisions for income taxes. In the course of preparing our tax provisions and returns, we must make calculations where the ultimate tax determination may be uncertain. Our tax returns are subject to examination by the Internal Revenue Service ("IRS"), state, and foreign tax authorities. There can be no assurance as to the outcome of these examinations. If the ultimate determination of taxes owed is for an amount in excess of amounts previously accrued, our operating results, cash flows, and financial condition could be adversely affected.

Additionally, new or modified income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could affect the tax treatment of our domestic and foreign earnings. Any new taxes could adversely affect our domestic and international business operations and our business and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. Future tax legislation could have a material impact on the value of our deferred tax assets and could result in increases in our future U.S. tax expense. Furthermore, changes to the taxation of undistributed foreign earnings could change our future intentions regarding reinvestment of such earnings. The foregoing items could have a material adverse effect on our business, cash flow, financial condition or results of operations.

We earn a portion of our operating income from outside the U.S., and any repatriation of funds currently held in foreign jurisdictions may result in higher effective tax rates for us. In addition, changes to U.S. tax laws have significantly impacted how U.S. multinational corporations are taxed on foreign earnings. Numerous countries are evaluating their existing tax laws due in part, to recommendations made by the Organization for Economic Co-operation and Development's Base Erosion and Profit Shifting project. Although we cannot predict whether or in what form any legislation based on such proposals may be adopted by the countries in which we do business, future tax reform based on such proposals or otherwise may increase the amount of taxes we pay and adversely affect our operating results and cash flows.

Developments with respect to trade policies, trade agreements, tariffs and related government regulations could continue to increase our costs and impact the supply of certain products we import, decrease demand for certain of our products and have a material adverse impact on our business, financial condition and results of operations.

We source certain parts, components and items used in our products from manufacturers located outside of the U.S. and we sell certain of our products to customers located outside of the U.S. Concerns have been raised about certain countries potentially engaging in unfair trade practices and, as a result, tariffs have been increased on certain goods imported into the U.S. from those countries, including China and other countries from which we import components or raw materials, and there is the possibility of additional tariff increases. The imposition of tariffs on imported products by the U.S. has triggered actions from certain foreign governments, specifically China, resulting in a "trade war". This trade war has materially increased the cost of certain products we import, impacted the supply of such products, and may require us to change our manufacturers. Although, the U.S. and China have agreed to a temporary trade deal, a potential long-term trade deal remains subject to ongoing trade talks while many of the tariffs remain in place. The outcome of the trade war, and any other governmental action related to tariffs, government regulations, or international trade agreements or policies could exacerbate adverse impacts incurred thus far and/or decrease demand for certain of our products, any or all of which could have a material adverse impact on our business, financial condition and results of operations.

RISKS RELATED TO OUR SATELLITES

Our owned and leased satellites in orbit are subject to significant operational and environmental risks that could limit our ability to utilize these satellites.

Satellites are subject to significant operational risks while in orbit. These risks include malfunctions, commonly referred to as anomalies, which have occurred and may occur in the future in our satellites and the satellites of other operators as a result of various factors, such as satellite design and manufacturing defects, problems with the power systems or control systems of the satellites, general failures resulting from operating satellites in the harsh environment of space and cyber-attacks on our satellites.

Although we work closely with the satellite manufacturers to determine and eliminate the cause of anomalies in new satellites and provide for redundancies of many critical components in the satellites, we may not be able to prevent anomalies or outages from occurring and may experience anomalies and outages in the future, whether of the types described above or arising from the failure of other systems or components. The failure to perform of any of our manufacturers which provide in-orbit anomaly support for our satellites could result in our inability to determine, eliminate or manage anomalies for our satellites. Even if alternate in-orbit anomaly support services are available, we may have difficulty identifying them in a timely manner or we may incur significant additional expense in changing suppliers. Space Systems/Loral ("SSL"), a subsidiary of Maxar Techonologies Inc. ("Maxar"), provides in-orbit anomaly support for several of our satellites. A decision by Maxar to discontinue, wind down or otherwise significantly modify its geostationary communications satellite business could have a material adverse impact on the operation of several of our satellites, including our ability to remedy any anomalies or outages.

Any single anomaly or outage or series of anomalies or outages could materially and adversely affect our ability to utilize the satellite, our operations, services and revenue as well as our relationships with current customers and our ability to attract new customers. In particular, future anomalies or outages may result in, among other things, the loss of individual transponders/beams and/or functional solar array circuits on a satellite, a group of transponders/beams on that satellite or the entire satellite, depending on the nature of the anomaly or outage. Anomalies or outages may also reduce the expected capacity, commercial operation and/or useful life of a satellite, thereby reducing the revenue that could be generated by that satellite, or create additional expenses due to the need to provide replacement or back-up satellites or satellite capacity earlier than planned and could have a material adverse effect on our business, financial condition and results of operations.

The loss of a satellite or other satellite malfunctions or anomalies or outages could have a material adverse effect on our financial performance, which we may not be able to mitigate by using available capacity on other satellites. There can be no assurance that we can recover critical transmission capacity in the event one or more of our in-orbit satellites were to fail. In addition, the loss of a satellite or other satellite malfunctions or anomalies or outages could affect our ability to comply with Federal Communications Commission ("FCC") and other regulatory obligations and our ability to fund the construction or acquisition of replacement satellites for our in-orbit fleet in a timely fashion, or at all. There can be no assurance that anomalies or outages will not impact the remaining useful life and/or the commercial operation of any of the satellites in our fleet. In addition, there can be no assurance that we can recover critical transmission capacity in the event one or more of our in-orbit satellites were to fail.

Meteoroid events pose a potential threat to all in-orbit satellites. The probability that meteoroids will damage those satellites increases significantly when the Earth passes through the particulate stream left behind by comets. Occasionally, increased solar activity also poses a potential threat to all in-orbit satellites.

Some decommissioned satellites are in uncontrolled orbits, which pass through the geostationary belt at various points and present hazards to operational satellites, including our satellites. We may be required to perform maneuvers to avoid collisions and these maneuvers may prove unsuccessful or could reduce the useful life of the satellite through the expenditure of fuel to perform these maneuvers. The loss, damage or destruction of any of our satellites as a result of an electrostatic storm, collision with space debris, malfunction or other event could have a material adverse effect on our business, financial condition and results of operations.

We generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. If one or more of our in-orbit uninsured satellites or payloads fail, we could be required to record significant impairment charges for the satellite or payload.

Our satellites have minimum design lives of 15 years, but could fail or suffer reduced capacity before then.

Generally, the minimum design life of each of our satellites is 15 years. We can provide no assurance, however, as to the actual operational lives of our satellites, which may be shorter or longer than their design lives. Our ability to earn revenue depends on the continued operation of our satellites, each of which has a limited useful life. Several factors affect the useful lives of the satellites, including, among other things, the quality of their design and construction, the durability of their component parts, the ability to continue to maintain proper orbit and control over the satellite's functions, the efficiency of the launch vehicle used, and the remaining on-board fuel following orbit insertion. In addition, continued improvements in satellite technology may make obsolete our existing satellites, or any satellites we may acquire in the future, prior to the end of their design lives.

In the event of a failure or loss of any of our satellites, we may relocate another satellite and use it as a replacement for the failed or lost satellite, which could have a material adverse effect on our business, financial condition and results of operations. Additionally, such relocation would require governmental approval. We cannot be certain that we could obtain such governmental approval. In addition, we cannot guarantee that another satellite will be available for use as a replacement for a failed or lost satellite, or that such relocation can be accomplished without a substantial utilization of fuel. Any such utilization of fuel would reduce the operational life of the replacement satellite.

Our satellites under construction are subject to risks related to construction, technology, regulations and launch that could limit our ability to utilize these satellites and adversely affect our business and financial condition.

Satellite construction and launch are subject to significant risks, including delays, anomalies, launch failure and incorrect orbital placement. The technologies in our satellite designs are very complex and difficulties in constructing our designs could result in delays in the deployment of our satellites or increased or unanticipated costs. There also can be no assurance that the technologies in our existing satellites or in new satellites that we design, acquire and build will work as we expect and/or will not become obsolete, that we will realize any or all of the anticipated benefits of our satellite designs or our new satellites, or that we will obtain all regulatory approvals required to operate our new or acquired satellites. In addition, certain launch vehicles that may be used by us have either unproven track records or have experienced launch failures in the past. The risks of launch delay, launch anomalies and launch failure are usually greater when the launch vehicle does not have a track record of previous successful flights. Launch anomalies and failures can result in significant delays in the deployment of satellites because of the need both to construct replacement satellites, which can take significant amounts of time, and to obtain other launch opportunities. Such significant delays could materially and adversely affect our business, expenses and results of operations, our ability to meet regulatory or contractual required milestones, the availability and our use of other or replacement satellite resources and our ability to provide services to customers as capacity becomes full on existing satellites. In addition, significant delays in a satellite program could give customers who have purchased or reserved capacity on that satellite a right to terminate their service contracts relating to the satellite. We may not be able to accommodate affected customers on other satellites until a replacement satellite is available. A customer's termination of its service contracts with us as a result of a launch delay or failure would reduce our contracted backlog and our ability to generate revenue. One of our potential launch services providers is a Russian Federation state-owned company. Certain ongoing political events have created uncertainty as to the stability of U.S. and Russian Federation relations. This could add to risks relative to scheduling uncertainties and timing. If a launch delay, anomaly or failure were to occur, it could result in the revocation of the applicable license to operate the satellite, undermine our ability to implement our business strategy or develop or pursue existing or future business opportunities with applicable licenses and otherwise have a material adverse effect on our business, expenses, assets, revenue, results of operations and ability to fund future satellite procurement and launch opportunities. Historically, we have not always carried launch insurance for the launch of our satellites and the occurrence of launch anomalies and failures, whether on our satellites or those of others, may significantly reduce our ability to place launch insurance for our satellites or make launch insurance uneconomical.

Our use of certain satellites is often dependent on satellite coordination agreements, which may be difficult to obtain.

Satellite transmissions and the use of frequencies often are dependent on coordination with other satellite systems and telecommunications providers operated by U.S. or foreign entities, including governments, and it can be difficult to determine the outcome of these coordination agreements with these other entities and governments. The impact of a coordination agreement may result in the loss of rights to the use of certain frequencies or access to certain markets. The significance of such a loss would vary and it can therefore be difficult to determine which portion of our revenue will be impacted.

In the event the international coordination process that is triggered by the International Telecommunication Union ("ITU") filings under applicable rules is not successfully completed, or that the requests for modification of the broadcast satellite services plan regarding the allocation of orbital locations and frequencies are not granted by the ITU, we will have to operate the applicable satellite(s) on a non-interference basis, which could have an adverse impact on our business operations. If we cannot do so, we may have to cease operating such satellite(s) at the affected orbital locations, which could have a material adverse effect on our business, results of operations and financial position.

Furthermore, the satellite coordination process is conducted under the guidance of the ITU radio regulations and the national regulations of the satellites involved in the coordination process. These rules and regulations could be amended and could therefore materially adversely affect our business, financial condition and results of operations.

We may face interference from other services sharing satellite spectrum.

The FCC and other regulators have adopted rules or may adopt rules in the future that allow non-geostationary orbit satellite services and/or fixed and mobile terrestrial systems to operate on a co-primary basis in the same frequency band as mobile satellite services ("MSS") and FSS. In addition, the FCC and other regulators may make changes that could affect the use of spectrum for MSS and FSS. Despite regulatory provisions designed to protect MSS and FSS operations from harmful interference, there can be no assurance that operations by other satellites or terrestrial communication services in the MSS and FSS bands will not interfere with our MSS and FSS operations and adversely affect our business.

Our dependence on outside contractors could result in delays related to the design, manufacture and launch of our new satellites, which could in turn adversely affect our operating results.

There are a limited number of manufacturers that are able to design and build satellites according to the technical specifications and standards of quality we require, including Airbus Defence and Space, Boeing Satellite Systems, Lockheed Martin, SSL and Thales Alenia Space. There are also a limited number of launch service providers that are able to launch such satellites, including International Launch Services, Arianespace, Lockheed Martin Commercial Launch Services and Space Exploration. The failure to perform of any of our manufacturers or launch service providers could increase the cost and result in the delay of the design, construction or launch of our satellites. Even if alternate suppliers for such services are available, we may have difficulty identifying them in a timely manner or we may incur significant additional expense in changing suppliers, and this could result in difficulties or delays in the design, construction or launch of our satellites. For example, if SSL, the manufacturer of our EchoStar XXIV satellite, or any potential successor fails to meet or is delayed in meeting its contractual obligations regarding the timely manufacture and delivery of the satellite for any reason, including if Maxar decides to discontinue, wind down or otherwise significantly modify its geostationary communications satellite business, such failure could have a material adverse effect on completing the manufacture of the EchoStar XXIV satellite and, like any other delays in the design, construction or launch of our other satellites, could have a material adverse impact on our business operations, future revenues, financial position and prospects.

RISKS RELATED TO OUR PRODUCTS AND TECHNOLOGY

If we are unable to properly respond to technological changes, our business could be significantly harmed.

Our business and the markets in which we operate are characterized by rapid technological changes, evolving industry standards and frequent product and service introductions and enhancements. If we or our suppliers are unable to properly respond to or keep pace with technological developments, fail to develop new technologies, or if our competitors obtain or develop proprietary technologies that are perceived by the market as being superior to ours, our existing products and services may become obsolete and demand for our products and services may decline. Even if we keep up with technological innovation, we may not meet the demands of the markets we serve. Furthermore, after we have incurred substantial research and development costs, one or more of the technologies under our development, or under development by one or more of our strategic partners, could become obsolete prior to its introduction. If we are unable to respond to or keep pace with technological advances on a cost-effective and timely basis, or if our products, applications or services are not accepted by the market, then our business, financial condition and results of operations could be adversely affected.

Our response to technological developments depends, to a significant degree, on the work of technically skilled employees. Competition for the services of such employees has become more intense as demand for these types of employees grows. We compete with other companies for these employees and although we strive to attract and retain these employees, we may not succeed in these respects. Additionally, if we were to lose certain key technically skilled employees, the loss of knowledge and intellectual capital might have an adverse impact on business, financial condition and results of operations.

We have made and will continue to make significant investments in research, development, and marketing for new products, services, satellites and related technologies, as well as entry into new business areas. Investments in new technologies, satellites and business areas are inherently speculative and commercial success thereof depends on numerous factors including innovativeness, quality of service and support, and effectiveness of sales and marketing. We may not achieve revenue or profitability from such investments for a number of years, if at all. Moreover, even if such products, services, satellites, technologies and business areas become profitable, their operating margins may be minimal.

Our future growth depends on growing demand for advanced technologies.

Future demand and effective delivery for our products will depend significantly on the growing demand for advanced technologies, such as broadband internet connectivity. If the deployment of, or demand for, advanced technologies is not as widespread or as rapid as we or our customers expect, our revenue growth will be negatively impacted.

Our business depends on certain intellectual property rights and on not infringing the intellectual property rights of others. The loss of our intellectual property rights or our infringement of the intellectual property rights of others could have a significant adverse impact on our business.

We rely on our patents, copyrights, trademarks and trade secrets, as well as licenses and other agreements with our vendors and other parties, to use our technologies, conduct our operations and sell our products and services. Legal challenges to our intellectual property rights and claims by third parties of intellectual property infringement could require that we 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 or from the continuation of our businesses as currently conducted or as we plan to conduct it, which could require us to change our business practices or limit our ability to compete effectively or could otherwise have an adverse effect on our business, financial condition, results of operations or prospects. Even if any such challenges or claims prove to be without merit, they can be time-consuming and costly to defend and may divert management's attention and resources away from our business.

Moreover, due to the rapid pace of technological change, we rely in part on technologies developed or licensed by third parties, and if we are unable to obtain or continue to obtain licenses or other required intellectual property rights from these third parties on reasonable terms, our business, financial position and results of operations could be adversely affected. Technology licensed from third parties or developed by us may have undetected errors that impair the functionality or prevent the successful integration of our products or services. As a result of any such changes or loss, we may need to incur additional development costs to ensure continued performance of our products or suffer delays until replacement technology, if available, can be obtained and integrated.

In addition, we work with third parties such as vendors, contractors and suppliers for the development and manufacture of components that are integrated into our products and our products may contain technologies provided to us by these third parties. We may have little or no ability to determine in advance whether any such technology infringes the intellectual property rights of others, or whether such vendors have obtained or continue to obtain the appropriate licenses or other intellectual property rights to use such technology. Our vendors, contractors and suppliers may not be required to indemnify us in the event that a claim of infringement is asserted against us, or they may be required to indemnify us only up to a maximum amount, above which we would be responsible for any further costs or damages. Legal challenges to these intellectual property rights may impair our ability to use the products and technologies that we need in order to operate our business and may materially and adversely affect our business, financial condition and results of operations.

We are, and may become, party to various lawsuits which, if adversely decided, could have a significant adverse impact on our business, particularly lawsuits regarding intellectual property.

We are, and may become, subject to various legal proceedings and claims, which arise both in and out of the ordinary course of our business. Many entities, including some of our competitors, have or may in the future obtain patents and other intellectual property rights that cover or affect products or services related to those that we offer. In general, if a court determines that one or more of our products or services infringes valid intellectual property rights held by others, we may be required to cease developing or marketing those products or services, to obtain licenses from the holders of the intellectual property at a material cost, to pay damages or to redesign those products or services in such a way as to avoid infringement. If those intellectual property rights are held by a competitor, we may be unable to license the necessary intellectual property rights at any price, which could adversely affect our competitive position.

We may not be aware of all patents and other intellectual property rights that our products and services may potentially infringe. In addition, patent applications in the U.S. and foreign countries are confidential until the appropriate patent governing body either publishes the application or issues a patent (whichever arises first) and, accordingly, our products may infringe claims contained in pending patent applications of which we are not aware. Further, the process of determining definitively whether a patent claim is valid and whether a particular product infringes a valid patent claim often involves expensive and protracted litigation, even if we are ultimately successful on the merits.

We cannot estimate the extent to which we may be required in the future to obtain licenses with respect to intellectual property rights held by others and the availability and cost of any such licenses. Those costs, and their impact on our results of operations, could be material. Damages in patent infringement cases can be substantial, and in certain circumstances, can be trebled. To the extent that we are required to pay unanticipated royalties to third parties, these increased costs of doing business could negatively affect our liquidity and operating results. We from time to time may defend patent infringement actions and may from time to time assert our own actions against parties we suspect of infringing our patents and trademarks. We cannot be certain the courts will conclude these companies do not own the rights they claim, that these rights are not valid, or that our products and services do not infringe on these rights. We also cannot be certain that we will be able to obtain licenses from these persons on commercially reasonable terms or, if we were unable to obtain such licenses, that we would be able to redesign our products and services to avoid infringement. The legal costs associated with defending patent suits and pursuing patent claims against others may be borne by us if we are not awarded reimbursement through the legal process. See further discussion under Item 3. - Legal Proceedings of this Form 10-K.

Litigation or governmental proceedings could result in material adverse consequences, including judgments or settlements.

We are involved in lawsuits, regulatory inquiries, audits, consumer claims and governmental and other legal proceedings arising from of our business, including new products and services that we may offer. Some of these proceedings may raise difficult and complicated factual and legal issues and can be subject to uncertainties and complexities. The timing of the final resolutions to lawsuits, regulatory inquiries, audits, and governmental and other legal proceedings is typically uncertain. Additionally, the possible outcomes of, or resolutions to, these proceedings could include adverse judgments, settlements, injunctions or liabilities, any of which could require substantial payments or have other adverse impacts on our revenue, results of operations or cash flow.

If the encryption and related security technology used in our products is compromised, sales of our products may decline.

Our customers use encryption and related security technology obtained from us or our suppliers in the products that they purchase from us to protect their data and products from unauthorized access to the features or functionalities of such products. Such encryption and related security technology has been compromised in the past and may be compromised in the future even though we continue to respond with significant investment in security measures, such as updates in security software, that are intended to make data theft more difficult. It has been our prior experience that security measures may only be effective for short periods of time or not at all. We cannot ensure that we will be successful in reducing or controlling theft of our customers' data. As a result, sales of our products may decline, our reputation and customer relationship could be damaged and we may incur additional costs or financial liability in the future if security of our customers' system is compromised.

We may be exposed to financial and reputational damage to our business by cybersecurity incidents.

We and third parties with whom we work face a constantly developing landscape of cybersecurity threats in which hackers and other parties use a complex assortment of techniques and methods to execute cyber-attacks, including but not limited to the use of stolen access credentials, social engineering, malware, ransomware, phishing, insider threats (which may be malicious or erroneous), structured query language injection attacks and distributed denial-of-service attacks. Cybersecurity incidents such as these have increased significantly in quantity and severity and are expected to continue to increase. Additionally, the risk of cyber-attacks and compromises will likely increase as we continue to expand our business into other areas of the world outside of North America, some of which are still developing their cybersecurity infrastructure maturity. Should we be affected by a material cyber-related incident, we may incur substantial costs and suffer other negative consequences, which may include:

- significant remediation costs, such as liability for stolen assets or information, repairs of system damage and/or incentives to customers or business partners in an effort to maintain relationships after an attack;
- significant increased cybersecurity protection costs, which may include the costs of making organizational changes, deploying additional personnel and protection technologies, training employees and engaging third party experts and consultants;
- material increased liability due to financial or other harm inflicted on our partners;
- loss of material revenues resulting from attacks on our satellites or technology, the unauthorized use of proprietary information or the failure to retain or attract customers following an attack;
- significant litigation and legal risks, including regulatory actions by state, federal and international regulators; and
- loss of or damage to reputation.

Our business is subject to varying degrees of regulation that include programs designed to review our protections against cybersecurity threats and risks. If it is determined that our systems do not reasonably protect our partners' assets and data and/or that we have violated these regulations, we could be subject to enforcement activity and sanctions.

We regularly review and revise our internal cybersecurity policies and procedures, invest in and maintain internal and external cybersecurity teams and systems and software to detect, deter, prevent and/or mitigate cyber-attacks and review, modify and supplement our defenses through the use of various services, programs and outside vendors. It is impossible, however, for us to know when or if any particular cyber-attack may arise or the impact on our business and operations of any such incident. We expect to continue to incur increasing costs in preparing our infrastructure and maintaining it to resist any such attacks. There can be no assurance that we can successfully detect, deter, prevent or mitigate the effects of cyber-attacks, any of which could have a material adverse effect on our business, costs, operations, prospects, results of operation or financial position. Furthermore, the amount and scope of insurance that we maintain against losses resulting from these events may not be sufficient to compensate us adequately for any disruptions to our business or otherwise cover our losses, including reputational harm and negative publicity as well as any litigation liability.

Compliance with data privacy laws may be costly, and non-compliance with such laws may result in significant liability.

The personal information and data that we process and store is increasingly subject to the data security and data privacy laws of many jurisdictions. These laws may conflict with one another, and many of them are subject to frequent modification and differing interpretations. The laws impose a significant compliance burden and complying with them has required us to change our business practices or the functionality of our products and services. Although we have made efforts to design our policies, procedures, and systems to comply with the current requirements of applicable state, federal, and foreign laws, changes to applicable laws and regulations and the implementation of new laws and regulations in this area could subject us to additional regulation and oversight, any of which could significantly increase our operating costs, restrict our business operations and result in changes that are adverse to our customers. In addition, violations of these laws can result in significant fines, penalties, claims by regulators or other third parties, and damage to our brand and business.

If our products contain defects, we could be subject to significant costs to correct such defects and our product and network service contracts could be delayed or cancelled, which could adversely affect our revenue.

The products and the networks we deploy are highly complex, and some may contain defects when first introduced or when new versions or enhancements are released, despite testing and our quality control procedures. For example, our products may contain software “bugs” that can unexpectedly interfere with their operation. Defects may also occur in components and products that we purchase from third parties. In addition, many of our products and network services are designed to interface with our customers’ existing networks, each of which has different specifications and utilize multiple protocol standards. Our products and services must interoperate with the other products and services within our customers’ networks, as well as with future products and services that might be added to these networks, to meet our customers’ requirements. There can be no assurance that we will be able to detect and fix all defects in the products and networks we sell. The occurrence of any defects, errors or failures in our products or network services could result in (i) additional costs to correct such defects; (ii) cancellation of orders and lost revenue; (iii) a reduction in revenue backlog; (iv) product returns or recalls; (v) diversion of our resources; (vi) the issuance of credits to customers and other losses to us, our customers or end-users; (vii) liability for harm to persons and property caused by defects in or failures of our products or services; and (viii) harm to our reputation if we fail to detect or effectively address such issues through design, testing or warranty repairs. Any of these occurrences could also result in the loss of or delay in market acceptance of our products and services and loss of sales, which would harm our reputation and our business and materially adversely affect our revenue and profitability.

RISKS RELATED TO THE REGULATION OF OUR BUSINESS

Our business is subject to risks of adverse government regulation.

Our business is subject to varying degrees of regulation in the U.S. by the FCC, and other federal, state and local entities, and in foreign countries by similar entities and internationally by the ITU. These regulations are subject to the administrative and political process and do change, for political and other reasons, from time to time and may limit or constrain and/or have other adverse effects on and implications for our business and operations. The U.S. and foreign countries in which we currently, or may in the future, operate may not authorize us access to all of the spectrum that we need to provide service in a particular country. Moreover, the U.S. and a substantial number of foreign countries in which we have, or may in the future make, an investment, regulate, in varying degrees, the ownership of satellites and other telecommunication facilities/networks and foreign investment in telecommunications companies. Violations of laws or regulations may result in various sanctions including fines, loss of authorizations and the denial of applications for new authorizations or for the renewal of existing authorizations. Further material changes in law and regulatory requirements may also occur, and there can be no assurance that our business and the business of our subsidiaries and affiliates will not be adversely affected by future legislation, new regulation or deregulation. The failure to obtain or comply with the authorizations and regulations governing our operations could have a material adverse effect on our ability to generate revenue or pursue our business strategies and our overall competitive position and could result in our suffering serious harm to our reputation.

Our business depends on regulatory authorizations issued by the FCC and state and foreign regulators that can expire, be revoked or modified, and applications for licenses and other authorizations that may not be granted.

Generally all satellite, earth stations and other licenses granted by the FCC and most other countries are subject to expiration unless renewed by the regulatory agency. Our satellite licenses are currently set to expire at various times. In addition, we occasionally receive special temporary authorizations that are granted for limited periods of time (e.g., 180 days or less) and subject to possible renewal. Generally, our licenses and special temporary authorizations have been renewed on a routine basis, but there can be no assurance that this will continue. In addition, we must obtain new licenses from the FCC and other countries' regulators for the operation of new satellites that we may build and/or acquire. There can be no assurance that the FCC or other regulators will continue granting applications for new licenses or for the renewal of existing ones. If the FCC or other regulators were to cancel, revoke, suspend, or fail to renew any of our licenses or authorizations, fail to grant or impose conditions on our applications for FCC or other licenses, it could have a material adverse effect on our business, financial condition and results of operations. Specifically, loss of a frequency authorization or limitations on our ability to use the frequencies we currently use and/or intend to use in the future would reduce the amount of spectrum available to us, potentially reducing the amount of services we provide to our customers. The significance of such a loss of authorizations would vary based upon, among other things, the orbital location, the frequency band and the availability of replacement spectrum. In addition, the legislative and executive branches of the U.S. government and foreign governments often consider legislation and regulatory requirements that could affect us, as could the actions that the FCC and foreign regulatory bodies take. We cannot predict the outcomes of these legislative or regulatory proceedings or their effect on our business.

In addition, third parties have or may oppose some of our license applications and pending and future requests for extensions, modifications, waivers and approvals of our licenses. Even if we have fully complied with all of the required reporting, filing and other requirements in connection with our authorizations, it is possible a regulator could decline to grant certain of our applications or requests for authority, or could revoke, terminate, condition or decline to modify, extend or renew certain of our authorizations or licenses.

Further, we rely on subcontractors to provide us with certain goods and services that may require their compliance with our licenses and other authorizations. In the event that their provision of these goods and services are not in compliance with such licenses and other authorizations, we may be subject to fines or other penalties and/or the applicable regulator may cancel, revoke, suspend, or fail to renew any of our licenses or authorizations.

We may face difficulties in accurately assessing and collecting contributions towards the USF.

Because our customer contracts often include both telecommunications services, which create obligations to contribute to the USF, and other goods and services, which do not, it can be difficult to determine what portion of our revenue forms the basis for our required contribution to the USF and the amount that we can recover from our customers. If the FCC, which oversees the USF, or a court or other governmental entity were to determine that we computed our USF contribution obligation incorrectly or passed the wrong amount onto our customers, we could become subject to additional assessments, liabilities, or other financial penalties. In addition, the FCC is considering substantial changes to its USF contribution and distribution rules. These changes could impact our future contribution obligations and those of third parties that provide communication services to our business. Any such change to the USF contribution rules could adversely affect our costs of providing service to our customers. In addition, changes to the USF distribution rules could intensify the competition we face by offering subsidies to competing firms and/or technologies.

Restrictions on immigration or increased enforcement of immigration laws could limit our access to qualified and skilled professionals, increase our cost of doing business or otherwise disrupt our operations.

The success of our business is dependent on our ability to recruit engineers and other professionals. Immigration laws in the U.S. and other countries in which we operate are subject to legislative changes, as well as variations in the standards of application and enforcement due to political forces and economic conditions. It is difficult to predict the political and economic events that could affect immigration laws, or the restrictive impact they could have on obtaining or renewing work visas for our professionals. If immigration laws are changed or if new more restrictive government regulations are enacted or increased, our access to qualified and skilled professionals may be limited, the costs of doing business may increase and our operations may be disrupted.

RISKS RELATING TO THE BSS TRANSACTION

Certain of our directors and executive officers have interests in the BSS Transaction.

Certain of our directors and executive officers have interests in the BSS Transaction. Our directors and executive officers who own shares of EchoStar's common stock participated in the Distribution and the Merger on the same terms as EchoStar's other stockholders. Additionally, Mr. Ergen, director of both us and DISH, serves as a director and executive officer of BSS Corp. following the consummation of the BSS Transaction. We and the EchoStar parties that approved the BSS Transaction, as described below, were aware of and considered these interests, among other things, in deciding to approve the terms of the Master Transaction Agreement and the BSS Transaction.

The BSS Transaction was approved, in accordance with EchoStar's longstanding related party transaction policy, by (i) EchoStar's independent management, (ii) EchoStar's non-interlocking directors (i.e., directors who are not also directors or employees of DISH Network), with EchoStar's director, Mr. R. Stanton Dodge, recusing himself to avoid the appearance of any potential conflict resulting from his prior employment with DISH Network and EchoStar's director, Mr. Anthony M. Federico, recusing himself to avoid the appearance of any potential conflict resulting from his service on DISH's special litigation committee, (iii) EchoStar's audit committee, with Mr. Federico recusing himself and, after all such approvals were obtained (iv) our and EchoStar's board of directors, with, our and EchoStar's chairman, Mr. Ergen, recusing himself. Applicable portions of BSS Transaction were also approved by our board of directors.

If the Distribution and the Merger do not qualify as a tax-free distribution and merger under the Internal Revenue Code of 1986, as amended (the "Code"), then we and/or EchoStar stockholders may be required to pay substantial U.S. federal income taxes and under certain circumstances we may have indemnification obligations to DISH Network.

The parties to the BSS Transaction received a tax opinion from their respective counsels as to the tax-free nature of the transactions. They did not obtain a private letter ruling from the IRS with respect to the Distribution and the Merger and instead are relying solely on their respective tax opinions for comfort that the Distribution and the Merger qualify for tax-free treatment for U.S. federal income tax purposes under the Code.

The tax opinions were based on, among other things, certain undertakings made by EchoStar and DISH Network, as well as certain representations and assumptions as to factual matters made by EchoStar, DISH Network, and Mr. and Mrs. Ergen. The failure of any factual representation or assumption to be true, correct and complete, or any undertaking to be fully complied with, could affect the validity of the tax opinions. An opinion of counsel represents counsel's best legal judgment, is not binding on the IRS or the courts, and the IRS or the courts may not agree with the conclusions set forth in the tax opinions. In addition, the tax opinions were based on then-current law, and cannot be relied upon if current law changes with retroactive effect.

If the Distribution does not qualify as a tax-free distribution under Section 355 of the Code, then EchoStar would recognize a substantial gain on the Distribution, we and EchoStar's stockholders could incur significant U.S. federal income tax liabilities, and EchoStar could be required to indemnify DISH Network for the tax on such gain if the failure of the Distribution to so qualify is the result of certain actions or misrepresentations by EchoStar, but EchoStar will not be required to indemnify any of its stockholders. In the event EchoStar is required to indemnify DISH Network for taxes incurred in connection with the BSS Transaction, the indemnification obligation could have a material adverse effect on our and EchoStar's business, financial conditions, results or operations and cash flow.

Even if the Distribution otherwise qualifies as a tax-free distribution, the Distribution would be taxable to us and EchoStar (but not to its stockholders) pursuant to Section 355(e) of the Code if one or more persons acquire a 50% or greater interest (measured by vote or value) in EchoStar's or BSS Corp.'s stock, directly or indirectly (including through acquisitions of the BSS Common Stock or DISH Common Stock after the completion of the BSS Transaction), as part of a plan or series of related transactions that includes the Distribution. If there is a change of control of DISH Network or BSS Corp. after the completion of the BSS Transaction or a transfer of stock or assets of DISH Network or BSS Corp. that results in the Distribution being taxable to us and/or EchoStar under Section 355(e) of the Code, DISH Network would be required to indemnify EchoStar (but not its stockholders) for such taxes only if DISH Network took an action or knowingly facilitated, consented to or assisted with an action by a DISH shareholder that caused the Distribution to fail to qualify as a tax-free distribution. In addition, the Merger being taxable could cause the Distribution to fail to qualify as a tax-free distribution.

A putative class action lawsuit relating to the BSS Transaction has been filed against EchoStar, Hughes Satellite Systems Corporation, DISH Network, Mr. Ergen and certain of our and EchoStar's officers and other lawsuits related to the BSS Transaction may be filed against us, EchoStar, DISH Network and other persons which could result in substantial costs.

On July 2, 2019, a complaint was filed by purported EchoStar stockholders. See Note 17 in our Accompanying Consolidated Financial Statements for more information about litigation related to the BSS Transaction that has been commenced prior to the date of this report. There can be no assurance that additional complaints will not be filed with respect to the BSS Transaction.

Even if this lawsuit and any others that may be filed are without merit, defending against these claims can result in substantial costs and divert management time and resources. An adverse judgment could result in monetary damages, which could have a negative impact on our liquidity and financial condition.

Our ability to operate and control our satellites is subject to risks related to DISH Network's operation of the BSS Business.

In connection with the BSS Transaction, we transferred our satellite operation centers, which are used to monitor and control our satellites, to DISH Network. DISH Network may not be able to successfully or profitably operate, maintain and manage the BSS Business and its employees, including the operations and employees of the satellite operations centers. DISH Network may not be able to maintain uniform standards, controls, procedures and policies or comply with regulations with respect to the satellite operations centers, and this may lead to operational failures or inefficiencies. A failure or inefficiency at any of the satellite operations centers could cause a significant loss of service for our customers or might cause the transmission of incorrect commands to the affected satellite(s), which could lead to a temporary or permanent degradation in satellite performance or to the loss of one or more of our satellites. Any such failure could have a material adverse impact on our business, financial condition, and results of operations.

We may be more susceptible to adverse events as a result of the BSS Transaction.

We have divested the BSS Business and our business will be subject to increased concentration of risks that affect our retained businesses. We are now a smaller, less diversified and more narrowly focused business, which makes us more vulnerable to changing market and economic conditions. Operating as a smaller entity may reduce or eliminate some of the benefits and synergies which previously existed across our business platforms, including our operating diversity, purchasing and borrowing leverage, available capital, and relationships and opportunities to pursue integrated strategies within our businesses and attract, retain and motivate key employees. In addition, as a smaller company, our ability to absorb costs may be negatively impacted, including the significant cost of the BSS Transaction and/or litigations or other adverse rulings or proceedings, and we may be unable to obtain financing, goods or services at prices or on terms as favorable as those obtained prior to the BSS Transaction. Any of these factors could have a material adverse effect on our business, financial condition, results of operations, cash flows, business prospects and the trading price of our common stock.

We might not be able to engage in certain strategic transactions because EchoStar has agreed to certain restrictions to comply with U.S. federal income tax requirements for a tax-free spin-off.

To preserve the intended tax treatment of the Distribution, EchoStar has agreed to comply with certain restrictions under current U.S. federal income tax laws for spin-offs, including: (i) refraining from engaging in certain transactions that would result in a fifty percent or greater change by vote or by value in its and our ownership; (ii) continuing to own and manage its and our historic business; and (iii) limiting sales or redemptions of its common stock. These restrictions could prevent EchoStar or us from pursuing otherwise attractive business opportunities, result in our or EchoStar's inability to respond effectively to competitive pressures, industry developments and future opportunities and may otherwise harm its or our business, financial results and operations. If these restrictions, among others, are not followed, the Distribution could be taxable to us and EchoStar and possibly its stockholders.

OTHER RISKS

We are a wholly owned subsidiary of EchoStar and do not operate as an independent company.

We rely on EchoStar for a substantial portion of our administrative and management functions and services including human resources-related functions, accounting, tax administration, legal, external reporting, treasury administration, internal audit and insurance functions, information technology and telecommunications services and other support services. We do not have systems and resources in place to perform all of these functions or services. Instead, we generally receive these services pursuant to arrangements between us and EchoStar and its other subsidiaries. EchoStar and its other subsidiaries in turn receive certain of these services from DISH Network pursuant to a professional services agreement entered into between them. If our intercompany arrangements with EchoStar and its other subsidiaries were to terminate, or if EchoStar and its other subsidiaries no longer receive certain services from DISH Network, we would need to obtain agreements with third-party service providers or obtain additional internal resources, neither of which may be available on acceptable terms or at all.

Our parent, EchoStar, is controlled by one principal stockholder who is our Chairman.

Charles W. Ergen, our Chairman, beneficially owns approximately 51% of EchoStar's total equity securities (assuming conversion of only the EchoStar Class B common stock beneficially owned by Mr. Ergen into EchoStar Class A common stock and giving effect to the exercise of options held by Mr. Ergen that are either currently exercisable as of, or may become exercisable within 60 days after, February 10, 2020) and beneficially owns approximately 91% of the total voting power of all classes of shares of EchoStar (assuming no conversion of any EchoStar Class B common stock and giving effect to the exercise of options held by Mr. Ergen that are either currently exercisable as of, or may become exercisable within 60 days after, February 10, 2020). Through his beneficial ownership of EchoStar's equity securities, Mr. Ergen has the ability to elect a majority of EchoStar's directors and to control all other matters requiring the approval of EchoStar's stockholders. As a result of Mr. Ergen's voting power, EchoStar is a "controlled company" as defined in the NASDAQ listing rules and, therefore, is not subject to NASDAQ requirements that would otherwise require EchoStar to have (i) a majority of independent directors; (ii) a nominating committee composed solely of independent directors; (iii) compensation of our or EchoStar's executive officers determined by a majority of the independent directors or a compensation committee composed solely of independent directors; (iv) a compensation committee charter which provides the compensation committee with the authority and funding to retain compensation consultants and other advisors; and/or (v) director nominees selected, or recommended for the EchoStar board's selection, either by a majority of the independent directors or a nominating committee composed solely of independent directors.

We have potential conflicts of interest with DISH Network due to EchoStar and DISH Network's common ownership.

Questions relating to conflicts of interest may arise between DISH Network and us in a number of areas relating to our past and ongoing relationships. Areas in which conflicts of interest between DISH Network and us could arise include, but are not limited to, the following:

- ***Cross directorships and stock ownership***. Charles W. Ergen serves as the Chairman of our, EchoStar's and DISH's boards of directors, is employed by both EchoStar and DISH and has fiduciary duties to EchoStar's and DISH's shareholders.Mr. Ergen may have actual or apparent conflicts of interest with respect to matters involving or affecting each company. For example, there is potential for a conflict of interest when we or DISH Network look at acquisitions and other corporate opportunities that may be suitable for both companies. In addition, our Chairman and certain other EchoStar directors and certain of our officers own DISH stock and options to purchase DISH stock, certain of which they acquired or were granted prior to our spin-off from DISH in 2008 (the "Spin-off"). These ownership interests could create actual, apparent or potential conflicts of interest when these individuals are faced with decisions that could have different implications for our company and DISH Network.
- ***Intercompany agreements with DISH Network***. We and EchoStar and its other subsidiaries have entered into various agreements with DISH Network. Pursuant to certain agreements, we and EchoStar and its other subsidiaries obtain certain products, services and rights from DISH Network; DISH Network obtains certain

products, services and rights from us and EchoStar and its other subsidiaries; and we and EchoStar, its other subsidiaries and DISH Network, as applicable, indemnify each other against certain liabilities arising from our respective businesses. Generally, the amounts paid for products and services provided under the agreements are based on cost plus a fixed margin, which varies depending on the nature of the products and services provided. Certain other intercompany agreements cover matters such as tax sharing and our and EchoStar's responsibility for certain liabilities previously undertaken by DISH Network for certain of our and EchoStar's businesses. We and EchoStar and its other subsidiaries have also entered into certain commercial agreements with DISH Network. The terms of certain of these agreements were established while EchoStar was a wholly-owned subsidiary of DISH and were not the result of arm's length negotiations. The allocation of assets, liabilities, rights, indemnifications and other obligations between DISH Network, EchoStar and its other subsidiaries and/or us under certain agreements we and/or EchoStar and its other subsidiaries have entered into with DISH Network may not necessarily reflect what two unaffiliated parties might have agreed to. Had these agreements been negotiated with unaffiliated third parties, their terms may have been more or less favorable to us or EchoStar and its other subsidiaries. In addition, DISH Network or its affiliates will likely continue to enter into transactions, including joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, with EchoStar or its subsidiaries, us or other affiliates. Although the terms of any such transactions will be established based upon negotiations between us and DISH Network and, when appropriate, subject to approval by committees of our and EchoStar's non-interlocking directors or in certain instances non-interlocking management, there can be no assurance that the terms of any such transactions will be as favorable to EchoStar or its subsidiaries, us or our subsidiaries, or other affiliates as may otherwise be obtained in negotiations between unaffiliated third parties.

- ***Competition for business opportunities***. DISH Network may have interests in various companies that have subsidiaries or controlled affiliates that own or operate domestic or foreign services that may compete with services offered by our businesses. DISH Network also has a distribution agreement with ViaSat, a competitor of our Hughes segment, to sell services similar to those offered by our Hughes segment. We and EchoStar and its other subsidiaries may also compete with DISH Network when we participate in auctions for spectrum or orbital slots for our satellites or other business opportunities.

We may not be able to resolve any potential conflicts of interest with DISH Network and, even if we do so, the resolution may be less favorable to us than if we were dealing with an unaffiliated party.

We do not have any agreements not to compete with DISH Network. However, many of our potential customers who compete with DISH Network have historically perceived us as a competitor due to our affiliation with DISH Network. There can be no assurance that we will be successful in entering into any commercial relationships with potential customers who are competitors of DISH Network (particularly if we continue to be perceived as affiliated with DISH Network as a result of common ownership, certain shared management services and other arrangements with DISH Network).

It may be difficult for a third party to acquire us, even if doing so may be beneficial to EchoStar's shareholders, because of our and EchoStar's capital structure and certain provisions of the BSS Transaction.

Certain provisions of EchoStar and our respective articles of incorporation and bylaws, such as a provision that authorizes the issuance of "blank check" preferred stock, which could be issued by our or EchoStar's board of directors to increase the number of outstanding shares and thwart a takeover attempt and EchoStar's capital structure with multiple classes of common stock some of which entitle the holders to multiple votes per share, may discourage delay or prevent a change in control of our company that may be considered favorable. Both we and EchoStar also have a significant amount of authorized and unissued stock under our respective articles of incorporation that would allow our respective boards of directors to issue shares to persons friendly to current management, thereby protecting the continuity of management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us. In addition, Charles W. Ergen, our Chairman, has the power to elect all of EchoStar's directors and control shareholder decisions of EchoStar on matters on which all classes of EchoStar's common stock vote together, and as our parent, EchoStar in turn holds all of our issued and outstanding equity and has the power to elect all of our directors and control shareholder decision on all matters, all of which may make it impractical for any third party to obtain control of us.

Additionally, in order to preserve the intended tax treatment of the Distribution, EchoStar has agreed to comply with certain restrictions under current U.S. federal income tax laws for spin-offs, including, refraining from engaging in certain transactions that would result in a fifty percent or greater change by vote or by value in our and its stock ownership. This restriction could discourage third parties from seeking to acquire us.

We may face other risks described from time to time in periodic and current reports we file with the SEC.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our principal executive offices are located at 100 Inverness Terrace East, Englewood, Colorado 80112-5308 and our telephone number is (303) 706-4000. The following table sets forth certain information concerning our principal properties related to our Hughes segment ("Hughes") and EchoStar Satellite Services segment ("ESS") and to our other operations and administrative functions ("Corporate and Other") as of December 31, 2019. We operate various facilities in the United States and abroad. We believe that our facilities are well maintained and are sufficient to meet our current and projected needs.

Location	Segment(s)	Function
Owned:		
Englewood, Colorado	ESS/Corporate and Other	Corporate headquarters and engineering offices
Germantown, Maryland	Hughes	Hughes corporate headquarters, engineering offices, network operations and shared hubs
Griesheim, Germany	Hughes/Corporate and Other	Shared hub, operations, administrative offices and warehouse
Leased:		
Gilbert, Arizona	Hughes	Gateways
San Diego, California	Hughes	Engineering and sales offices
Englewood, Colorado	Hughes	Gateways and equipment
Gaithersburg, Maryland	Hughes	Manufacturing and testing facilities and logistics offices
Gaithersburg, Maryland	Hughes	Engineering and administrative offices
Southfield, Michigan	Hughes	Shared hub and regional network management center
Las Vegas, Nevada	Hughes	Shared hub, antennae yards, gateway, backup network operation and control center for Hughes corporate headquarters
Cheyenne, Wyoming	Hughes/ESS	Satellite access center, gateways and equipment
Barueri, Brazil	Hughes/Corporate and Other	Shared hub, warehouse, operations center and spacecraft operations center
Sao Paulo, Brazil	Hughes	Hughes Brazil corporate headquarters, sales offices and warehouse
Bangalore, India	Hughes	Engineering office and office space
Gurgaon, India	Hughes	Administrative offices, shared hub, operations, warehouse, and development center
New Delhi, India	Hughes	Hughes India corporate headquarters
Milton Keynes, United Kingdom	Hughes	Hughes Europe corporate headquarters and operations

ITEM 3. LEGAL PROCEEDINGS

For a discussion of legal proceedings, see Note 17 in our Accompanying Consolidated Financial Statements.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information. As of February 10, 2020, all of our 1,078 issued and outstanding shares of common stock were held by EchoStar. There is currently no established trading market for our common stock. Our Articles of Incorporation authorize the issuance of 1,000,000 shares of preferred stock and as of February 10, 2020, no shares of our preferred stock were issued and outstanding.

Dividends. We have not paid any cash dividends on our common stock in the past two years. Payment of any future dividends will depend upon our earnings, capital requirements, contractual restrictions and other factors the board of directors considers appropriate. We currently intend to retain our earnings, if any, to support operations, future growth and expansion. Our ability to declare dividends is affected by the covenants in our indentures.

ITEM 7. MANAGEMENT'S NARRATIVE ANALYSIS OF RESULTS OF OPERATIONS

The following management's narrative analysis of results of operations should be read in conjunction with our Accompanying Consolidated Financial Statements and notes thereto. This management's narrative analysis is intended to help provide an understanding of our financial condition, changes in our financial condition and our results of operations. Many of the statements in this management's narrative analysis are forward-looking statements that involve assumptions and are subject to risks and uncertainties that are often difficult to predict and beyond our control. Actual results could differ materially from those expressed or implied by such forward-looking statements. See Disclosure Regarding Forward-Looking Statements in this Form 10-K for further discussion. For a discussion of additional risks, uncertainties and other factors that could impact our results of operations or financial condition, see Item 1A. Risk Factors of this Form 10-K. Further, such forward-looking statements speak only as of the date of this Form 10-K and we undertake no obligation to update them.

EXECUTIVE SUMMARY

We are a holding company and a subsidiary of EchoStar. We were formed as a Colorado corporation in March 2011. We are a global provider of broadband satellite technologies, broadband internet services for consumer customers, which include home and small to medium-sized businesses, and satellite services. We also deliver innovative network technologies, managed services and communications solutions for enterprise customers, which include aeronautical and government enterprises.

In May 2019, EchoStar and BSS Corp. entered into the Master Transaction Agreement with DISH and Merger Sub with respect to the BSS Transaction. Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) we and EchoStar and its other subsidiaries transferred the BSS Business to BSS Corp.; (ii) EchoStar completed the Distribution; and (iii) immediately after the Distribution, (1) BSS Corp. became a wholly-owned subsidiary of DISH such that DISH owns and operates the BSS Business and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Common Stock.

In connection with the BSS Transaction, EchoStar and DISH Network have agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively. Additionally, EchoStar and DISH and certain of our, EchoStar's and DISH's subsidiaries, as applicable, have (i) entered into certain customary agreements covering, among other things, matters relating to taxes, employees, intellectual property and the provision of transitional services; (ii) terminated certain previously existing agreements; and (iii) amended certain existing agreements and entered into certain new agreements pursuant to which we, EchoStar and certain of our and its other subsidiaries, on the one hand, and DISH Network, on the other hand, will obtain and provide certain products, services and rights from and to each other.

The BSS Transaction was structured in a manner intended to be tax-free to EchoStar and its stockholders for U.S. federal income tax purposes and was accounted for as a spin-off to EchoStar's stockholders as we and EchoStar did not receive any consideration. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. As a result of the BSS Transaction, the financial results of the BSS Business, except for certain real estate that transferred in the transaction, are presented as discontinued operations and, as such, excluded from continuing operations and segment results for all periods presented in our

Accompanying Consolidated Financial Statements. See Note 5 in our Accompanying Consolidated Financial Statements for further discussion of our discontinued operations.

During 2017, EchoStar and certain of its and our subsidiaries entered into a share exchange agreement with DISH and certain of its subsidiaries. EchoStar and certain of its and our subsidiaries received all the shares of the Tracking Stock in exchange for 100% of the equity interests of certain EchoStar subsidiaries that held substantially all of EchoStar’s former EchoStar Technologies businesses and certain other assets. Following the consummation of the Share Exchange, EchoStar no longer operates its former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated.

We currently operate in two business segments: Hughes and ESS. These segments are consistent with the way we make decisions regarding the allocation of resources, as well as how operating results are reviewed by our chief operating decision maker, who is the Company’s Chief Executive Officer.

Our operations also include various corporate departments (primarily Executive, Treasury, Strategic Development, Human Resources, IT, Finance, Accounting, Real Estate and Legal) and other activities that have not been assigned to our operating segments such as costs incurred in certain satellite development programs and other business development activities, and gains or losses from certain of our investments. These activities, costs and income, as well as eliminations of intersegment transactions, are accounted for in *Corporate and Other* in our segment reporting.

Highlights from our financial results are as follows:

Consolidated Results of Operations for the Year Ended December 31, 2019

- Revenue of $1.9 billion
- Operating income of $151.0 million
- Net loss from continuing operations of $40.9 million
- Net loss attributable to HSS of $29.5 million
- Earnings before interest, taxes, depreciation and amortization (“EBITDA”) of $604.8 million (see reconciliation of this non-GAAP measure in Results of Operations)

Consolidated Financial Condition as of December 31, 2019

- Total assets of $5.6 billion
- Total liabilities of $3.4 billion
- Total shareholders’ equity of $2.1 billion
- Cash, cash equivalents and current marketable investment securities of $1.8 billion

Hughes Segment

Our Hughes segment is a global provider of broadband satellite technologies and broadband internet services to consumer customers and broadband network technologies, managed services, equipment, hardware, satellite services and communications solutions to consumer and enterprise customers. The Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems. In addition, our Hughes segment designs, develops, constructs and provides telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers.

We incorporate advances in technology to reduce costs and to increase the functionality and reliability of our products and services. Through advanced and proprietary methodologies, technologies, software and techniques, we continue to improve the efficiency of our networks. We invest in technologies to enhance our system and network management capabilities, specifically our managed services for enterprises. We also continue to invest in next generation technologies that can be applied to our future products and services.

We continue to focus our efforts on growing our consumer revenue by maximizing utilization of our existing satellites while planning for new satellites to be launched or acquired. Our consumer revenue growth depends on our success in adding new and retaining existing subscribers in our domestic and international markets across wholesale and retail channels. The growth of our enterprise businesses relies heavily on global economic conditions and the competitive landscape for pricing relative to competitors and alternative technologies. Service costs related to ongoing support for our direct and indirect customers and partners are typically impacted most significantly by our growth.

Our Hughes segment currently uses capacity from three of our satellites (the SPACEWAY 3 satellite, the EchoStar XVII satellite and the EchoStar XIX satellite), our Al Yah 3 Brazilian payload and additional satellite capacity acquired from third-party providers to provide services to our customers. Growth of our consumer subscriber base continues to be constrained in areas where we are nearing or have reached maximum capacity. While these constraints are expected to be resolved when we launch new satellites, we continue to focus on revenue growth in all areas and consumer subscriber growth in the areas where we have available capacity.

In May 2019, we entered into an agreement with Al Yah Satellite Communications Company PrJSC ("Yahsat") pursuant to which, in November 2019, Yahsat contributed its satellite communications services business in Brazil to us in exchange for a 20% ownership interest in our existing Brazilian subsidiary that conducts our satellite communications services business in Brazil. The combined business provides broadband internet services and enterprise solutions in Brazil using the Telesat T19V satellite, the Eutelsat 65W satellite and Yahsat's Al Yah 3 satellite. Under the terms of the agreement, Yahsat may also acquire, for further cash investments, additional minority ownership interests in the business in the future provided certain conditions are met.

In May 2019, we also entered into an agreement with Bharti Airtel Limited ("BAL") and its subsidiary, Bharti Airtel Services Limited (together with BAL, "Bharti"), pursuant to which Bharti will contribute its very small aperture terminal ("VSAT") telecommunications services and hardware business in India to our two existing Indian subsidiaries that conduct our VSAT services and hardware business. The combined entities will provide broadband satellite and hybrid solutions for enterprise networks. Upon consummation of the transaction, Bharti will have a 33% ownership interest in the combined business. The completion of the transaction is subject to customary regulatory approvals and closing conditions. No assurance can be given that the transaction will be consummated on the terms agreed to or at all.

In August 2018, we entered into an agreement with Yahsat to establish a new entity, Broadband Connectivity Solutions (Restricted) Limited (together with its subsidiaries, "BCS"), to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat's Al Yah 2 and Al Yah 3 Ka-band satellites. The transaction was consummated in December 2018 when we invested $100.0 million in cash in exchange for a 20% interest in BCS. Under the terms of the agreement, we may also acquire, for further cash investments, additional ownership interests in BCS in the future provided certain conditions are met. We supply network operations and management services and equipment to BCS.

In August 2017, a subsidiary of EchoStar entered into a contract for the design and construction of the EchoStar XXIV satellite, a new, next-generation, high throughput geostationary satellite, with a planned 2021 launch. The EchoStar XXIV satellite is primarily intended to provide additional capacity for our HughesNet satellite internet service ("HughesNet service") in North, Central and South America as well as enterprise broadband services. If the manufacture and/or delivery of the EchoStar XXIV satellite is not met or is delayed, such failure could have a material adverse impact on our business operations, future revenues, financial position and prospects and our planned expansion of satellite broadband services throughout North, South and Central America. Capital expenditures associated with the construction and launch of the EchoStar XXIV satellite are included in EchoStar's Corporate and Other in its segment reporting.

In March 2017, we and DISH Network entered into a master service agreement (the "Hughes Broadband MSA"). Pursuant to the Hughes Broadband MSA, DISH Network, among other things, (i) has the right, but not the obligation, to market, promote and solicit orders and upgrades for our HughesNet service and related equipment and other telecommunication services; and (ii) installs HughesNet service equipment with respect to activations generated by DISH Network. As a result of the Hughes Broadband MSA, we have not earned, and do not expect to earn in the future, significant equipment revenue from our distribution agreement with DISH Network. We expect churn in the existing wholesale subscribers to continue to reduce *Services and other revenue* in the future.

We continue our efforts to expand our consumer satellite services business outside of the U.S. We have been delivering high-speed consumer satellite broadband services in Brazil since July 2016 and are also providing satellite broadband internet service in several other Central and South American countries. Additionally, in September 2015, we entered into 15-year agreements with affiliates of Telesat Canada for Ka-band capacity on the Telesat T19V satellite located at the 63 degree west longitude orbital location, which was launched in July 2018. Telesat T19V was placed in service during the fourth quarter of 2018 and augmented the capacity being provided by the EUTELSAT 65 West A satellite and the EchoStar XIX satellite in Central and South America.

Our broadband subscribers include customers that subscribe to our HughesNet services in North, Central and South America through retail, wholesale and small/medium enterprise service channels. Our approximate subscriber numbers as of December 31, 2019, 2018 and 2017 are as follows:

	As of December 31,		
	2019	2018	2017
Broadband subscribers	1,477,000	1,361,000	1,208,000

As of December 31, 2019, approximately 237,000 of our subscribers were in South and Central America. During the fourth quarter of 2019, we acquired approximately 20,000 new subscribers in connection with the consummation of our joint venture with Yahsat in Brazil (the “Acquired Subscribers”).

The approximate subscriber net additions for each quarter in 2019 are as follows:

	For the Three Months Ended			
	December 31	September 30	June 30	March 31
Net additions, excluding Acquired Subscribers	20,000	22,000	26,000	28,000

During the fourth quarter of 2019, excluding the Acquired Subscribers:

- our gross subscriber additions were generally flat compared to the third quarter of 2019; and
- our net subscriber additions decreased by approximately 2,000 compared to the third quarter of 2019, reflecting increased churn in the fourth quarter compared to the third quarter.

As of December 31, 2019 and 2018, our Hughes segment had $1.4 billion of contracted revenue backlog. We define Hughes contracted revenue backlog as our expected future revenue, including lease revenue, under customer contracts that are non-cancelable, excluding agreements with customers in our consumer market. Of the total Hughes contracted revenue backlog as of December 31, 2019, we expect to recognize $455.6 million of revenue in 2020.

ESS Segment

Our ESS segment provides satellite services on a full-time and/or occasional-use basis to U.S. government service providers, internet service providers, broadcast news organizations, content providers and private enterprise customers. We operate our ESS business using primarily the EchoStar IX satellite and the EchoStar 105/SES-11 satellite and related infrastructure. Revenue in our ESS segment depends largely on our ability to continuously make use of our available satellite capacity with existing customers and our ability to enter into commercial relationships with new customers. Our ESS segment, like others in the fixed satellite services industry, has encountered, and may continue to encounter, negative pressure on transponder rates and demand.

As of December 31, 2019 and 2018, our ESS segment had contracted revenue backlog of $11.4 million and $5.8 million respectively. We define contracted revenue backlog for our ESS segment as contracted future satellite lease revenue. Of the total ESS contracted revenue backlog as of December 31, 2019, we expect to recognize $7.2 million of revenue in 2020.

Other Business Opportunities

Our industry continues to evolve with the increasing worldwide demand for broadband internet access for information, entertainment and commerce. In addition to fiber and wireless systems, other technologies such as geostationary high throughput satellites, LEO networks, MEO systems, balloons and High Altitude Platform Systems are expected to play significant roles in enabling global broadband access, networks and services. We intend to use our expertise, technologies, capital, investments, global presence, relationships and other capabilities to continue to provide broadband internet systems, equipment, networks and services for information, the internet-of-things, entertainment and commerce in North America and internationally for consumer and enterprise customers. We are closely tracking the developments in next-generation satellite businesses, and we are seeking to utilize our services, technologies, licenses and expertise to find new commercial opportunities for our business.

We intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow us to increase our existing market share, increase our satellite capacity, expand into new markets and new customers, broaden our portfolio of services, products and intellectual property, make our business more valuable, align us for future growth and expansion, maximize the return on our investments and strengthen our business and relationships with our customers. We may allocate or dispose of significant resources for long-term value that may not have a short or medium-term or any positive impact on our revenue, results of operations, or cash flow.

Cybersecurity

As a global provider of satellite technologies and services, internet services and communications equipment and networks, we may be prone to more targeted and persistent levels of cyber-attacks than other businesses. These risks may be more prevalent as we continue to expand and grow our business into other areas of the world outside of North America, some of which are still developing their cybersecurity infrastructure maturity. Detecting, deterring, preventing and mitigating incidents caused by hackers and other parties may result in significant costs to us and may expose our customers to financial or other harm that have the potential to significantly increase our liability.

We treat cybersecurity risk seriously and are focused on maintaining the security of our and our partners' systems, networks, technologies and data. We regularly review and revise our relevant policies and procedures, invest in and maintain internal resources, personnel and systems and review, modify and supplement our defenses through the use of various services, programs and outside vendors. EchoStar also maintains agreements with third party vendors and experts to assist in our remediation and mitigation efforts if we experience or identify a material incident or threat. In addition, senior management and the Audit Committee of EchoStar's Board of Directors are regularly briefed on cybersecurity matters.

We are not aware of any cyber-incidents with respect to our owned or leased satellites or other networks, equipment or systems that have had a material adverse effect on our business, costs, operations, prospects, results of operation or financial position during the year ended December 31, 2019. There can be no assurance, however, that any such incident can be detected or thwarted or will not have such a material adverse effect in the future.

RESULTS OF OPERATIONS

Year Ended December 31, 2019 Compared to the Year Ended December 31, 2018

The following table presents our consolidated results of operations for the year ended December 31, 2019 compared to the year ended December 31, 2018:

Statements of Operations Data [(1)]	For the years ended December 31, 2019	For the years ended December 31, 2018	Variance Amount	Variance %
Revenue:				
Services and other revenue	$ 1,623,458	$ 1,561,426	$ 62,032	4.0
Equipment revenue	266,703	205,410	61,293	29.8
Total revenue	1,890,161	1,766,836	123,325	7.0
Costs and expenses:				
Cost of sales - services and other	555,701	559,838	(4,137)	(0.7)
% of total services and other revenue	**34.2%**	**35.9%**		
Cost of sales - equipment	225,103	176,600	48,503	27.5
% of total equipment revenue	**84.4%**	**86.0%**		
Selling, general and administrative expenses	467,869	397,994	69,875	17.6
% of total revenue	**24.8%**	**22.5%**		
Research and development expenses	25,739	27,570	(1,831)	(6.6)
% of total revenue	**1.4%**	**1.6%**		
Depreciation and amortization	464,797	426,852	37,945	8.9
Total costs and expenses	1,739,209	1,588,854	150,355	9.5
Operating income (loss)	150,952	177,982	(27,030)	(15.2)
Other income (expense):				
Interest income	57,730	59,104	(1,374)	(2.3)
Interest expense, net of amounts capitalized	(272,218)	(231,169)	(41,049)	17.8
Gains (losses) on investments, net	(8,464)	187	(8,651)	*
Equity in earnings (losses) of unconsolidated affiliates, net	(3,333)	4,874	(8,207)	*
Foreign currency transaction gains (losses), net	(9,855)	(12,484)	2,629	(21.1)
Other, net	(633)	8,041	(8,674)	*
Total other income (expense), net	(236,773)	(171,447)	(65,326)	38.1
Income (loss) from continuing operations before income taxes	(85,821)	6,535	(92,356)	*
Income tax benefit (provision), net	(11,595)	(18,615)	7,020	(37.7)
Net income (loss) from continuing operations	(97,416)	(12,080)	(85,336)	*
Net income (loss) from discontinued operations	56,539	109,423	(52,884)	(48.3)
Net income (loss)	(40,877)	97,343	(138,220)	*
Less: Net income (loss) attributable to non-controlling interests	(11,335)	1,842	(13,177)	*
Net income (loss) attributable to HSS	$ (29,542)	$ 95,501	$ (125,043)	*
Other data:				
EBITDA [(2)]	$ 604,799	$ 603,610	$ 1,189	0.2
Subscribers, end of period	1,477,000	1,361,000	116,000	8.5

* Percentage is not meaningful
(1) An explanation of our key metrics is included in Explanation of Key Metrics and Other Items.
(2) A reconciliation of EBITDA to Net income (loss), the most directly comparable U.S. GAAP measure in our Accompanying Consolidated Financial Statements, is included in Results of Operations. For further information on our use of EBITDA, see Explanation of Key Metrics and Other Items.

The following discussion relates to our continuing operations for the years ended December 31, 2019 and 2018 unless otherwise stated.

Services and other revenue. Services and other revenue totaled $1.6 billion for the year ended December 31, 2019, an increase of $62.0 million, or 4.0%, compared to 2018.

- Services and other revenue from our Hughes segment for the year ended December 31, 2019 increased by $74.9 million, or 5.0%, to $1.6 billion compared to 2018. The increase was primarily attributable to increases in sales of broadband services to our consumer customers of $102.0 million, primarily offset by a decrease in sales of services to our enterprise customers of $30.7 million.

- Services and other revenue from our ESS segment for the year ended December 31, 2019 decreased by $11.0 million, or 40.3%, to $16.3 million compared to 2018. The decrease was due to a decrease of $9.2 million in transponder services provided to third parties and a decrease of $1.6 million in satellite capacity leased to DISH Network on the EchoStar IX satellite.

Equipment revenue. Equipment revenue totaled $266.7 million for the year ended December 31, 2019, an increase of $61.3 million, or 29.8%, compared to 2018. The increase was primarily attributable to our Hughes segment due to increases in hardware sales of $45.9 million to our enterprise customers and $15.5 million to our mobile satellite systems customers.

Cost of sales — services and other. Cost of sales — services and other totaled $555.7 million for the year ended December 31, 2019, a decrease of $4.1 million, or 0.7%, compared to 2018. The decrease was primarily attributable to our Hughes segment due to lower costs of services provided to our enterprise customers, partially offset by an increase in costs of services to our consumer customers.

Cost of sales — equipment. Cost of sales — equipment totaled $225.1 million for the year ended December 31, 2019, an increase of $48.5 million, or 27.5%, compared to 2018. The increase was primarily attributable to our Hughes segment due to an increase in hardware sales to our enterprise customers and our mobile satellite systems customers.

Selling, general and administrative expenses. Selling, general and administrative expenses totaled $467.9 million for the year ended December 31, 2019, an increase of $69.9 million, or 17.6%, compared to 2018. The increase was primarily attributable to increases in (i) expense of $32.5 million related to certain legal proceedings, (ii) marketing and promotional expenses of $22.5 million from our Hughes segment mainly associated with our consumer business, (iii) bad debt expense of $5.0 million and (iv) other general and administrative expenses of $9.9 million.

Depreciation and amortization. Depreciation and amortization expenses totaled $464.8 million for the year ended December 31, 2019, an increase of $37.9 million, or 8.9%, compared to 2018. The increase was due to our Hughes segment and due to increases in depreciation expense of (i) $20.2 million relating to our customer premises equipment, (ii) $10.4 million relating to machinery and equipment, (iii) $4.8 million relating the Telesat T19V satellite that was placed into service in the fourth quarter of 2018, (iv) $3.1 million relating to the decrease in depreciable life of the SPACEWAY 3 satellite and (v) $2.0 million relating to the depreciation of the assets acquired from Yahsat in Brazil.

Interest expense, net of amounts capitalized. Interest expense, net of amounts capitalized totaled $272.2 million for the year ended December 31, 2019, an increase of $41.0 million, or 17.8%, compared to 2018. The increase was primarily due to an increase of $76.3 million in interest expense associated with certain legal proceedings and a net decrease of $5.1 million in capitalized interest relating to the Telesat T19V satellite that was placed into service in the fourth quarter of 2018. The increase was partially offset by a decrease of $39.1 million in interest expense and the amortization of deferred financing cost as a result of the repurchase and maturity of our 6 1/2% Senior Secured Notes due 2019.

Gains (losses) on investments, net. Gains (losses) on investments, net totaled $8.5 million in losses for the year ended December 31, 2019 compared to $0.2 million in gains in 2018. The change was due to losses on a certain investment in 2019.

Equity in earnings (losses) of unconsolidated affiliates, net. Equity in earnings (losses) of unconsolidated affiliates, net totaled $3.3 million in loss for the year ended December 31, 2019, compared to $4.9 million in earnings for the year ended December 31, 2018, a decrease of $8.2 million, compared to 2018, which was related to an increase in loss from our equity method investments. Additionally, in the fourth quarter of 2019, we changed our accounting policy to record our share of net earnings or losses of investees on a three-month lag.

Foreign currency transaction gains (losses), net. Foreign currency transaction gains (losses), net totaled $9.9 million in losses for the year ended December 31, 2019, a decrease in losses of $2.6 million, or 21.1%, compared to 2018. The decrease in losses was due to the net strengthening of the U.S. dollar against certain foreign currencies in 2019 compared to 2018.

Other, net. Other, net totaled $0.6 million in loss for the year ended December 31, 2019 compared to $8.0 million in income for the year ended December 31, 2018. The decrease in income was due to a net gain of $9.6 million due to the one-time settlement of certain amounts due to and from a third party vendor in 2018.

Income tax benefit (provision), net. Income tax benefit (provision), net was $11.6 million in provision for the year ended December 31, 2019, an increase of $7.0 million or 37.7%, compared to 2018. Our effective income tax rate was (13.5)% for the year ended December 31, 2019, compared to 284.7% for the same period in 2018. The variations in our effective tax rate from the U.S. federal statutory rate for the year ended December 31, 2019 were primarily due to the change in net unrealized losses that are capital in nature, various permanent tax differences, the impact of state and local taxes, and increase in our valuation allowance associated with certain foreign losses. For the year ended December 31, 2018, the variations in our effective tax rate from the U.S. federal statutory rate were primarily due to various permanent tax differences, the impact of state and local taxes, increase in our valuation allowance associated with certain foreign losses, and the change in our valuation allowance associated with net unrealized losses that are capital in nature.

Net income (loss) attributable to HSS. Net income (loss) attributable to HSS was a net loss of $29.5 million for the year ended December 31, 2019, compared to net income of $95.5 million for the year ended December 31, 2018, a decrease of $125.0 million, compared to 2018, as set forth in the following table:

		Amounts
Net income (loss) attributable to HSS for the year ended December 31, 2018	$	95,501
Decrease (increase) in net income attributable to non-controlling interests		13,177
Decrease (increase) in income tax provision, net		7,020
Decrease (increase) in foreign currency transaction losses, net		2,629
Increase (decrease) in interest income		(1,374)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net		(8,207)
Increase (decrease) in gains on investments, net		(8,651)
Increase (decrease) in other, net		(8,674)
Increase (decrease) in operating income, including depreciation and amortization		(27,030)
Decrease (increase) in interest expense, net of amounts capitalized		(41,049)
Increase (decrease) in net income from discontinued operations		(52,884)
Net income (loss) attributable to HSS for the year ended December 31, 2019	$	(29,542)

EBITDA. EBITDA is a non-GAAP financial measure and is described under Explanation of Key Metrics and Other Items below. The following table reconciles EBITDA to Net income (loss), the most directly comparable U.S. GAAP measure in our Accompanying Consolidated Financial Statements:

	For the years ended December 31,		Variance	
	2019	**2018**	**Amount**	**%**
Net income (loss)	$ (40,877)	$ 97,343	$ (138,220)	*
Interest income	(57,730)	(59,104)	1,374	(2.3)
Interest expense, net of amounts capitalized	272,218	231,169	41,049	17.8
Income tax provision (benefit), net	11,595	18,615	(7,020)	(37.7)
Depreciation and amortization	464,797	426,852	37,945	8.9
Net (income) loss from discontinued operations	(56,539)	(109,423)	52,884	(48.3)
Net (income) loss attributable to non-controlling interests	11,335	(1,842)	13,177	*
EBITDA	$ 604,799	$ 603,610	$ 1,189	0.2

EBITDA was $604.8 million for the year ended December 31, 2019, an increase of $1.2 million, or 0.2%, compared to 2018, as set forth in the following table:

	Amounts
EBITDA for the year ended December 31, 2018	$ 603,610
Increase (decrease) in depreciation and amortization	37,945
Decrease (increase) in net income attributable to non-controlling interests	13,177
Decrease (increase) in foreign currency transaction losses, net	2,629
Increase (decrease) in equity in earnings of unconsolidated affiliates, net	(8,207)
Increase (decrease) in gains on investments, net	(8,651)
Increase (decrease) in other, net	(8,674)
Increase (decrease) in operating income, including depreciation and amortization	(27,030)
EBITDA for the year ended December 31, 2019	$ 604,799

Segment Operating Results and Capital Expenditures

The following tables present our operating results, capital expenditures and EBITDA by segment for the year ended December 31, 2019 compared to the year ended December 31, 2018. Capital expenditures are net of refunds and other receipts related to property and equipment.

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
Total revenue	$ 1,852,742	$ 16,257	$ 21,162	$ 1,890,161
Capital expenditures	308,781	—	—	308,781
EBITDA	625,660	6,994	(27,855)	604,799
For the year ended December 31, 2018				
Total revenue	$ 1,716,528	$ 27,231	$ 23,077	$ 1,766,836
Capital expenditures	390,108	(76,757)	15	313,366
EBITDA	601,319	17,764	(15,473)	603,610

Hughes Segment

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Total revenue	$ 1,852,742	$ 1,716,528	$ 136,214	7.9
Capital expenditures	308,781	390,108	(81,327)	(20.8)
EBITDA	625,660	601,319	24,341	4.0

Total revenue was $1.9 billion for the year ended December 31, 2019, an increase of $136.2 million, or 7.9%, compared to 2018. The increase was primarily due to an increase of $102.0 million in sales of broadband services to our consumer customers and net increases in hardware sales of $45.9 million to our enterprise customers and $15.5 million to our mobile satellite systems customers. The increase was partially offset by a decrease of $30.7 million in sales of services to our enterprise customers.

Capital expenditures were $308.8 million for the year ended December 31, 2019, a decrease of $81.3 million, or 20.8%, compared to 2018, primarily due to net decreases in capital expenditures associated with the construction and infrastructure of our satellites and in our consumer and enterprise businesses.

EBITDA was $625.7 million for the year ended December 31, 2019, an increase of $24.3 million, or 4.0%, compared to 2018, as set forth in the following table:

	Amounts
EBITDA for the year ended December 31, 2018	$ 601,319
Increase (decrease) in depreciation and amortization	40,050
Decrease (increase) in net income attributable to non-controlling interests	13,177
Decrease (increase) in foreign currency transaction losses, net	2,613
Increase (decrease) in other, net	(197)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net	(5,477)
Increase (decrease) in gains on investments, net	(8,890)
Increase (decrease) in operating income, including depreciation and amortization	(16,935)
EBITDA for the year ended December 31, 2019	$ 625,660

ESS Segment

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Total revenue	$ 16,257	$ 27,231	$ (10,974)	(40.3)
Capital expenditures	—	(76,757)	76,757	(100.0)
EBITDA	6,994	17,764	(10,770)	(60.6)

Total revenue was $16.3 million for the year ended December 31, 2019, a decrease of $11.0 million, or 40.3%, compared to 2018. The decrease was attributable to a net decrease of $9.2 million in transponder services provided to third parties and a decrease of $1.6 million in satellite capacity leased to DISH Network on the EchoStar IX satellite.

There were no capital expenditures for the year ended December 31, 2019, as there were no new satellites under construction in our ESS segment during the year. The negative capital expenditure in 2018 for $76.8 million is primarily driven by a reimbursement of $77.5 million related to the EchoStar 105/SES-11 satellite received in the first quarter of 2018.

EBITDA was $7.0 million for the year ended December 31, 2019, a decrease of $10.8 million, or 60.6%, compared to 2018, primarily due to the decrease in overall ESS revenue.

Corporate and Other

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Total revenue	$ 21,162	$ 23,077	$ (1,915)	(8.3)
Capital expenditures	—	15	(15)	(100.0)
EBITDA	(27,855)	(15,473)	(12,382)	80.0

EBITDA was a loss of $27.9 million for the year ended December 31, 2019, an increase in loss of $12.4 million, or 80.0% compared to 2018, as set forth in the following table:

		Amounts
EBITDA for the year ended December 31, 2018	$	(15,473)
Increase (decrease) in operating income, including depreciation and amortization		912
Increase (decrease) in gains on investments, net		239
Decrease (increase) in foreign currency transaction losses, net		16
Increase (decrease) in depreciation and amortization		(2,340)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net		(2,730)
Increase (decrease) in other, net		(8,480)
EBITDA for the year ended December 31, 2019	$	(27,856)

EXPLANATION OF KEY METRICS AND OTHER ITEMS

Services and other revenue. Services and other revenue primarily includes the sales of consumer and enterprise broadband services, maintenance and other contracted services, revenue associated with satellite and transponder leases and services, satellite uplinking/downlinking, subscriber wholesale service fees for the HughesNet service professional services and facilities rental revenue.

Equipment revenue. Equipment revenue primarily includes broadband equipment and networks sold to customers in our consumer and enterprise markets.

Cost of sales - services and other. Cost of sales - services and other primarily includes the cost of broadband services provided to our consumer and enterprise customers, maintenance and other contracted services, costs associated with satellite and transponder leases and services, professional services and facilities rental.

Cost of sales - equipment. Cost of sales - equipment consists primarily of the cost of broadband equipment and networks sold to customers in our consumer and enterprise markets. It also includes certain other costs associated with the deployment of equipment to our customers.

Selling, general and administrative expenses. Selling, general and administrative expenses primarily includes selling and marketing costs and employee-related costs associated with administrative services (e.g., information systems, human resources and other services), including stock-based compensation expense. It also includes professional fees (e.g. legal, information systems and accounting services) and other expenses associated with facilities and administrative services.

Research and development expenses. Research and development expenses primarily includes costs associated with the design and development of products to support future growth and provide new technology and innovation to our customers.

Impairment of long-lived assets. Impairment of long-lived assets includes our impairment losses related to our property and equipment, goodwill, regulatory authorizations and other intangible assets.

Interest income. Interest income primarily includes interest earned on our cash, cash equivalents and marketable investment securities, and other investments including premium amortization and discount accretion on debt securities.

Interest expense, net of amounts capitalized. Interest expense, net of amounts capitalized primarily includes interest expense associated with our debt and finance lease obligations (net of capitalized interest), amortization of debt issuance costs and interest expense related to certain legal proceedings.

Gains (losses) on investments, net. Gains (losses) on investments, net primarily includes changes in fair value of our marketable equity securities and other investments for which we have elected the fair value option. It may also include realized gains and losses on the sale or exchange of our available-for-sale debt securities, other-than-temporary impairment losses on our available-for-sale securities, realized gains and losses on the sale or exchange of equity securities and debt securities without readily determinable fair value and adjustments to the carrying amount of investments in unconsolidated affiliates and marketable equity securities resulting from impairments and observable price changes.

Equity in earnings (losses) of unconsolidated affiliates, net. Equity in earnings (losses) of unconsolidated affiliates, net includes earnings or losses from our investments accounted for using the equity method.

Foreign currency transaction gains (losses), net. Foreign currency transaction gains (losses), net include gains and losses resulting from the re-measurement of transactions denominated in foreign currencies.

Other, net. Other, net primarily includes dividends received from our marketable investment securities and other non-operating income and expense items that are not appropriately classified elsewhere in the Consolidated Statements of Operations in our Accompanying Consolidated Financial Statements.

Net income (loss) from discontinued operations. Net income (loss) from discontinued operations includes the financial results of the BSS Business transferred in the BSS Transaction, except for certain real estate that transferred in the transaction.

Earnings before interest, taxes, depreciation and amortization ("EBITDA"). EBITDA is defined as Net income (loss) excluding Interest income and expense, net, Income tax benefit (provision), net, Depreciation and amortization, Net income (loss) from discontinued operations and Net income (loss) attributable to non-controlling interests. EBITDA is not a measure determined in accordance with U.S. GAAP. This non-GAAP measure is reconciled to Net income (loss) in our discussion of Results of Operations above. EBITDA should not be considered in isolation or as a substitute for operating income, net income or any other measure determined in accordance with U.S. GAAP. EBITDA is used by our management as a measure of operating efficiency and overall financial performance for benchmarking against our peers and competitors. Management believes EBITDA provides meaningful supplemental information regarding the underlying operating performance of our business and is appropriate to enhance an overall understanding of our financial performance. Management also believes that EBITDA is useful to investors because it is frequently used by securities analysts, investors and other interested parties to evaluate the performance of companies in our industry.

Subscribers. Subscribers include customers that subscribe to our HughesNet service, through retail, wholesale and small/medium enterprise service channels.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risks Associated with Financial Instruments and Foreign Currency

Our investments and debt are exposed to market risks, discussed below.

Cash, Cash Equivalents and Current Marketable Investment Securities

As of December 31, 2019, our cash, cash equivalents and current marketable investment securities had a fair value of $1.8 billion. Of this amount, a total of $1.8 billion was invested in: (a) cash; (b) commercial paper and corporate notes with an overall average maturity of less than one year and rated in one of the four highest rating categories by at least two nationally recognized statistical rating organizations; (c) debt instruments of the United States ("U.S.") government and its agencies; and/or (d) instruments with similar risk, duration and credit quality characteristics to the commercial paper and corporate obligations described above. The primary purpose of these investing activities has been to preserve principal until the cash is required to, among other things, fund operations, make strategic investments and expand the business. Consequently, the size of this portfolio fluctuates significantly as cash is received and used in our business. The value of this portfolio may be negatively impacted by credit losses; however, this risk is mitigated through diversification that limits our exposure to any one issuer.

Interest Rate Risk

A change in interest rates would not affect the fair value of our cash, or materially affect the fair value of our cash equivalents due to their maturities of less than 90 days. A change in interest rates would affect the fair value of our current marketable debt securities portfolio; however, we normally hold these investments to maturity. Based on our cash, cash equivalents and current marketable debt securities investment portfolio of $1.8 billion as of December 31, 2019, a hypothetical 10% change in average interest rates during 2019 would not have had a material impact on the fair value of our cash, cash equivalents and debt securities portfolio due to the limited duration of our investments.

Our cash, cash equivalents and current marketable debt securities had an average annual rate of return for the year ended December 31, 2019 of 2.67%. A change in interest rates would affect our future annual interest income from this portfolio, since funds would be re-invested at different rates as the instruments mature. A hypothetical 10% decrease in average interest rates during 2019 would have resulted in a decrease of $5.5 million in annual interest income.

Other Investments

As of December 31, 2019, we had $7.4 million of other equity investments and other debt investments of privately held companies that we hold for strategic business purposes. The fair value of these investments is not readily determinable. We periodically review these investments and may adjust the carrying amount to their estimated fair value when there are indications of impairment, observable prices changes for the investments or observable transactions of the same investments. A hypothetical adverse change equal to 10% of the carrying amount of these equity instruments during 2019 would have resulted in a decrease of $0.7 million in the value of these investments.

Our ability to realize value from our strategic investments in companies that are privately held depends on the success of those companies' businesses and their ability to obtain sufficient capital to execute their business plans. Because private markets are not as liquid as public markets, there is also increased risk that we will not be able to sell these investments, or that when we sell them, we will not be able to recover our investment.

Foreign Currency Exchange Risk

We generally conduct our business in U.S. dollars. Our international business is conducted in a variety of foreign currencies with our largest exposures being to the Brazilian real, the Indian rupee, European euro and the British pound. This exposes us to fluctuations in foreign currency exchange rates. Transactions in foreign currencies are converted into U.S. dollars using exchange rates in effect on the dates of the transactions.

Our objective in managing our exposure to foreign currency changes is to reduce earnings and cash flow volatility associated with foreign currency exchange rate fluctuations, primarily resulting from loans to foreign subsidiaries in U.S. dollars. Accordingly, we may enter into foreign currency forward contracts, or take other measures, to mitigate risks associated with foreign currency denominated assets, liabilities, commitments and anticipated foreign currency transactions. As of December 31, 2019, we had foreign currency forward contracts with a notional value of $12.1 million in place to partially mitigate foreign currency exchange risk. The estimated fair values of the foreign currency contracts were not material as of December 31, 2019. The impact of a hypothetical 10% adverse change in exchange rates on the carrying amount of the net assets and liabilities of our foreign subsidiaries during 2019 would have been an estimated loss to the cumulative translation adjustment of $44.8 million as of December 31, 2019.

Derivative Financial Instruments

We generally do not use derivative financial instruments for speculative purposes and we generally do not apply hedge accounting treatment to our derivative financial instruments. We evaluate our derivative financial instruments from time to time but there can be no assurance that we will not enter into additional foreign currency forward contracts, or take other measures, in the future to mitigate our foreign currency exchange risk.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our Accompanying Consolidated Financial Statements are included in Item 15 of this Form 10-K.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this Form 10-K. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Form 10-K such that the information required to be disclosed in our Securities and Exchange Commission reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

In November 2019, we consummated our joint venture with Yahsat in Brazil. As a result of the transaction, we are reviewing the internal controls of the business we acquired from Yahsat in the transaction and we may make appropriate changes as deemed necessary.

Changes in Internal Control Over Financial Reporting

Except as noted above, there has been no change in our internal control over financial reporting (as defined in Rule 15d-15(f) under the Exchange Act) that occurred during the three months ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. We continue to review our internal control over financial reporting, and may from time to time make changes aimed at enhancing its effectiveness and to ensure that our systems evolve with our business.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our 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 generally accepted accounting principles in the United States.

Our internal control over financial reporting includes those policies and procedures that:

- (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets;
- (ii) provide reasonable assurance that our transactions are recorded as necessary to permit preparation of our financial statements in accordance with generally accepted accounting principles in the United States, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and
- (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on our 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 policies or procedures may deteriorate.

Our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2019. Management's assessment of our internal control over financial reporting did not include the internal controls of the business we acquired from Yahsat in Brazil in November 2019. The amount of total assets and revenue acquired that is included in our Accompanying

Consolidated Financial Statements as of and for the year ended December 31, 2019 was $108.6 million and $0.8 million, respectively.

ITEM 9B. OTHER INFORMATION

Financial Results

On February 20, 2020, EchoStar issued a press release (the “Press Release”) announcing its financial results for the quarter and year ended December 31, 2019 and a supplemental investor information presentation (the “Presentation”) providing unaudited pro forma financial information. A copy of the Press Release and Presentation are furnished herewith as Exhibit 99.1 and Exhibit 99.2, respectively. The foregoing information, including the exhibit related thereto, is furnished in response to Item 2.02 of Form 8-K and shall not be deemed “filed” for the purposes of Section 18 of the Exchange Act, or otherwise, and shall not be incorporated by reference into any registration statement or other document pursuant to the Securities Act of 1933, as amended, or into any filing or other document pursuant to the Exchange Act, except as otherwise expressly stated in any such filing.

PART III

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Appointment of Independent Registered Public Accounting Firm

Appointment of Independent Registered Public Accounting Firm for 2020. KPMG LLP served as our independent registered public accounting firm for the fiscal year ended December 31, 2019. EchoStar's board of directors, in its discretion, may direct the appointment of a different independent registered public accounting firm at any time during the year if it determines that such a change would be in our best interests.

Fees Paid to KPMG LLP

The following table presents fees for professional services rendered by KPMG LLP on behalf of the Company for the years ended December 31, 2019 and 2018:

	For the Years Ended December 31,	
	2019	2018
Audit fees (1)	$ 2,147,764	$ 1,828,355
Audit-related fees (2)	62,919	112,158
Total audit and audited related fees	2,210,683	1,940,513
Tax fees (3)	—	78,794
Total fees	$ 2,210,683	$ 2,019,307

(1) Consists of fees for the audit of our consolidated financial statements included in our Annual Report on Form 10-K, review of our unaudited financial statements included in our Quarterly Reports on Form 10-Q and fees in connection with statutory and other audits of our foreign subsidiaries.
(2) Consists of fees for assurance and other services that are provided in connection with the issuance of consents, comfort letters, certifications, compliance with XBRL tagging, and professional consultations with respect to accounting issues or matters that are non-recurring in nature.
(3) Consists of fees for tax consultation and tax compliance services.

Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm

EchoStar's Audit Committee is responsible for appointing, setting compensation, retaining, and overseeing the work of our independent registered public accounting firm. EchoStar's Audit Committee has established a process regarding pre-approval of all audit and permissible non-audit services provided by the independent registered public accounting firm.

Requests are submitted to EchoStar's Audit Committee in one of the following ways:

- Request for approval of services at a meeting of EchoStar's Audit Committee; or
- Request for approval of services by members of EchoStar's Audit Committee acting by written consent.

The request may be made with respect to either specific services or a type of service for predictable or recurring services. All of the fees paid by us to KPMG LLP for services for 2019 and 2018 were pre-approved by EchoStar's Audit Committee.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

(1) Consolidated Financial Statements

(2) Exhibits

Exhibit No.	Description
2.1*	Agreement and Plan of Merger between EchoStar Corporation, EchoStar Satellite Services L.L.C., Broadband Acquisition Corporation and Hughes Communications, Inc. dated as of February 13, 2011 (incorporated by reference to Exhibit 2.1 to Hughes Communications Inc.'s Current Report on Form 8-K, filed February 15, 2011, Commission File No. 1-33040).****
2.2*	Master Transaction Agreement by and among DISH Network Corporation, BSS Merger Sub Inc., EchoStar Corporation, and EchoStar BSS Corporation, dated as of May 19, 2019 (incorporated by reference to Exhibit 2.1 to Hughes Satellite Systems Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 333-179121)****
3.1(a)*	Articles of Incorporation of EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), dated as of March 16, 2011 (incorporated by reference to Exhibit 3.1(a) to the Company's Registration Statement on Form S-4, Registration No. 333-179121).
3.1(b)*	Articles of Amendment of EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), dated as of October 26, 2011 (incorporated by reference to Exhibit 3.1(b) to the Company's Registration Statement on Form S-4, Registration No. 333-179121).
3.1(c)*	Articles of Amendment of Hughes Satellite Systems Corporation, dated as of December 30, 2013 (incorporated by reference to Exhibit 3.1(c) to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the year ended December 31, 2013, filed February 21, 2014, Commission File No. 333-179121.
3.1(d)*	Articles of Amendment of Hughes Satellite Systems Corporation, dated as of January 21, 2014 (incorporated by reference to Exhibit 3.1(d) to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the year ended December 31, 2013, filed February 21, 2014, Commission File No. 333-179121).

Exhibit No.	Description
3.1(e)*	Articles of Amendment of Hughes Satellite Systems Corporation, dated as of February 28, 2014 (incorporated by reference to Exhibit 3.1(a) to Hughes Satellite Systems Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed May 9, 2014, Commission File No. 333-179121).
3.1(f)*	Articles of Amendment to Articles of Incorporation of Hughes Satellite Systems Corporation, dated as of March 1, 2017 (incorporated by reference to Exhibit 32 to EchoStar Corporation's Current Report on Form 8-K filed March 6, 2017, Commission File No. 001-33807).
3.2*	Bylaws of EH Holding Corporation (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-4, Registration No. 333-179121).
4.1*	Indenture relating to the EH Holding Corporation (currently known as Hughes Satellite Systems Corporation) 7 5/8% Senior Unsecured Notes due 2021, dated as of June 1, 2011, by and among EH Holding Corporation, the guarantors listed on the signature page thereto, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Current Report on Form 8-K, filed June 2, 2011, Commission File No. 001-33807).
4.2*	Supplemental Indenture relating to the 7 5/8% Senior Unsecured Notes due 2021 of EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), dated as of June 8, 2011, by and among EH Holding Corporation, the guarantors listed on the signature page thereto, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Current Report on Form 8-K, filed June 9, 2011, Commission File No. 001-33807).
4.3*	Registration Rights Agreement, dated as of June 1, 2011, among EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), the guarantors listed on the signature page thereto and Deutsche Bank Securities Inc. (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Current Report on Form 8-K, filed June 2, 2011, Commission File No. 001-33807).
4.4*	Security Agreement, dated as of June 8, 2011, among EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), the guarantors listed on the signature pages thereto, and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Current Report on Form 8-K, filed June 9, 2011, Commission File No. 001-33807).
4.5*	Second Supplemental Indenture relating to the 7 5/8% Senior Unsecured Notes due 2021 of Hughes Satellite Systems Corporation, dated as of March 28, 2014, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed May 9, 2014, Commission File No. 001-33807).
4.6*	Form of Note for 7 5/8% Senior Unsecured Notes due 2021 (included as part of Exhibit 4.2).
4.7*	Indenture, relating to the 5.250% Senior Secured Notes, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.8*	Indenture, relating to the 6.625% Senior Unsecured Notes, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).

Exhibit No.	Description
4.9*	Registration Rights Agreement, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto and Deutsche Bank Securities Inc. (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.10*	Additional Secured Party Joinder, dated as of July 27, 2016, among U.S. Bank National Association, as trustee and successor collateral agent, and Hughes Satellite Systems Corporation (incorporated by reference to Exhibit 4.4 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.11*	Form of 5.250% Senior Secured Note due 2026 (included as part of Exhibit 4.12).
4.12*	Form of 6.625% Senior Unsecured Note due 2026 (included as part of Exhibit 4.13).
4.13*	Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.19 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121).
4.14*	Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.20 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121).
4.15*	Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 7⅝% Senior Notes due 2021, dated March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.22 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121).
4.16*	Joinder Agreement, dated as of August 10, 2017, to the Security Agreement dated as of June 8, 2011, by and between HNS Americas, L.L.C., HNS Americas II, L.L.C. and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.23 to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 333-179121).
4.17*	Second Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.24 to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 333-179121).

Exhibit No.	Description
4.18*	Second Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.25 to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 333-179121).
4.19*	Fourth Supplemental Indenture relating to Hughes Satellite Systems Corporation's 7⅝% Senior Notes due 2021, dated August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.27 to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 333-179121).
4.20*	Joinder Agreement, dated as of June 12, 2019, to the Security Agreement dated as of June 8, 2011, by and between EchoStar BSS Corporation, EchoStar FSS L.L.C. and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.1 to Hughes Satellite System Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 333-179121).
4.21*	Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.2 to Hughes Satellite System Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 333-179121).
4.22*	Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to Hughes Satellite System Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 333-179121).
4.23*	Fifth Supplemental Indenture relating to Hughes Satellite Systems Corporation's 7⅝% Senior Notes due 2021, dated June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.4 to Hughes Satellite Systems Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 333-179121).
10.1*	Form of Tax Sharing Agreement between EchoStar Corporation and DISH Network Corporation (incorporated by reference to Exhibit 10.2 to Amendment No. 1 of EchoStar Corporation's Form 10, filed December 12, 2007, Commission File No. 001-33807).
10.2*	Amended and Restated EchoStar Corporation 2008 Stock Incentive Plan (the "2008 Stock Incentive Plan") (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed September 18, 2014, Commission File No. 001-33807).**
10.3*	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of Hughes Communications, Inc., filed June 22, 2006, (Commission File No. 000-51784)). **

Exhibit No.	Description
10.4*	Employment Agreement, dated as of April 23, 2005 by and between Hughes Network Systems, LLC and Pradman Kaul (incorporated by reference to Exhibit 10.3 to Hughes Communications, Inc.'s Registration Statement on Form S-1, filed December 5, 2005 (File No. 333-130136)).**
10.5*	Amendment to Employment Agreement, dated as of December 23, 2010 by and between Hughes Communications, Inc. and Pradman Kaul (incorporated by reference to Exhibit 10.29 to Hughes Communications, Inc.'s Annual Report on Form 10-K, filed March 7, 2011 (File No. 001-33040)).**
10.6*	Amendment to Employment Agreement, dated as of April 1, 2016, between Hughes Communications, Inc. and Pradman Kaul (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of EchoStar Corporation, filed April 6, 2016, Commission File No. 001-33807). **
10.7*	Form of Restricted Stock Unit Agreement for 2008 Stock Incentive Plan — Executive or Director (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015, filed November 6, 2015, Commission File No. 001-33807).**
10.8*	Form of Stock Option Agreement for 2008 Stock Incentive Plan (1999) (incorporated by reference to Exhibit 10.31 to Hughes Satellite System Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 333-179121). **
10.9*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Employee (2008) (incorporated by reference to Exhibit 10.32 to Hughes Satellite System Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 333-179121). **
10.10*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Executive (2008) (incorporated by reference to Exhibit 10.33 to Hughes Satellite System Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 333-179121). **
10.11*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Employee (2014) (incorporated by reference to Exhibit 10.34 to Hughes Satellite System Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 333-179121). **
10.12*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Executive (2014) (incorporated by reference to Exhibit 10.35 to Hughes Satellite System Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 333-179121). **
10.13*	Form of Restricted Stock Unit Agreement for 2008 Stock Incentive Plan — Executive or Director (2011) (incorporated by reference to Exhibit 10.36 to Hughes Satellite System Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 333-179121).**
10.14*	EchoStar Corporation Executive Officer Bonus Incentive Plan, dated as of May 4, 2016 (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Current Report on Form 8-K, filed May 5, 2016, Commission File No. 001-33807).**

Exhibit No.	Description
10.15*	EchoStar Corporation 2017 Stock Incentive Plan (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807).**
10.16*	Amended and Restated EchoStar Corporation 2017 Employee Stock Purchase Plan (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807).**
10.17*	EchoStar Non-Qualified Plan -- Executive Plan and Adoption Agreement, as amended (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.18*	Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Employee (2017) (incorporated by reference to Exhibit 10.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.19*	Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Executive (2017) (incorporated by reference to Exhibit 10.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807). **
10.20*	Form of Restricted Stock Unit Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Executive (2017) (incorporated by reference to Exhibit 10.5 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.21*	Letter Agreement between EchoStar Corporation and DISH Network Corporation, dated August 3, 2018, amending that certain Form of Tax Sharing Agreement between EchoStar Corporation and DISH Network (incorporated by reference to Exhibit 10.1 to Hughes Satellite System Corporation's Quarterly Report on Form 10-Q for the quarter ended September 2018, filed November 8, 2018, Commission File No. 333-179121).
10.22*	Amendment to EchoStar Non-Qualified Plan-Executive Plan and Adoption Agreement, dated November 1, 2018 (incorporated by reference to Exhibit 10.30 to Hughes Satellite Systems Corporation's Annual Report on Form 10-K for the Year ended December 31, 2018, filed February 21, 2019, Commission File No. 333-179121).**
10.23*	Amended and Restated EchoStar Corporation Executive Officer Bonus Incentive Plan, dated as of April 30, 2019 (incorporated by reference to Exhibit 10.1 to Hughes Satellite Systems Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 333-179121).**
31.1 (H)	Section 302 Certification of Chief Executive Officer.
31.2 (H)	Section 302 Certification of Chief Financial Officer.
32.1 (H)	Section 906 Certifications of Chief Executive Officer and Chief Financial Officer.
99.1 (I)	Press release dated February 20, 2020 issued by EchoStar Corporation regarding financial results for the quarter and full year ended December 31, 2019.

Exhibit No.	Description
99.2(I)	Presentation dated February 20, 2020 issued by EchoStar Corporation regarding unaudited pro forma financial information
101.INS	XBRL Instance Document. The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.
101.DEF	XBRL Taxonomy Extension Definition Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.

(H) Filed herewith.
(I) Furnished herewith
* Incorporated by reference.
** Constitutes a management contract or compensatory plan or arrangement.
*** Certain portions of the exhibit have been omitted in accordance with the Securities and Exchange Commission's rules and regulations regarding confidential treatment.
**** Schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. We agree to furnish supplementally to the Securities and Exchange Commission a copy of any omitted schedule or exhibit upon request, subject to our right to request confidential treatment of any requested schedule or exhibit.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

HUGHES SATELLITE SYSTEMS CORPORATION

By: /s/ *David J. Rayner*
David J. Rayner
Executive Vice President,
Chief Financial Officer,
Chief Operating Officer, and
Treasurer

Date: February 20, 2020

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ *Michael T. Dugan* Michael T. Dugan	Chief Executive Officer, President and Director *(Principal Executive Officer)*	February 20, 2020
/s/ *David J. Rayner* David J. Rayner	Executive Vice President, Chief Financial Officer, Chief Operating Officer and Treasurer *(Principal Financial and Accounting Officer)*	February 20, 2020
/s/ *Charles W. Ergen* Charles W. Ergen	Chairman	February 20, 2020
/s/ *Dean A. Manson* Dean A. Manson	Executive Vice President, General Counsel Secretary and Director	February 20, 2020

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Financial Statements:

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Hughes Satellite Systems Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Hughes Satellite Systems Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive income (loss), 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 financial statement schedule II listed in Item 15 (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.

Changes in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, in 2019, the Company has changed its method of accounting for leases due to the adoption of *Accounting Standards Update No. 2016-02, Leases* as of January 1, 2019*.* In 2018, the Company has changed its method of accounting for revenue recognition due to the adoption of *Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers* and changed its method of accounting for marketable investment securities and fair value measurements due to the adoption of *Accounting Standards Update No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities.*

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 Public Company Accounting Oversight Board (United States) (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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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.

/s/ KPMG LLP

We have served as the Company's auditor since 2011.

Denver, Colorado
February 20, 2020

HUGHES SATELLITE SYSTEMS CORPORATION
CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except per share amounts)

	As of December 31,	
	2019	**2018**
Assets		
Current assets:		
Cash and cash equivalents	$ 1,139,435	$ 847,823
Marketable investment securities	652,835	1,609,196
Trade accounts receivable and contract assets, net	196,520	201,096
Advances to affiliates	131,892	103,550
Other current assets	169,760	152,666
Current assets of discontinued operations	—	3,483
Total current assets	2,290,442	2,917,814
Non-current assets:		
Property and equipment, net	1,857,581	1,921,911
Operating lease right-of-use assets	113,399	—
Goodwill	506,953	504,173
Regulatory authorizations, net	412,363	400,043
Other intangible assets, net	29,321	43,952
Other investments, net	110,040	126,369
Advances to affiliates, net	19,759	—
Other non-current assets, net	232,177	236,449
Non-current assets of discontinued operations	—	742,461
Total non-current assets	3,281,593	3,975,358
Total assets	$ 5,572,035	$ 6,893,172
Liabilities and Shareholders' Equity		
Current liabilities:		
Trade accounts payable	$ 121,552	$ 104,751
Current portion of long-term debt and finance lease obligations	486	919,582
Advances from affiliates, net	11,132	868
Contract liabilities	101,060	72,249
Accrued expenses and other current liabilities	246,799	157,654
Current liabilities of discontinued operations	—	49,055
Total current liabilities	481,029	1,304,159
Non-current liabilities:		
Long-term debt and finance lease obligations, net of current portion	2,389,733	2,386,202
Deferred tax liabilities, net	380,316	355,949
Operating lease liabilities	96,879	—
Advances from affiliates, net	23,980	33,438
Other non-current liabilities	65,935	71,647
Non-current liabilities of discontinued operations	—	349,282
Total non-current liabilities	2,956,843	3,196,518
Total liabilities	3,437,872	4,500,677
Commitments and contingencies		
Shareholders' equity:		
Preferred stock, $0.001 par value, 1,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Common stock, $0.01 par value; 1,000,000 shares authorized, 1,078 shares issued and outstanding at both December 31, 2019 and 2018	—	—
Additional paid-in capital	1,478,636	1,767,037
Accumulated other comprehensive income (loss)	(84,636)	(83,774)
Accumulated earnings (losses)	664,415	693,957
Total HSS shareholders' equity	2,058,415	2,377,220
Non-controlling interests	75,748	15,275
Total shareholders' equity	2,134,163	2,392,495
Total liabilities and shareholders' equity	$ 5,572,035	$ 6,893,172

The accompanying notes are an integral part of these Consolidated Financial Statements.

HUGHES SATELLITE SYSTEMS CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(Amounts in thousands)

	For the years ended December 31,		
	2019	2018	2017
Revenue:			
Services and other revenue	$ 1,623,458	$ 1,561,426	$ 1,275,553
Equipment revenue	266,703	205,410	239,489
Total revenue	1,890,161	1,766,836	1,515,042
Costs and expenses:			
Cost of sales - services and other (exclusive of depreciation and amortization)	555,701	559,838	497,111
Cost of sales - equipment (exclusive of depreciation and amortization)	225,103	176,600	195,439
Selling, general and administrative expenses	467,869	397,994	337,548
Research and development expenses	25,739	27,570	31,745
Depreciation and amortization	464,797	426,852	370,418
Impairment of long-lived assets	—	—	6,000
Total costs and expenses	1,739,209	1,588,854	1,438,261
Operating income (loss)	150,952	177,982	76,781
Other income (expense):			
Interest income	57,730	59,104	31,952
Interest expense, net of amounts capitalized	(272,218)	(231,169)	(213,166)
Gains (losses) on investments, net	(8,464)	187	(1,574)
Equity in earnings (losses) of unconsolidated affiliates, net	(3,333)	4,874	7,027
Foreign currency transaction gains (losses), net	(9,855)	(12,484)	(1,158)
Other, net	(633)	8,041	(1,030)
Total other income (expense), net	(236,773)	(171,447)	(177,949)
Income (loss) from continuing operations before income taxes	(85,821)	6,535	(101,168)
Income tax benefit (provision), net	(11,595)	(18,615)	93,766
Net income (loss) from continuing operations	(97,416)	(12,080)	(7,402)
Net income (loss) from discontinued operations	56,539	109,423	304,955
Net income (loss)	(40,877)	97,343	297,553
Less: Net income (loss) attributable to non-controlling interests	(11,335)	1,842	1,583
Net income (loss) attributable to HSS	$ (29,542)	$ 95,501	$ 295,970

The accompanying notes are an integral part of these Consolidated Financial Statements.

HUGHES SATELLITE SYSTEMS CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Amounts in thousands)

	For the years ended December 31,		
	2019	2018	2017
Net income (loss)	$ (40,877)	$ 97,343	$ 297,553
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	1,182	(31,938)	7,196
Unrealized gains (losses) on available-for-sale securities	1,817	(665)	(2,280)
Other	(114)	41	92
Amounts reclassified to net income (loss):			
Realized gains on available-for-sale securities	(419)	(212)	—
Other-than-temporary impairment loss on available-for-sale securities	—	—	3,298
Total other comprehensive income (loss), net of tax	2,466	(32,774)	8,306
Comprehensive income (loss)	(38,411)	64,569	305,859
Less: Comprehensive income (loss) attributable to non-controlling interests	(8,007)	453	1,992
Comprehensive income (loss) attributable to HSS	$ (30,404)	$ 64,116	$ 303,867

The accompanying notes are an integral part of these Consolidated Financial Statements.

HUGHES SATELLITE SYSTEMS CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(Amounts in thousands)

	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Earnings (Losses)	Non-controlling Interests	Total
Balance, December 31, 2016	$ 1,516,199	$ (60,719)	$ 286,713	$ 12,830	$ 1,755,023
Stock-based compensation	5,117	—	—	—	5,117
Transfer of launch service contracts to EchoStar	(145,114)	—	—	—	(145,114)
Contribution of EchoStar XIX satellite, net of deferred tax	349,337	—	—	—	349,337
Contribution of net assets pursuant to Share Exchange Agreement	219,662	—	—	—	219,662
Exchange of uplinking business net assets for HSS Tracking Stock	(190,221)	—	—	—	(190,221)
Other comprehensive income (loss)	—	7,805	—	409	8,214
Net income (loss)	—	—	295,970	1,583	297,553
Other, net	(419)	92	—	—	(327)
Balance, December 31, 2017	1,754,561	(52,822)	582,683	14,822	2,299,244
Cumulative effect of accounting changes	—	433	15,773	—	16,206
Balance, January 1, 2018	1,754,561	(52,389)	598,456	14,822	2,315,450
Stock-based compensation	5,435	—	—	—	5,435
Capital contribution from EchoStar Corporation	7,125	—	—	—	7,125
Other comprehensive income (loss)	—	(31,385)	—	(1,389)	(32,774)
Net income (loss)	—	—	95,501	1,842	97,343
Other, net	(84)	—	—	—	(84)
Balance, December 31, 2018	1,767,037	(83,774)	693,957	15,275	2,392,495
Stock-based compensation	5,436	—	—	—	5,436
Capital contribution from EchoStar Corporation	9,606	—	—	—	9,606
Purchase of non-controlling interest	(833)	—	—	(6,480)	(7,313)
Net assets distributed pursuant to the BSS Transaction	(332,699)	—	—	—	(332,699)
Issuance of equity and contribution of assets pursuant to the Yahsat JV formation	29,576	—	—	73,199	102,775
Other comprehensive income (loss)	—	(862)	—	3,328	2,466
Net income (loss)	—	—	(29,542)	(11,335)	(40,877)
Other, net	513	—	—	1,761	2,274
Balance, December 31, 2019	$ 1,478,636	$ (84,636)	$ 664,415	$ 75,748	$ 2,134,163

The accompanying notes are an integral part of these Consolidated Financial Statements.

HUGHES SATELLITE SYSTEMS CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)

	For the years ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income (loss)	$ (40,877)	$ 97,343	$ 297,553
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Depreciation and amortization	550,723	551,416	496,798
Impairment of long-lived assets	—	—	6,000
Losses (gains) on investments, net	8,464	(184)	1,574
Equity in losses (earnings) of unconsolidated affiliates, net	3,333	(4,791)	(7,027)
Foreign currency transaction losses (gains), net	9,855	12,484	1,158
Deferred tax provision (benefit), net	14,703	43,698	(268,071)
Stock-based compensation	5,436	5,435	5,117
Amortization of debt issuance costs	5,912	7,923	7,378
Dividends received from unconsolidated affiliates	2,716	10,000	19,000
Proceeds from sale of trading securities	—	—	8,922
Changes in current assets and current liabilities, net:			
Trade accounts receivable and contract assets, net	8,398	(17,840)	(12,459)
Advances to and from affiliates, net	(36,662)	7,276	12,176
Other current assets	(44,752)	13,429	(51,994)
Trade accounts payable	13,510	6,258	(4,826)
Contract liabilities	26,411	7,832	5,970
Accrued expenses and other current liabilities	93,117	9,007	7,731
Changes in non-current assets and non-current liabilities, net	13,557	(2,680)	(30,831)
Other, net	(240)	(3,903)	2,860
Net cash flows from operating activities	633,604	742,703	497,029
Cash flows from investing activities:			
Purchases of marketable investment securities	(709,350)	(2,063,042)	(535,476)
Sales and maturities of marketable investment securities	1,665,269	909,996	259,263
Investments in unconsolidated affiliates	7,851	(100,991)	—
Dividend received from unconsolidated affiliate	2,284	—	—
Expenditures for property and equipment	(309,291)	(391,065)	(401,538)
Refunds and other receipts related to property and equipment	—	77,524	4,311
Expenditures for externally marketed software	(29,310)	(31,639)	(31,331)
Purchases of regulatory authorizations	(7,850)	—	—
Payment for EchoStar XXI launch services	—	(7,125)	—
Net cash flows from investing activities	619,603	(1,606,342)	(704,771)
Cash flows from financing activities:			
Repurchase and maturity of the 2019 Senior Secured Notes	(920,923)	(70,173)	—
Repayment of other long-term debt and finance lease obligations	(29,347)	(41,019)	(37,063)
Payment of in-orbit incentive obligations	(4,430)	(4,796)	(5,850)
Capital contribution from EchoStar	—	7,125	—
Purchase of non-controlling interest	(7,313)	—	—
Other, net	1,172	—	1,036
Net cash flows from financing activities	(960,841)	(108,863)	(41,877)
Effect of exchange rates on cash and cash equivalents	(663)	(2,233)	1,286
Net increase (decrease) in cash and cash equivalents	291,703	(974,735)	(248,333)
Cash and cash equivalents, including restricted amounts, beginning of period	848,619	1,823,354	2,071,687
Cash and cash equivalents, including restricted amounts, end of period	$ 1,140,322	$ 848,619	$ 1,823,354
Supplemental disclosure of cash flow information:			
Cash paid for interest (including capitalized interest)	$ 216,025	$ 250,576	$ 236,232
Cash paid for income taxes	$ 3,094	$ 4,837	$ 3,574

The accompanying notes are an integral part of these Consolidated Financial Statements.

HUGHES SATELLITE SYSTEMS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1. ORGANIZATION AND BUSINESS ACTIVITIES

Principal Business

Hughes Satellite Systems Corporation (which, together with its subsidiaries, is referred to as “HSS,” the “Company,” “we,” “us” and “our”) is a holding company and a subsidiary of EchoStar Corporation (“EchoStar”). We are a global provider of broadband satellite technologies, broadband internet services for consumer customers, which include home and small to medium-sized businesses, and satellite services. We also deliver innovative network technologies, managed services and communications solutions for enterprise customers, which include aeronautical and government enterprises. We operate in the following two business segments:

- ***Hughes*** — which provides broadband satellite technologies and broadband internet services to domestic and international consumer customers and broadband network technologies, managed services, equipment, hardware, satellite services and communication solutions to service providers and enterprise customers. The Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems. In addition, our Hughes segment designs, develops, constructs and provides telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers.
- ***ESS*** — which uses certain of our owned and leased in-orbit satellites and related licenses to provide satellite services on a full-time and/or occasional-use basis to United States (“U.S.”) government service providers, internet service providers, broadcast news organizations, content providers and private enterprise customers.

Our operations also include various corporate departments (primarily Executive, Treasury, Strategic Development, Human Resources, IT, Finance, Accounting, Real Estate and Legal) and other activities that have not been assigned to our operating segments such as costs incurred in certain satellite development programs and other business development activities, and gains or losses from certain of our investments. These activities, costs and income, as well as eliminations of intersegment transactions, are accounted for in *Corporate and Other*. We also divide our operations by primary geographic market as follows: (i) North America (the U.S. and its territories, Mexico, and Canada); (ii) South and Central America and; (iii) All other (Asia, Africa, Australia, Europe, India, and the Middle East). Refer *to Note 18. Segment Reporting* for further detail.

In May 2019, EchoStar and one of our former subsidiaries, EchoStar BSS Corporation (“BSS Corp.”), entered into a master transaction agreement (the “Master Transaction Agreement”) with DISH Network Corporation (“DISH”) and a wholly-owned subsidiary of DISH (“Merger Sub”). Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) EchoStar and its subsidiaries and we and our subsidiaries transferred to BSS Corp. certain real property and the various businesses, products, licenses, technology, revenues, billings, operating activities, assets and liabilities primarily relating to the former portion of our ESS segment that managed, marketed and provided (1) broadcast satellite services primarily to DISH and its subsidiaries (together with DISH, “DISH Network”) and EchoStar’s joint venture Dish Mexico, S. de R.L. de C.V., (“Dish Mexico”) and its subsidiaries and (2) telemetry, tracking and control (“TT&C”) services for satellites owned by DISH Network and a portion of EchoStar’s and our other businesses (collectively, the “BSS Business”); (ii) EchoStar distributed to each holder of shares of EchoStar’s Class A or Class B common stock entitled to receive consideration in the transaction an amount of shares of common stock of BSS Corp., par value $0.001 per share (“BSS Common Stock”), equal to one share of BSS Common Stock for each share of EchoStar’s Class A or Class B common stock owned by such EchoStar stockholder (the “Distribution”); and (iii) immediately after the Distribution, (1) Merger Sub merged with and into BSS Corp. (the “Merger”), such that BSS Corp. became a wholly-owned subsidiary of DISH and DISH owns and operates the BSS Business, and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Class A common stock, par value $0.001 per share (“DISH Common Stock”) ((i) - (iii) collectively, the “BSS Transaction”).

In connection with the BSS Transaction, EchoStar and DISH Network have agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively. Additionally, EchoStar and DISH and certain of our, EchoStar’s and DISH’s subsidiaries, as applicable, have (i) entered into certain customary agreements covering, among other things, matters relating to taxes, employees, intellectual property and the provision of transitional services; (ii) terminated certain previously existing agreements; and (iii) amended certain existing agreements and entered into certain new agreements pursuant to which we, EchoStar and certain of our and its other subsidiaries, on the one hand, and DISH Network, on the other hand, will obtain and provide certain products, services and rights from and to each other.

The BSS Transaction was structured in a manner intended to be tax-free to EchoStar and its stockholders for U.S. federal income tax purposes and was accounted for as a spin-off to EchoStar's stockholders as we and EchoStar did not receive any consideration. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. As a result of the BSS Transaction, the financial results of the BSS Business, except for certain real estate that transferred in the transaction, are presented as discontinued operations and, as such, excluded from continuing operations and segment results for all periods presented in these Consolidated Financial Statements.

During 2017, EchoStar and certain of its and our subsidiaries entered into a share exchange agreement (the "Share Exchange Agreement") with DISH and certain of its subsidiaries. EchoStar and certain of its and our subsidiaries received all the shares of the Hughes Retail Preferred Tracking Stock previously issued by EchoStar and us (together, the "Tracking Stock") in exchange for 100% of the equity interests of certain EchoStar subsidiaries that held substantially all of EchoStar's former EchoStar Technologies businesses and certain other assets (collectively, the "Share Exchange"). Following the consummation of the Share Exchange, EchoStar no longer operates its former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated.
Refer to *Note 5. Discontinued Operations* for further detail. Additionally, all amounts in the following footnotes reference results from continuing operations unless otherwise noted.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation and Basis of Presentation

These Consolidated Financial Statements and the accompanying notes are prepared in conformity with generally accepted accounting principles in the United States ("U.S. GAAP"). We consolidate all entities in which we have a controlling financial interest. We are deemed to have a controlling financial interest in variable interest entities in which we are the primary beneficiary and in other entities in which we own more than 50% of the outstanding voting shares and other shareholders do not have substantive rights to participate in management. For entities we control but do not wholly own, we record a non-controlling interest within shareholders' equity for the portion of the entity's equity attributed to the non-controlling ownership interests. All significant intercompany balances and transactions have been eliminated in consolidation.

All amounts presented in these Consolidated Financial Statements and their accompanying notes are expressed in thousands of U.S. dollars, except share and per share amounts and unless otherwise noted.

Reclassification

Certain prior period amounts have been reclassified to conform with the current period presentation.

Use of Estimates

We are required to make certain estimates and assumptions that affect the amounts reported in these Consolidated Financial Statements. The most significant estimates and assumptions are used in determining: (i) inputs used to recognize revenue over time, including amortization periods for deferred contract acquisition costs; (ii) allowances for doubtful accounts; (iii) deferred taxes and related valuation allowances, including uncertain tax positions; (iv) loss contingencies; (v) fair value of financial instruments; (vi) fair value of assets and liabilities acquired in business combinations; and (vii) asset impairment testing.

We base our estimates and assumptions on historical experience, observable market inputs and on various other factors that we believe to be relevant under the circumstances. Due to the inherent uncertainty involved in making estimates, actual results may differ from previously estimated amounts and such differences may be material to our financial statements. Additionally, changing economic conditions may increase the inherent uncertainty in the estimates and assumptions indicated above. We review our estimates and assumptions periodically and the effects of revisions thereto are reflected in the period they occur or prospectively if the revised estimate affects future periods.

Fair Value Measurements

We determine fair value based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Market or observable inputs are the preferred source of values, followed by unobservable inputs or assumptions based on hypothetical transactions in the absence of market inputs. We utilize the highest level of inputs available according to the following hierarchy in determining fair value:

- Level 1 - Defined as observable inputs being quoted prices in active markets for identical assets;
- Level 2 - Defined as observable inputs other than quoted prices included in Level 1, including quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which significant inputs and significant value drivers are observable in active markets; and
- Level 3 - Defined as unobservable inputs for which little or no market data exists, consistent with characteristics of the asset or liability that would be considered by market participants in a transaction to purchase or sell the asset or liability.

Fair values of our marketable investment securities are measured on a recurring basis based on a variety of observable market inputs. For our investments in publicly traded equity securities and U.S. government securities, fair value ordinarily is determined based on Level 1 measurements that reflect quoted prices for identical securities in active markets. Fair values of our investments in other marketable debt securities are generally based on Level 2 measurements as the markets for such debt securities are less active. We consider trades of identical debt securities on or near the measurement date as a strong indication of fair value and matrix pricing techniques that consider par value, coupon rate, credit quality, maturity and other relevant features may also be used to determine fair value of our investments in marketable debt securities. Fair values for our outstanding debt are based on quoted market prices in less active markets and are categorized as Level 2 measurements. Additionally, we use fair value measurements from time to time in connection with other investments, asset impairment testing and the assignment of purchase consideration to assets and liabilities of acquired companies. Those fair value measurements typically include significant unobservable inputs and are categorized within Level 3 of the fair value hierarchy.

Transfers between levels in the fair value hierarchy are considered to occur at the beginning of the quarterly accounting period. There were no transfers between levels during the years ended December 31, 2019 and 2018.

As of December 31, 2019 and 2018, the carrying amounts of our cash and cash equivalents, trade accounts receivable and contract assets, net, trade accounts payable, and accrued expenses and other current liabilities were equal to or approximated their fair value due to their short-term nature or proximity to current market rates.

Revenue Recognition

Overview

Revenue is recognized upon transfer of control of the promised goods or our performance of the services to our customers in an amount that reflects the consideration we expect to receive in exchange for those goods or services. We enter into contracts that may include various combinations of products and services, which are generally distinct and accounted for as separate performance obligations.

We also recognize lease revenue which is derived from leases of property and equipment which, for operating leases, is reported in *Services and other revenue* in the Consolidated Statements of Operations and, for sales-type leases, is reported in *Equipment revenue* in the Consolidated Statements of Operations. Certain of our customer contracts contain embedded equipment leases, which we separate from non-lease components of the contract based on the relative standalone selling prices of the lease and non-lease components.

Hughes Segment

Our Hughes segment service contracts typically obligate us to provide substantially the same services on a recurring basis in exchange for fixed recurring fees over the term of the contract. We satisfy such performance obligations over time and recognize revenue ratably as services are rendered over the service period. Certain of our contracts with service obligations provide for fees based on usage, capacity or volume. We satisfy these performance obligations and recognize the related revenue at the point in time, or over the period, when the services are rendered. Our Hughes segment also sells and leases communications equipment to its customers. Revenue from equipment sales generally is recognized based upon shipment terms. Our equipment sales contracts typically include standard product warranties, but generally do not provide for returns or refunds. Revenue for extended warranties is recognized ratably over the extended warranty period. For contracts with multiple performance obligations, we typically allocate the contract's transaction price to each performance obligation based on their relative standalone selling prices. When the standalone selling price is not observable, our primary method used to estimate standalone selling price is the expected cost plus a margin. Our contracts generally require customer payments to be made at or shortly after the time we transfer control of goods or perform the services.

In addition to equipment and service offerings, our Hughes segment also enters into long-term contracts to design, develop, construct and install complex telecommunication networks for mobile system operators and enterprise customers. Revenue from such contracts is generally recognized over time as a measure of progress that depicts the transfer of control of the goods or services to the customer. Depending on the nature of the arrangement, we measure progress toward contract completion using an appropriate input method or output method. Under the input method, we recognize the transaction price as revenue based on the ratio of costs incurred to estimated total costs at completion. Under the output method, revenue and cost of sales are recognized as products are delivered based on the expected profit for the entire agreement. Profit margins on long-term contracts generally are based on estimates of revenue and costs at completion. We review and revise our estimates periodically and recognize related adjustments in the period in which the revisions are made. Estimated losses on contracts are recorded in the period in which they are identified. We generally receive interim payments as work progresses, although for some contracts, we may be entitled to receive an advance payment.

ESS Segment

Generally, our ESS segment service contracts with customers contain a single performance obligation and, therefore, there is no need to allocate the transaction price. We transfer control and recognize revenue for satellite services at the point in time or over the period when the services are rendered.

Lease Revenue

We lease satellite capacity, communications equipment and real estate to certain of our customers. We identify and determine the classification of such leases as operating leases or sales-type leases. A lease is classified as a sales-type lease if it meets the criteria for a finance lease; otherwise it is classified as an operating lease. Some of our leases are embedded in contracts with customers that include non-lease performance obligations. For such contracts, except where we have elected otherwise, we allocate consideration in the contract between lease and non-lease components based on their relative standalone selling prices. We elected an accounting policy to not separate the lease of equipment from related services in our HughesNet satellite internet service (the "HughesNet service") contracts with customers and account for all revenue from such contracts as non-lease service revenue. Assets subject to operating leases remain in *Property and equipment, net* and continue to be depreciated. Assets subject to sales-type leases are derecognized from *Property and equipment, net* at lease commencement and a net investment in the lease asset is recognized in *Trade accounts receivable and contract assets, net* and *Other non-current assets, net*.

Operating lease revenue is generally recognized on a straight-line basis over the lease term. Sales-type lease revenue and a corresponding receivable generally are recognized at lease commencement based on the present value of the future lease payments and related interest income on the receivable is recognized over the lease term. Payments under sales-type leases are discounted using the interest rate implicit in the lease or our incremental borrowing rate if the interest rate implicit in the lease cannot be reasonably determined. We report revenue from sales-type leases at the commencement date in *Equipment revenue* and periodic interest income in *Services and other revenue.* We report operating lease revenue in *Services and other revenue*.

Other

Sales and Value Added Taxes, Universal Service Fees and other taxes that we collect concurrent with revenue producing activities are excluded from revenue, and included in *Accrued expenses and other current liabilities* in the Consolidated Balance Sheets.

Shipping and handling costs associated with outbound freight are accounted for as a fulfillment cost after control over a product has transferred to the customer and are included in *Cost of sales - equipment* in the Consolidated Statements of Operations at the time of shipment.

Cost of Sales - Services and Other

Cost of sales - services and other in the Consolidated Statements of Operations primarily consists of costs of satellite capacity and services, hub infrastructure, customer care, wireline and wireless capacity and direct labor costs associated with the services provided and is generally charged to expense as incurred.

Cost of Sales - Equipment

Cost of sales - equipment in the Consolidated Statements of Operations primarily consists of inventory costs, including freight and royalties, and is generally recognized at the point in time control of the equipment is passed to the customer and related revenue is recognized.

Additionally, customer-related research and development costs are incurred in connection with the specific requirements of a customer’s order; in such instances, the amounts for these customer funded development efforts are also included in *Cost of sales - equipment* in the Consolidated Statements of Operations.

Stock-based Compensation Expense

Stock-based compensation expense is recognized based on the fair value of stock awards ultimately expected to vest. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Compensation expense for awards with service conditions only is recognized on a straight-line basis over the requisite service period for the entire award. Compensation expense for awards subject to performance conditions is recognized only when satisfaction of the performance condition is probable.

Advertising Costs

Advertising costs are expensed as incurred and are included in *Selling, general and administrative expenses* in the Consolidated Statements of Operations.

Research and Development

Research and development costs, not incurred in connection with customer requirements, are generally expensed when incurred.

Debt Issuance Costs

Costs of issuing debt generally are deferred and amortized utilizing the effective interest method, with amortization included in *Interest expense, net of amounts capitalized* in the Consolidated Statements of Operations. We report unamortized debt issuance costs as a reduction of the related long-term debt in the Consolidated Balance Sheets.

Foreign Currency

The functional currency for certain of our foreign operations is determined to be the local currency. Accordingly, we translate assets and liabilities of these foreign entities from their local currencies to U.S. dollars using period-end exchange rates and translate income and expense accounts at monthly average rates. The resulting translation adjustments are reported as *Foreign currency translation adjustments* in the Consolidated Statements of Comprehensive Income (Loss). Except in certain uncommon circumstances, we have not recorded deferred income taxes related to our foreign currency translation adjustments.

Gains and losses resulting from the re-measurement of transactions denominated in foreign currencies are recognized in *Foreign currency transaction gains (losses), net* in the Consolidated Statements of Operations.

Income Taxes

We are included in the consolidated federal income tax return of EchoStar. We recognize a provision or benefit for income taxes currently payable or receivable and for income tax amounts deferred to future periods based upon a separate return allocation method which results in income tax expense that approximates the expense that would result if we were a stand-alone entity. Deferred tax assets and liabilities reflect the effects of tax losses, credits, and the future income tax effects of temporary differences between U.S. GAAP carrying amounts of existing assets and liabilities and their respective tax bases and are measured using enacted tax rates that apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Deferred tax assets are offset by valuation allowances when we determine it is more likely than not that such deferred tax assets will not be realized in the foreseeable future. We determine deferred tax assets and liabilities separately for each taxing jurisdiction and report the net amount for each jurisdiction as a non-current asset or liability in the Consolidated Balance Sheets.

From time to time, we engage in transactions where the income tax consequences are uncertain. We recognize tax benefits when, in management’s judgment, a tax filing position is more likely than not to be sustained if challenged by the tax authorities. For tax positions that meet the more-likely-than-not threshold, we may not recognize a portion of a tax benefit depending on management’s assessment of how the tax position will ultimately be settled. Unrecognized tax benefits generally are netted against the deferred tax assets associated with our net operating loss carryforwards. We adjust our estimates periodically based on ongoing examinations by, and settlements with, various taxing authorities, as well as changes in tax laws, regulations and precedent. Estimates of our uncertain tax positions are made based upon prior experience and are updated in light of changes in facts and circumstances. However, due to the uncertain and complex application of tax regulations, it is possible that the ultimate resolution of audits may result in liabilities which could be materially different from these estimates. In such an event, we will record additional income tax provision or benefit in the period in which such resolution occurs. We classify interest and penalties, if any, associated with our unrecognized tax benefits as a component of income tax provision or benefit.

Lessee Accounting

We lease real estate, satellite capacity and equipment in the conduct of our business operations. For contracts entered into on or after January 1, 2019, at contract inception, we assess whether the contract is, or contains, a lease. Generally, we determine that a lease exists when (i) the contract involves the use of a distinct identified asset, (ii) we obtain the right to substantially all economic benefits from use of the asset and (iii) we have the right to direct the use of the asset. A lease is classified as a finance lease when one or more of the following criteria are met: (i) the lease transfers ownership of the asset by the end of the lease term, (ii) the lease contains an option to purchase the asset that is reasonably certain to be exercised, (iii) the lease term is for a major part of the remaining useful life of the asset, (iv) the present value of the lease payments equals or exceeds substantially all of the fair value of the asset or (v) the asset is of a specialized nature and there is not expected to be an alternative use to the lessor at the end of the lease term. A lease is classified as an operating lease if it does not meet any of these criteria. Our operating leases consist primarily of leases for office space, data centers and satellite ground facilities. Our finance leases consist primarily of leases for satellite capacity.

At the lease commencement date, we recognize a right-of-use asset and a lease liability for all leases, except short-term leases with an original term of 12 months or less. The right-of-use asset represents the right to use the leased asset for the lease term including any renewal options we are reasonably certain to exercise. The lease liability represents the present value of the lease payments under the lease. The right-of-use asset is initially measured at cost, which primarily comprises the initial amount of the lease liability, plus any prepayments to the lessor and initial direct costs such as brokerage commissions, less any lease incentives received. All right-of-use assets are periodically reviewed for impairment in accordance with standards that apply to long-lived assets. The lease liability is initially measured at the present value of the minimum lease payments, discounted using an estimate of our incremental borrowing rate for a collateralized loan with the same term as the underlying lease. The incremental borrowing rates used for the initial measurement of lease liabilities are based on the original lease terms.

We report operating lease right-of-use assets in *Operating lease right-of-use assets* and operating lease liabilities in *Accrued expenses and other current liabilities* and *Operating lease liabilities*. We report finance lease right-of-use assets in *Property and equipment, net* and finance lease liabilities in *Current portion of long-term debt and finance lease obligations* and *Long-term debt and finance lease obligations, net of current portion*.

Minimum lease payments included in the measurement of lease liabilities consist of (i) fixed lease payments for the non-cancelable lease term, (ii) fixed lease payments for optional renewal periods where it is reasonably certain the renewal option will be exercised and (iii) variable lease payments that depend on an underlying index or rate, based on the index or rate in effect at lease commencement. Certain of our real estate lease agreements require payments for non-lease costs such as utilities and common area maintenance. We elected an accounting policy to not account for such payments separately from the related lease payments. Our policy election results in a higher initial measurement of lease liabilities when such non-lease payments are fixed amounts. Certain of our real estate lease agreements require variable lease payments that do not depend on an underlying index or rate, such as sales and value-added taxes and our proportionate share of actual property taxes, insurance and utilities, which are recognized in operating expenses as incurred.

Lease expense for operating leases consists of the fixed lease payments recognized on a straight-line basis over the lease term plus variable lease payments as incurred. Lease expense for finance leases consists of the amortization of the right-of-use asset on a straight-line basis over the lease term and interest expense on the lease liability based on the discount rate at lease commencement. For both operating and finance leases, lease payments are allocated between a reduction of the lease liability and interest expense. Amortization of the right-of-use asset for operating leases reflects amortization of the lease liability, any differences between straight-line expense and related lease payments during the accounting period, and any impairments.

Business Combinations

We account for all business combinations that result in our control over another entity by using the acquisition method of accounting, which requires us to allocate the purchase price of the acquired business to the identifiable tangible and intangible assets acquired and liabilities assumed, including contingent consideration, and non-controlling interests, based upon their estimated fair values at the date of acquisition. The difference between the purchase price and the excess of the aggregate estimated fair values of assets acquired and liabilities assumed is recorded as goodwill. In determining the estimated fair values of assets acquired and liabilities assumed in a business combination, we use various recognized valuation methods including present value modeling, referenced market values, where available and cost based approaches. Valuations are performed by management or independent valuation specialists under management’s supervision, where appropriate.

Accounting for business combinations requires us to make significant estimates and assumptions, especially at the acquisition date, including our estimates for intangible assets, contractual obligations assumed and contingent consideration, where applicable. While we believe the assumptions and estimates we have made are reasonable and appropriate, they are based in part on historical experience and information obtained from management of the acquired business and are inherently uncertain and subject to refinement.

We believe that the estimated fair values assigned to the assets we have acquired and liabilities we have assumed are based on reasonable and appropriate assumptions. While we believe our estimates and assumptions are reasonable and appropriate, they are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the assets we have acquired and liabilities we have assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the estimated fair values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments would be recorded in the Consolidated Statements of Operations. In addition, results of operations of the acquired company are included in the our results from the date of the acquisition forward and include amortization expense arising from acquired intangible assets. We expense all costs as incurred related to or involved with an acquisition in *Other, net*, in the Consolidated Statements of Operations.

Cash and Cash Equivalents

We consider all liquid investments purchased with an original maturity of less than 90 days to be cash equivalents. Cash equivalents as of December 31, 2019 and 2018 primarily consisted of commercial paper, government bonds, corporate notes and money market funds. The amortized cost of these investments approximates their fair value.

Marketable Investment Securities

Debt Securities

We account for our debt securities as available-for-sale or using the fair value option based on our investment strategy for the securities. For available-for-sale debt securities, we recognize periodic changes in the difference between fair value and amortized cost in *Unrealized gains (losses) on available-for-sale securities* in the Consolidated Statements of Comprehensive Income (Loss). Gains and losses realized upon sales of available-for-sale debt securities are reclassified from other comprehensive income (loss) and recognized on the trade date in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. We use the first-in, first-out ("FIFO") method to determine the cost basis on sales of available-for-sale debt securities. Interest income from available-for-sale debt securities is reported in *Interest income* in the Consolidated Statements of Operations.

We periodically evaluate our available-for-sale debt securities portfolio to determine whether any declines in the fair value of these securities are other-than-temporary. Our evaluation considers, among other things, (i) the length of time and extent to which the fair value of such security has been lower than amortized cost, (ii) market and company-specific factors related to the security and (iii) our intent and ability to hold the investment to maturity or when it recovers its value. We generally consider a decline to be other-than-temporary when (i) we intend to sell the security, (ii) it is more likely than not that we will be required to sell the security before maturity or when it recovers its value or (iii) we do not expect to recover the amortized cost of the security at maturity. Declines in the fair value of available-for-sale debt securities that are determined to be other-than-temporary are reclassified from other comprehensive income (loss) and recognized in *Net income (loss)* in the Consolidated Statements of Operations, thus establishing a new cost basis for the investment.

From time to time we make strategic investments in marketable corporate debt securities. Generally, we elect to account for these debt securities using the fair value option because it results in consistency in accounting for unrealized gains and losses for all securities in our portfolio of strategic investments. When we elect the fair value option for investments in debt securities, we recognize periodic changes in fair value of these securities in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. Interest income from these securities is reported in *Interest income* in the Consolidated Statements of Operations.

Equity Securities

We account for our equity securities with readily determinable fair values at fair value and recognize periodic changes in the fair value in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. We recognize dividend income on equity securities on the ex-dividend date and report such income in *Other, net* in the Consolidated Statements of Operations.

Restricted Marketable Investment Securities

Restricted marketable investment securities that are pledged as collateral for our letters of credit and surety bonds are included in *Other non-current assets, net* in the Consolidated Balance Sheets. Restricted marketable securities are accounted for in the same manner as marketable securities that are not restricted, but are presented differently in the Consolidated Balance Sheets due to the restrictions.

Trade Accounts Receivable

Trade accounts receivable includes amounts billed and currently due from customers and represents our unconditional rights to consideration arising from our performance under our customer contracts. Trade accounts receivable also includes amounts due from customers under our leasing arrangements. We make ongoing estimates relating to the collectability of our trade accounts receivable and maintain an allowance for estimated losses resulting from the inability of our customers to make the required payments. In determining the amount of the allowance, we consider historical levels of credit losses and make judgments about the creditworthiness of our customers based on ongoing credit evaluations. Past due trade accounts receivable balances are written off when our internal collection efforts have been unsuccessful. Bad debt expense related to our trade accounts receivable and other contract assets is included in *Selling, general and administrative expenses* in the Consolidated Statements of Operations.

Contract Assets

Contract assets represent revenue that we have recognized in advance of billing the customer and are included in *Trade accounts receivable and contract assets, net* or *Other non-current assets, net* in the Consolidated Balance Sheets based on the expected timing of customer payment. Our contract assets typically relate to our long-term contracts where we recognize revenue using the cost-based input method and the revenue recognized exceeds the amount billed to the customer.

Contract Acquisition Costs

Our contract acquisition costs represent incremental direct costs of obtaining a contract and consist primarily of sales incentives paid to employees and third-party representatives. When we determine that our contract acquisition costs are recoverable, we defer and amortize the costs over the contract term, or over the estimated life of the customer relationship if anticipated renewals are expected and the incentives payable upon renewal are not commensurate with the initial incentive. We amortize contract acquisition costs in proportion to the revenue to which the costs relate. We expense sales incentives as incurred if the expected amortization period is one year or less. Unamortized contract acquisition costs are included in *Other non-current assets, net* in the Consolidated Balance Sheets and related amortization expense is included in *Selling, general and administrative expenses* in the Consolidated Statements of Operations.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost of inventory is determined using the FIFO method and consists primarily of materials, direct labor and indirect overhead incurred in the procurement and manufacturing of our products. We use standard costing methodologies in determining the cost of certain of our finished goods and work-in-process inventories. We determine net realizable value using our best estimates of future use or recovery, considering the aging and composition of inventory balances, the effects of technological and/or design changes, forecasted future product demand based on firm or near-firm customer orders and alternative means of disposition of excess or obsolete items. We recognize losses within *Cost of sales - equipment* in the Consolidated Statements of Operations when we determine that the cost of inventory and commitments to purchase inventory exceed net realizable value.

Property and Equipment

Satellites

Satellites are stated at cost, less accumulated depreciation. Depreciation is recorded on a straight-line basis over their estimated useful lives. The cost of our satellites includes construction costs, including the present value of in-orbit incentives payable to the satellite manufacturer, launch costs, capitalized interest and related insurance premiums. We depreciate our owned satellites on a straight-line basis over the estimated useful life of each satellite.

We have satellites acquired under finance leases. The recorded costs of those satellites are the present values of all lease payments. We amortize our finance lease right-of-use satellites over their respective lease terms.

Our satellites may experience anomalies from time to time, some of which may have a significant adverse effect on their remaining useful lives, the commercial operation of the satellites or our operating results or financial position.

We evaluate our satellites for impairment and test for recoverability whenever events or changes in circumstances indicate that their carrying value may not be recoverable. Certain anomalies may be considered a significant adverse change in the physical condition of a particular satellite. However, based on redundancies designed within each satellite, certain of these anomalies may not be considered to be significant events requiring a test of recoverability.

We generally do not carry in-orbit insurance on our satellites and payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. However, we may be required to carry insurance on specific satellites and payloads per the terms of certain agreements. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Other Property and Equipment

Other property and equipment are stated at cost, less accumulated depreciation. Depreciation is recorded on a straight-line basis over their estimated useful lives. Other property and equipment includes: land; buildings and improvements; furniture, fixtures, equipment and internal-use software; customer premises equipment; and construction in process. Costs related to the procurement and development of software for internal-use are capitalized and amortized using the straight-line method over the estimated useful life of the software, not in excess of five years. Repair and maintenance costs are charged to expense when incurred.

Goodwill

Goodwill represents the excess of the cost of acquired businesses over the estimated fair values assigned to the identifiable assets acquired and liabilities assumed. We test goodwill for impairment annually in our second fiscal quarter, or more frequently if indicators of impairment may exist. All of our goodwill is assigned to our Hughes segment, as it was generated through EchoStar’s acquisition of Hughes Communications, Inc. (“Hughes Communications”) and its subsidiaries in 2011 (the “Hughes Acquisition”), and the agreement with Al Yah Satellite Communications Company PrJSC (“Yahsat”) pursuant to which, in November 2019, Yahsat contributed its satellite communications services business in Brazil to one of our Brazilian subsidiaries in exchange for a 20% equity ownership interest in that subsidiary (the “Yahsat Brazil JV Transaction”).

We consider qualitative factors to assess if it is more likely than not that the fair value for goodwill is below the carrying amount. We may also elect to bypass the qualitative assessment and perform a quantitative assessment. In conducting a qualitative assessment, we analyze a variety of events or factors that may influence the fair value of the reporting unit. There has been no impairment to date.

Regulatory Authorizations

Finite Lived

We have regulatory authorizations that are not related to the Federal Communications Commission (“FCC”) and have determined that they have finite lives due to uncertainties about the ability to extend or renew their terms.

Finite lived regulatory authorizations are amortized over their estimated useful lives on a straight-line basis. Renewal costs are usually capitalized when they are incurred.

Indefinite Lived

We also have indefinite lived regulatory authorizations that primarily consist of FCC authorizations and certain other contractual or regulatory rights to use spectrum at specified orbital locations. We have determined that our FCC authorizations generally have indefinite useful lives based on the following:

- FCC authorizations are non-depleting assets;
- Renewal satellite applications generally are authorized by the FCC subject to certain conditions, without substantial cost under a stable regulatory, legislative and legal environment;
- Expenditures required to maintain the authorization are not significant; and
- We intend to use these authorizations indefinitely.

Costs incurred to maintain or renew indefinite-lived regulatory authorizations are expensed as incurred.

Other Intangible Assets

Our other intangible assets consist of customer relationships, patents, trademarks and licenses which are amortized using the straight-line method over their estimated useful lives. We evaluate the recoverability of intangible assets periodically by taking into account events or circumstances that indicate that the carrying amount of the assets may not be recoverable.

Impairment of Long-lived Assets

We review our long-lived assets for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. The evaluation is performed at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. For assets held and used in operations, the asset is not recoverable if the carrying amount of the asset exceeds its undiscounted estimated future net cash flows. When an asset is not recoverable, we adjust the carrying amount of such asset to its estimated fair value and recognize the impairment loss in *Impairment of long-lived assets* in the Consolidated Statements of Operations.

Other Investments

Equity Method Investments

We use the equity method to account for investments when we have the ability to exercise significant influence on the operating decisions of the affiliate. Such investments are initially recorded at cost and subsequently adjusted for our proportionate share of the net earnings or loss of the investee, which is reported in *Equity in earnings (losses) of unconsolidated affiliates, net* in the Consolidated Statements of Operations. During the fourth quarter of 2019, we changed our accounting policy to record our share of the net earnings or losses of these affiliates on a three-month lag. This change was immaterial to these Consolidated Financial Statements. Additionally, the carrying amount of such investments includes a component of goodwill when the cost of our investment exceeds the fair value of the underlying identifiable assets and liabilities of the affiliate. Lastly, dividends received from these affiliates reduces the carrying amount of our investment.

Other Equity Investments

We generally measure investments in non-publicly traded equity instruments without a readily determinable fair value at cost adjusted for observable price changes in orderly transactions for the identical or similar securities of the same issuer and changes resulting from impairments, if any. Other equity instruments are measured to determine their value based on observable market information.

Impairment Considerations

We periodically evaluate all of our other investments to determine whether (i) events or changes in circumstances have occurred that may have a significant adverse effect on the fair value of the investment and (ii) if there has been observable price changes in orderly transactions for identical or similar securities of the same issuer. We consider information if provided to us by our investees such as current financial statements, business plans, investment documentation, capitalization tables, liquidation waterfalls, and board materials; and we may make additional inquiries of investee management.

Indicators of impairment may include, but are not limited to, unprofitable operations, material loss contingencies, changes in business strategy, changes in the investees' enterprise value and changes in the investees' investment pricing. When we determine that one of our other investments is impaired we reduce its carrying value to its estimated fair value and recognize the impairment loss in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. Additionally, when there has been an observable price change to a cost method investment, we adjust the carrying amount of the investment to its then estimated fair value and recognize the investment gain or loss in *Gains (losses) on investments, net* in the Consolidated Statements of Operations.

Externally Marketed Software

Costs related to the procurement and development of externally marketed software are capitalized and amortized using the straight-line method over the estimated useful life of the software, not in excess of five years. Capitalized costs of externally marketed software are included in *Other non-current assets, net* in the Consolidated Balance Sheets. Externally marketed software generally is installed in the equipment we sell or lease to customers. We conduct software program reviews for externally marketed capitalized software costs at least annually, or as events and circumstances warrant such a review, to determine if capitalized software development costs are recoverable and to ensure that costs associated with programs that are no longer generating revenue are expensed.

Contract Liabilities

Contract liabilities consist of advance payments and billings in excess of revenue recognized under customer contracts and are included in *Contract liabilities* or *Other non-current liabilities* in the Consolidated Balance Sheets based on the timing of when we expect to recognize revenue. We recognize contract liabilities as revenue after all revenue recognition criteria have been met.

Recently Adopted Accounting Pronouncements

Leases

We adopted ASU No. 2016-02 - *Leases (Topic 842)*, as amended, codified as Accounting Standard Codification ("ASC 842"), as of January 1, 2019. The primary impact of ASC 842 on these Consolidated Financial Statements is the recognition of right-of-use assets and related liabilities in the Consolidated Balance Sheet for leases where we are the lessee. We elected to apply the requirements of the new standard prospectively on January 1, 2019 and did not restate these Consolidated Financial Statements for prior periods. Consequently, certain amounts reported in the Consolidated Balance Sheet as of December 31, 2019 are not comparable to those reported as of December 31, 2018 or earlier dates. Our adoption of ASC 842 did not have a material impact on our results of operations or cash flows for the year ended December 31, 2019.

Except for the new requirement to recognize assets and liabilities on the balance sheet for operating leases where we are the lessee, under our ASC 842 transition method, we continue to apply prior accounting standards to leases that commenced prior to 2019. We fully apply ASC 842 requirements only to leases that commenced or were modified on or after January 1, 2019. We elected certain practical expedients under our transition method, including elections to not reassess (i) whether a contract is or contains a lease and (ii) the classification of existing leases. We also elected not to apply hindsight in determining whether optional renewal periods should be included in the lease term, which in some instances may impact the initial measurement of the lease liability and the calculation of straight-line expense over the lease term for operating leases. As a result of our transition elections, there was no change in our recognition of revenue and expense for leases that commenced prior to 2019. In addition, the application of ASC 842 requirements to new and modified leases did not materially affect our recognition of revenue or expenses for the year ended December 31, 2019.

Our adoption of ASC 842 resulted in the following adjustments to the Consolidated Balance Sheet effective January 1, 2019:

	Balance December 31, 2018	Adoption of ASC 842 Increase (Decrease)	Balance January 1, 2019
Other current assets	$ 152,666	$ (28)	$ 152,638
Operating lease right-of-use assets	—	117,006	117,006
Other non-current assets, net	236,449	(7,272)	229,177
Total assets	6,893,172	109,706	7,002,878
Accrued expenses and other current liabilities	157,654	14,444	172,098
Operating lease liabilities	—	99,133	99,133
Other non-current liabilities	71,647	(3,871)	67,776
Total liabilities	4,500,677	109,706	4,610,383
Total liabilities and shareholders' equity	6,893,172	109,706	7,002,878

Revenue Recognition and Financial Instruments

On January 1, 2018, we adopted *ASU No. 2014-09, Revenue from Contracts with Customers and related amendments (collectively, the "New Revenue Standard")*. The New Revenue Standard established a comprehensive new model for revenue recognition, which is codified in Topic 606 (see Revenue Recognition above), and provided guidance for certain costs associated with customer contracts. We adopted the New Revenue Standard using the modified retrospective method for contracts that were not completed as of January 1, 2018. Accordingly, comparative information for prior periods has not been restated and continues to be reported under the accounting standards in effect for those periods. Upon adoption of the New Revenue Standard, we recognized the cumulative effect of its initial application as a net increase to *Accumulated earnings* in the Consolidated Balance Sheets of $16 million, net of related income taxes. The adoption of the New Revenue Standard also impacted the timing of recognition of certain fees charged to our customers in our consumer markets; however, the adoption has not had, and we do not expect it to have, a material impact on the overall timing or amount of revenue recognition.

The primary impacts of the New Revenue Standard on our operating results relate to how we account for sales incentive costs. Historically, we charged sales incentives to expense as incurred, except for incentives related to the consumer business in our Hughes segment, which were initially deferred and subsequently amortized over the related service agreement term. Under the New Revenue Standard, we continue to defer incentives for our consumer business; however, we now amortize those incentives over the estimated customer life, which includes expected contract renewal periods. In addition, we now defer certain sales incentives related to other businesses in our Hughes segment and amortize those incentives over the related service agreement term. As a result of these changes, we have recognized additional contract acquisition costs on the Consolidated Balance Sheets and the costs generally are recognized as expenses over a longer period of time in the Consolidated Statements of Operations. The adoption of the New Revenue Standard by an unconsolidated entity had a similar impact on our investment in the unconsolidated entity, which we account for using the equity method.

Additionally, on January 1, 2018, we prospectively adopted the applicable requirements of the New Investment Standard. The New Investment Standard substantially revises standards for the recognition, measurement and presentation of financial instruments, including requiring all equity investments, except for investments in consolidated subsidiaries and investments accounted for using the equity method, to be measured at fair value with changes in the fair value recognized through earnings. The New Investment Standard permits an entity to elect to measure an equity security without a readily determinable fair value at its cost, adjusted for changes resulting from impairments and observable price changes in orderly transactions for identical or similar securities of the same issuer. It also amends certain disclosure requirements associated with equity investments and the fair value of financial instruments. Upon adoption of the New Investment Standard on January 1, 2018, we recorded a $0.4 million charge to *Accumulated earnings* to include net unrealized losses on our marketable equity securities then designated as available for sale, which previously were recorded in *Accumulated other comprehensive loss* in the Consolidated Balance Sheets. For our equity investments without a readily determinable fair value that were previously accounted for using the cost method, we have elected to measure such securities at cost, adjusted for impairments and observable price changes. We expect our future net income or loss to be more volatile as a result of these changes in accounting for our investments in equity securities that were previously accounted for as available-for-sale or using the cost method.

Our adoption of these standards impacted the referenced line items on the Statement of Operations and Statements of Comprehensive Income (Loss) as follows:

	For the year ended December 31, 2018			
		Adjustments Due to the		
	As Reported	New Revenue Standard	New Investment Standard	Balances If We Had Not Adopted the New Standards
Statement of Operations:				
Revenue:				
Services and other revenue	$ 1,561,426	$ 2,323	$ —	$ 1,563,749
Total revenue	1,766,836	2,323	—	1,769,159
Costs and expenses:				
Cost of sales - services and other (exclusive of depreciation and amortization)	559,838	2,738	—	562,576
Selling, general and administrative expenses	397,994	8,520	—	406,514
Total costs and expenses	1,588,854	11,258	—	1,600,112
Operating income (loss)	177,982	(8,935)	—	169,047
Other income (expense):				
Interest expense, net of amounts capitalized	(231,169)	539	—	(230,630)
Gains (losses) on investments, net	187	—	(800)	(613)
Total other income (expense), net	(171,447)	539	(800)	(171,708)
Income (loss) from continuing operations before income taxes	6,535	(8,396)	(800)	(2,661)
Income tax benefit (provision), net	(18,615)	2,139	—	(16,476)
Net income (loss) from continuing operations	(12,080)	(6,257)	(800)	(19,137)
Net income (loss)	97,343	(6,257)	(800)	90,286
Net income (loss) attributable to HSS	95,501	(6,257)	(800)	88,444
Statement of Comprehensive Income (Loss):				
Net income (loss)	97,343	(6,257)	(800)	90,286
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on available-for-sale securities	(665)	—	(28)	(693)
Other-than-temporary impairment loss on available-for-sale securities	—	—	828	828
Total other comprehensive income (loss), net of tax	(32,774)	—	800	(31,974)
Comprehensive income (loss)	64,569	(6,257)	—	58,312
Comprehensive income (loss) attributable to HSS	64,116	(6,257)	—	57,859

Recently Issued Accounting Pronouncements Not Yet Adopted

Credit Losses

In June 2016, the FASB issued ASU No. 2016-13*, Measurement of Credit Losses on Financial Instruments*, which introduces a new approach to estimate credit losses on certain types of financial instruments based on expected losses instead of incurred losses. It also modifies the impairment model for available-for-sale debt securities and provides a simplified accounting model for purchased financial assets with credit deterioration since their origination. ASU No. 2016-13 is effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years. Early adoption is permitted. We are currently assessing the impact of adopting this new accounting standard on these Consolidated Financial Statements and related disclosures.

NOTE 3. REVENUE RECOGNITION

Information About Contract Balances

The following is a summary for our contract balances:

	As of	
	December 31, 2019	December 31, 2018
Trade accounts receivable and contract assets, net:		
Sales and services	$ 152,632	$ 154,415
Leasing	4,016	7,990
Total trade accounts receivable	156,648	162,405
Contract assets	63,649	55,295
Allowance for doubtful accounts	(23,777)	(16,604)
Total trade accounts receivable and contract assets, net	$ 196,520	$ 201,096
Contract liabilities:		
Current	$ 101,060	$ 72,249
Non-current	10,572	10,133
Total contract liabilities	$ 111,632	$ 82,382

For the years ended December 31, 2019 and December 31, 2018, we recognized revenue of $65.4 million and $52.0 million, respectively, that were previously included in the contract liability balances as of December 31, 2018 and December 31, 2017, respectively.

A summary of our allowance for doubtful accounts activity is as follows:

	Balance at Beginning of Year	Bad Debt Expense	Deductions	Balance at End of Year
For the years ended:				
December 31, 2019	$ 16,604	$ 30,027	$ (22,854)	$ 23,777
December 31, 2018	12,027	24,984	(20,407)	16,604
December 31, 2017	12,752	9,551	(10,276)	12,027

Contract Acquisition Costs

Unamortized contract acquisition costs totaled $113.6 million and $104.0 million as of December 31, 2019 and 2018, respectively, and related amortization expense totaled $96.1 million and $83.0 million for the years ended December 31, 2019 and 2018, respectively.

Transaction Price Allocated to Remaining Performance Obligations

As of December 31, 2019, the remaining performance obligations for our customer contracts with original expected durations of more than one year was $857.7 million. We expect to recognize 47.0% of our remaining performance obligations of these contracts as revenue in the next twelve months. This amount excludes agreements with consumer customers in our Hughes segment, our leasing arrangements and agreements with certain customers under which collectibility of all amounts due through the term of contracts is uncertain.

Disaggregation of Revenue

Geographic Information

The following is our revenue from customer contracts disaggregated by primary geographic market and by segment:

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
North America	$ 1,527,823	$ 16,257	$ 2,143	$ 1,546,223
South and Central America	125,458	—	—	125,458
All other	199,461	—	19,019	218,480
Total revenue	$ 1,852,742	$ 16,257	$ 21,162	$ 1,890,161
For the year ended December 31, 2018				
North America	$ 1,444,628	$ 27,231	$ 4,555	$ 1,476,414
South and Central America	101,632	—	—	101,632
All other	170,268	—	18,522	188,790
Total revenue	$ 1,716,528	$ 27,231	$ 23,077	$ 1,766,836
For the year ended December 31, 2017				
North America	$ 1,204,750	$ 30,417	$ 4,030	$ 1,239,197
South and Central America	90,000	—	—	90,000
All other	183,168	—	2,677	185,845
Total revenue	$ 1,477,918	$ 30,417	$ 6,707	$ 1,515,042

Nature of Products and Services

The following is our revenue disaggregated by the nature of products and services and by segment:

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
Services and other revenue:				
Services	$ 1,535,966	$ 10,464	$ 878	$ 1,547,308
Lease revenue	50,073	5,793	20,284	76,150
Total services and other revenue	1,586,039	16,257	21,162	1,623,458
Equipment revenue:				
Equipment	115,052	—	—	115,052
Design, development and construction services	145,646	—	—	145,646
Lease revenue	6,005	—	—	6,005
Total equipment revenue	266,703	—	—	266,703
Total revenue	$ 1,852,742	$ 16,257	$ 21,162	$ 1,890,161
For the year ended December 31, 2018				
Services and other revenue:				
Services	$ 1,313,059	$ 21,044	$ 1,351	$ 1,335,454
Lease revenue	198,059	6,187	21,726	225,972
Total services and other revenue	1,511,118	27,231	23,077	1,561,426
Equipment revenue:				
Equipment	119,657	—	—	119,657
Design, development and construction services	85,753	—	—	85,753
Total equipment revenue	205,410	—	—	205,410
Total revenue	$ 1,716,528	$ 27,231	$ 23,077	$ 1,766,836

Lease Revenue

The following is our lease revenue by type of lease:

	For the year ended December 31, 2019
Sales-type lease revenue:	
Revenue at lease commencement	$ 6,005
Interest income	784
Total sales-type lease revenue	6,789
Operating lease revenue	75,366
Total lease revenue	$ 82,155

Substantially all of our net investment in sales-type leases consisted of lease receivables totaling $6.5 million as of December 31, 2019.

The following table presents future operating lease payments to be received as of December 31, 2019:

		Amounts
Year ending December 31,		
2020	$	36,560
2021		33,545
2022		31,666
2023		30,551
2024		28,444
After 2024		123,844
Total lease payments	$	284,610

Property and equipment, net and *Depreciation and amortization* included the following amounts for assets subject to operating leases:

	As of December 31, 2019						For the year ended December 31, 2019	
	Cost		Accumulated Depreciation		Net		Depreciation Expense	
Customer premises equipment	$	1,458,298	$	(1,074,968)	$	383,330	$	197,870
Satellites		104,620		(31,360)		73,260		7,495
Total	$	1,562,918	$	(1,106,328)	$	456,590	$	205,365

NOTE 4. LESSEE ACCOUNTING

The Consolidated Balance Sheets include the following amounts for right-of-use assets and lease liabilities as of December 31, 2019:

		Amounts
Right-of-use assets:		
Operating	$	113,399
Finance		325,826
Total right-of-use assets	$	439,225
Lease liabilities:		
Current:		
Operating	$	14,112
Finance		486
Total current		14,598
Non-current:		
Operating		96,879
Finance		565
Total non-current		97,444
Total lease liabilities	$	112,042

As of December 31, 2019, we have prepaid our obligations regarding most of our finance right-of-use assets. Finance lease assets are reported net of accumulated amortization of $57.3 million as of December 31, 2019.

The following are the components of lease cost and weighted average lease terms and discount rates for operating and finance leases:

	For the year ended December 31, 2019
Lease cost:	
Operating lease cost	$ 21,226
Finance lease cost:	
Amortization of right-of-use assets	26,489
Interest on lease liabilities	173
Total finance lease cost	26,662
Short-term lease cost	434
Variable lease cost	9,585
Total lease cost	$ 57,907

	As of December 31, 2019
Lease term and discount rate:	
Weighted average remaining lease term:	
Finance leases	2.1 years
Operating leases	10.4 years
Weighted average discount rate:	
Finance leases	11.9%
Operating leases	6.1%

The following table details cash flows from operating and finance leases:

	For the year ended December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 19,654
Operating cash flows from finance leases	173
Financing cash flows from finance leases	654

We obtained right-of-use assets in exchange for lease liabilities of $8.5 million upon commencement of operating leases during the year ended December 31, 2019.

The following table presents future minimum lease payments of our lease liabilities as of December 31, 2019:

	Operating Leases	Finance Leases	Total
Year ending December 31,			
2020	$ 19,907	$ 629	$ 20,536
2021	17,594	487	18,081
2022	15,379	96	15,475
2023	14,369	—	14,369
2024	13,286	—	13,286
After 2024	71,147	—	71,147
Total future minimum lease payments	151,682	1,212	152,894
Less: Interest	(40,691)	(161)	(40,852)
Total lease liabilities	$ 110,991	$ 1,051	$ 112,042

NOTE 5. DISCONTINUED OPERATIONS

BSS Business

The following table presents the financial results of our discontinued operations of the BSS Business:

	For the years ended December 31,		
	2019	2018	2017
Revenue:			
Services and other revenue - DISH Network	$ 195,942	$ 305,229	$ 337,079
Services and other revenue - other	17,714	25,598	24,748
Total revenue	213,656	330,827	361,827
Costs and expenses:			
Cost of services and other	28,033	40,375	62,573
Selling, general and administrative expenses	6,903	159	43
Depreciation and amortization	85,926	124,564	126,380
Total costs and expenses	120,862	165,098	188,996
Operating income (loss)	92,794	165,729	172,831
Other income (expense):			
Interest expense	(17,365)	(28,552)	(32,312)
Total other income (expense), net	(17,365)	(28,552)	(32,312)
Income (loss) from discontinued operations before income taxes	75,429	137,177	140,519
Income tax benefit (provision), net	(18,890)	(27,754)	164,436
Net income (loss) from discontinued operations	$ 56,539	$ 109,423	$ 304,955

The following table presents the aggregate carrying amounts of assets and liabilities of our discontinued operations of the BSS Business as of December 31, 2018. No assets or liabilities attributable to our discontinued operations were held by us as of December 31, 2019.

	As of December 31, 2018
Assets	
Prepaids and deposits	$ 3,483
Current assets of discontinued operations	3,483
Property and equipment, net	660,270
Regulatory authorizations, net	65,615
Other non-current assets, net	16,576
Non-current assets of discontinued operations	742,461
Total assets of discontinued operations	$ 745,944
Liabilities:	
Current portion of finance lease obligations	$ 39,995
Accrued interest	1,572
Accrued expenses and other current liabilities	7,488
Current liabilities of discontinued operations	49,055
Finance lease obligations	187,002
Deferred tax liabilities, net	132,787
Other non-current liabilities	29,493
Non-current liabilities of discontinued operations	349,282
Total liabilities of discontinued operations	$ 398,337

Significant supplemental cash flow information and adjustments to reconcile net income to net cash flow from operating activities for discontinued operations of the BSS business are below:

	For the years ended December 31,		
	2019	2018	2017
Operating activities:			
Net income (loss) from discontinued operations	$ 56,539	$ 109,423	$ 304,955
Depreciation and amortization	85,926	124,564	126,380
Investing activities:			
Expenditures for property and equipment	510	175	699
Financing activities:			
Payment of finance lease obligations	27,203	35,886	32,177
Payment of in-orbit incentive obligations	3,887	4,329	4,727

Terminated or Transferred Related Party Agreements

Effective September 10, 2019, the following agreements were terminated or transferred to DISH Network as part of the BSS Transaction. We have no further obligations and have neither earned additional revenue nor incurred additional expense, as applicable, under or in connection with these agreements after the consummation of the BSS Transaction.

DBS Transponder Lease. EchoStar leased satellite capacity from us on eight DBS transponders on the QuetzSat-1 satellite through November 2021, after which EchoStar had certain options to renew the agreement on a year-to year basis through the end of life of the QuetzSat-1 satellite.

EchoStar XXIII Launch Facilitation and Operational Control Agreement. As part of applying for the launch license for the EchoStar XXIII satellite through the UK Space Agency, we and a subsidiary of EchoStar, EchoStar Operating L.L.C. ("EOC"), entered into an agreement in March 2016 to transfer to us EOC's launch service contracts for the EchoStar XXIII satellite and to grant us certain rights to control its in-orbit operations. EOC retained ownership of the satellite and agreed to make additional payments to us for amounts that we were required to pay under the launch service contract. In 2016, we recorded additions to *Other non-current assets, net* and corresponding increases in *Additional paid-in capital* in our Consolidated Balance Sheet to reflect EOC's cumulative payments under the launch service contract prior to the transfer date and to reflect EOC's funding of additional cash payments to the launch service provider. The EchoStar XXIII satellite was successfully launched in March 2017. We recorded decreases in *Other non-current assets, net* and *Additional paid-in capital* of $62.0 million, representing the carrying amount of the launch service contract at the time of launch to reflect the consumption of the contract's economic benefits by EOC.

Satellite Capacity Leased to DISH Network. We entered into certain agreements to lease satellite capacity pursuant to which we provided satellite services to DISH Network on certain satellites, as listed below, owned or leased by us. The fees for the services provided under these agreements depended, among other things, upon the orbital location of the applicable satellite, the number of transponders that provided services on the applicable satellite and the length of the service arrangements.

EchoStar VII, EchoStar X, EchoStar XI and EchoStar XIV. In March 2014, we began leasing certain satellite capacity to DISH Network on the EchoStar VII satellite, the EchoStar X satellite, the EchoStar XI satellite and the EchoStar XIV satellite.

EchoStar XII. DISH Network leased satellite capacity from us on the EchoStar XII satellite.

EchoStar XVI. In December 2009, we entered into an agreement to lease satellite capacity to DISH Network, pursuant to which DISH Network leased satellite capacity from us on the EchoStar XVI satellite beginning in January 2013.

Nimiq 5 Agreement. In September 2009, we entered into an agreement with Telesat Canada to lease satellite capacity from Telesat Canada on all 32 direct broadcast satellite ("DBS") transponders on the Nimiq 5 satellite at the 72.7 degree west longitude orbital location (the "Telesat Transponder Agreement"). In September 2009, we entered into an agreement with DISH Network, pursuant to which DISH Network leased satellite capacity from us on all 32 of the DBS transponders covered by the Telesat Transponder Agreement (the "DISH Nimiq 5 Agreement"). Under the terms of the DISH Nimiq 5 Agreement, DISH Network made certain monthly payments to us that commenced in September 2009, when the Nimiq 5 satellite was placed into service.

QuetzSat-1 Agreement. In November 2008, we entered into an agreement to lease satellite capacity from SES Latin America, which provided, among other things, for the provision by SES Latin America to us of leased satellite capacity on 32 DBS transponders on the QuetzSat-1 satellite. Concurrently, in 2008, we entered into an agreement pursuant to which DISH Network leased from us satellite capacity on 24 of the DBS transponders on the QuetzSat-1 satellite. The QuetzSat-1 satellite was launched in September 2011 and was placed into service in November 2011 at the 67.1 degree west longitude orbital location. In January 2013, the QuetzSat-1 satellite was moved to the 77 degree west longitude orbital location. In February 2013, we and DISH Network entered into an agreement pursuant to which we leased back from DISH Network certain satellite capacity on five DBS transponders on the QuetzSat-1 satellite.

TT&C Agreement. Effective January 2012, we entered into a TT&C agreement pursuant to which we provided TT&C services to DISH Network, which we subsequently amended (the “2012 TT&C Agreement”). The fees for services provided under the 2012 TT&C Agreement were calculated at either: (i) a fixed fee or (ii) cost plus a fixed margin, which varied depending on the nature of the services provided.

Real Estate Lease. Prior to the Share Exchange, a subsidiary of EchoStar leased to DISH Network certain space at 530 EchoStar Drive, Cheyenne, Wyoming. In connection with the Share Exchange, EchoStar transferred ownership of a portion of this property to DISH Network and contributed a portion to us and we and DISH Network amended this agreement to, among other things, provide for a continued lease to DISH Network of the portion of the property we retained (the “Cheyenne Data Center”). The rent on a per square foot basis for the lease was comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the lease, and DISH Network was responsible for its portion of the taxes, insurance, utilities and maintenance of the premises. In connection with the BSS Transaction, we transferred the Cheyenne Data Center to DISH Network. This lease does not qualify for discontinued operations treatment, and therefore the revenue from it has not been treated as discontinued operations.

NOTE 6. BUSINESS COMBINATIONS

In November 2019, we consummated the Yahsat Brazil JV Transaction. The combined business provides broadband internet services and enterprise solutions in Brazil using the Telesat T19V satellite, the Eutelsat 65W satellite and Yahsat’s Al Yah 3 satellite. The results of operations related to the business we acquired in the Yahsat Brazil JV Transaction have been included in these Consolidated Financial Statements from the date of acquisition. For the year ended December 31, 2019, we incurred $1.6 million of costs associated with the closing of the Yahsat Brazil JV Transaction.

All assets and liabilities acquired from Yahsat in the Yahsat Brazil JV Transaction have been recorded at fair value. The following table summarizes the preliminary allocations of purchase price:

	Amounts
Assets:	
Cash and cash equivalents	$ 7,858
Other current assets	7,106
Property and equipment	88,358
Regulatory authorization	4,498
Goodwill	2,128
Other long-term assets	1,502
Total assets	$ 111,450
Liabilities:	
Accounts payable and accrued liabilities	$ 6,516
Other current liabilities	2,159
Total liabilities	$ 8,675
Total purchase price [1]	$ 102,775

(1) Based on the value determined for the equity ownership interest issued by our Brazilian subsidiary as consideration for the business acquired by us in the Yahsat Brazil JV Transaction.

The preliminary valuation of assets we acquired and liabilities we assumed in the Yahsat Brazil JV Transaction were derived using primarily unobservable Level 3 inputs, which require significant management judgment and estimation, and resulted in identifiable assets as follows:

	Amounts
Satellite payload	$ 50,738
Regulatory authorization	4,498
Total	$ 55,236

The satellite payload asset and regulatory authorization were valued using an income approach and will be being amortized over seven and 11 years, respectively.

We recognized goodwill in connection with the Yahsat Brazil JV Transaction of $2.1 million, including a currency translation adjustment of $0.7 million. The goodwill is attributable to expected synergies, the projected long-term business growth in current and new markets and an assembled workforce. This goodwill has been allocated entirely to our Hughes segment.

NOTE 7. OTHER COMPREHENSIVE INCOME (LOSS) AND RELATED TAX EFFECTS

The changes in the balances of *Accumulated other comprehensive income (loss)* by component were as follows:

	Cumulative Foreign Currency Translation Adjustments	Unrealized Gain (Loss) On Available-For-Sale Securities	Other	Accumulated Other Comprehensive Income (Loss)
Balance, December 31, 2017	$ (52,251)	$ (648)	$ 77	$ (52,822)
Cumulative effect of accounting changes	—	433	—	433
Balance, January 1, 2018	(52,251)	(215)	77	(52,389)
Other comprehensive income (loss) before reclassifications	(30,549)	(665)	41	(31,173)
Amounts reclassified to net income (loss)	—	(212)	—	(212)
Other comprehensive income (loss)	(30,549)	(877)	41	(31,385)
Balance, December 31, 2018	(82,800)	(1,092)	118	(83,774)
Other comprehensive income (loss) before reclassifications	(2,146)	1,817	(114)	(443)
Amounts reclassified to net income (loss)	—	(419)	—	(419)
Other comprehensive income (loss)	(2,146)	1,398	(114)	(862)
Balance, December 31, 2019	$ (84,946)	$ 306	$ 4	$ (84,636)

The amounts reclassified to net income (loss) related to unrealized gain (loss) on available-for-sale securities in the table above are included in *Gains (losses) on investments, net* in the Consolidated Statements of Operations.

NOTE 8. MARKETABLE INVESTMENT SECURITIES

Our marketable investment securities portfolio consists of the following debt and equity instruments:

	As of December 31, 2019	As of December 31, 2018
Marketable investment securities:		
Debt securities:		
Corporate bonds	$ 411,706	$ 1,234,017
Other debt securities	240,888	374,106
Total debt securities	652,594	1,608,123
Equity securities	241	1,073
Total marketable investment securities	$ 652,835	$ 1,609,196

Debt Securities

Our corporate bond portfolio includes debt instruments issued by individual corporations, primarily in the industrial and financial services industries. Our other debt securities portfolio includes investments in various debt instruments, including U.S. government bonds and commercial paper.

The following table is a summary of our available-for-sale debt securities:

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
As of December 31, 2019				
Corporate bonds	$ 411,312	$ 395	$ (1)	$ 411,706
Other debt securities	240,887	1	—	240,888
Total available-for-sale debt securities	$ 652,199	$ 396	$ (1)	$ 652,594
As of December 31, 2018				
Corporate bonds	$ 1,235,110	$ 230	$ (1,323)	$ 1,234,017
Other debt securities	374,106	—	—	374,106
Total available-for-sale debt securities	$ 1,609,216	$ 230	$ (1,323)	$ 1,608,123

As of December 31, 2019, we have $652.6 million of available-for-sale debt securities with contractual maturities of one year or less and zero with contractual maturities greater than one year.

Equity Securities

Our marketable equity securities consist primarily of shares of common stock of public companies. Prior to January 1, 2018, we classified our marketable equity securities as available-for-sale or trading securities, depending on our investment strategy for the securities. As of December 31, 2017, our marketable equity securities consisted of available-for-sale securities with a fair value of $1.1 million, reflecting an adjusted cost basis of $1.5 million and unrealized losses of $0.4 million which were recognized as *Unrealized gains (losses) on available-for-sale securities* in the Consolidated Statements of Comprehensive Income (Loss). Substantially all unrealized losses on our available-for-sale securities related to securities that were in a continuous loss position for less than 12 months. We recognized a $3.3 million other-than-temporary impairment during the year ended December 31, 2017 on one of our available-for-sale securities which had experienced a decline in market value as a result of adverse developments.

Effective January 1, 2018, we began accounting for investments in equity securities at their fair value and recognizing unrealized gains and losses in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. *Gains* *(losses) on investments, net* in the Consolidated Statements of Operations related to equity securities that we held were $0.8 million of net loss and de minimis of net loss for the years ended December 31, 2019 and 2018, respectively. The fair value of our equity securities was $0.2 million and $1.1 million as of December 31, 2019 and 2018, respectively.

Sales of Available-for-Sale Securities

Proceeds from sales of our available-for-sale securities were $311.8 million, $50.0 million and $8.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. We recognized as a result of such sales $0.4 million of gains, $0.2 million of gains and zero for the years ended December 31, 2019, 2018 and 2017, respectively.

Fair Value Measurements

Our marketable investment securities are summarized in the table below. Certain of our investments in debt and equity instruments have historically experienced volatility. As of December 31, 2019 and 2018, we did not have any investments that were categorized within Level 3 of the fair value hierarchy.

	As of December 31,					
	2019			2018		
	Level 1	Level 2	Total	Level 1	Level 2	Total
Debt securities:						
Corporate bonds	$ —	$ 411,706	$ 411,706	$ —	$ 1,234,017	$ 1,234,017
Other debt securities	—	240,888	240,888	—	374,106	374,106
Total debt securities	—	652,594	652,594	—	1,608,123	1,608,123
Equity securities	241	—	241	1,073	—	1,073
Total marketable investment securities	$ 241	$ 652,594	$ 652,835	$ 1,073	$ 1,608,123	$ 1,609,196

NOTE 9. INVENTORY

Inventory consists of the following:

	As of December 31,	
	2019	2018
Raw materials	$ 4,240	$ 4,856
Work-in-process	6,979	13,901
Finished goods	68,255	56,622
Total inventory	$ 79,474	$ 75,379

NOTE 10. PROPERTY AND EQUIPMENT

Our property and equipment,net consisted of the following:

	As of December 31,	
	2019	2018
Property and equipment, net:		
Satellites, net	$ 1,127,521	$ 1,209,930
Other property and equipment, net	730,060	711,981
Total property and equipment, net	$ 1,857,581	$ 1,921,911

Satellites

As of December 31, 2019, our operating satellite fleet consisted of eight satellites, five of which are owned and three of which are leased. They are all in geosynchronous orbit, approximately 22,300 miles above the equator. In connection with the BSS Transaction, six of our previously owned satellites and the leases for two of our previously leased satellites were transferred to DISH Network (see *Note 1. Organization and Business Activities* and *Note 5. Discontinued Operations*).

Satellite	Segment	Launch Date	Nominal Degree Orbital Location (Longitude)	Depreciable Life (In Years)
Owned:				
SPACEWAY 3 (1)	Hughes	August 2007	95 W	10
EchoStar XVII	Hughes	July 2012	107 W	15
EchoStar XIX	Hughes	December 2016	97.1 W	15
Al Yah 3 (2)	Hughes	January 2018	20 W	7
EchoStar IX (3)	ESS	August 2003	121 W	12
Finance leases:				
Eutelsat 65 West A	Hughes	March 2016	65 W	15
Telesat T19V	Hughes	July 2018	63 W	15
EchoStar 105/SES-11	ESS	October 2017	105 W	15

(1) Depreciable life represents the remaining useful life as of June 8, 2011, the date EchoStar completed the Hughes Acquisition.
(2) Upon consummation of our joint venture with Yahsat in Brazil in November 2019, we acquired the Brazilian Ka-band payload on this satellite. Depreciable life represents the remaining useful life as of November 2019.
(3) We own the Ka-band and Ku-band payloads on this satellite.

Satellites, net consisted of the following:

	Depreciable Life (In Years)	As of December 31, 2019	As of December 31, 2018
Satellites, net:			
Satellites - owned	7 to 15	$ 1,516,006	$ 1,459,955
Satellites - acquired under finance leases	10 to 15	381,162	385,592
Total satellites		1,897,168	1,845,547
Accumulated depreciation		(769,647)	(635,617)
Total satellites, net		$ 1,127,521	$ 1,209,930

As of December 31, 2019 and 2018, accumulated depreciation included amounts for satellites acquired under finance leases of $56.4 million and $31.5 million, respectively.

Depreciation and amortization expense and capitalized interest associated with our satellites consisted of the following:

	For the years ended December 31, 2019	2018	2017
Depreciation and amortization expense:			
Satellites - owned	$ 110,685	$ 104,967	$ 89,728
Satellites acquired under finance leases	25,755	20,269	9,962
Total depreciation and amortization expense	$ 136,440	$ 125,236	$ 99,690
Capitalized interest	$ 1,019	$ 6,179	$ 22,828

Satellite Anomalies and Impairments

We are not aware of any anomalies with respect to our owned or leased satellites or payloads that have had any significant adverse effect on their remaining useful lives, the commercial operation of the satellites or payloads or our operating results or financial position as of and for the year ended December 31, 2019.

Satellite Insurance

We generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. Pursuant to the terms of the agreements governing certain portions of our indebtedness and our joint venture agreements with Yahsat, we are required, subject to certain limitations on coverage, to maintain only for the SPACEWAY 3 satellite, the EchoStar XVII satellite and the Al Yah 3 Brazilian payload, insurance or other contractual arrangements during the commercial in-orbit service of such satellite. We were previously required to maintain similar insurance or other contractual arrangements for the EchoStar XVI satellite, which we transferred to DISH Network pursuant to the BSS Transaction. Our other satellites and payloads, either in orbit or under construction, are not covered by launch or in-orbit insurance or other contractual arrangements. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Fair Value of In-Orbit Incentives

As of December 31, 2019 and 2018, the fair values of our in-orbit incentive obligations from our continuing operations, based on measurements categorized within Level 2 of the fair value hierarchy, approximated their carrying amounts of $57.0 million and $57.9 million, respectively.

Other Property and Equipment, Net

Other property and equipment, net consisted of the following:

	Depreciable Life (In Years)	As of December 31, 2019	As of December 31, 2018
Other property and equipment, net:			
Land	—	$ 13,328	$ 13,366
Buildings and improvements	1 to 40	73,692	114,153
Furniture, fixtures, equipment and other	1 to 12	783,727	725,924
Customer premises equipment	2 to 4	1,377,914	1,159,977
Construction in progress		50,864	28,087
Total other property and equipment		2,299,525	2,041,507
Accumulated depreciation		(1,569,465)	(1,329,526)
Other property and equipment, net		$ 730,060	$ 711,981

Depreciation expense associated with our other property and equipment consisted of the following:

	For the years ended December 31, 2019	2018	2017
Other property and equipment depreciation expense:			
Buildings and improvements	$ 4,409	$ 9,715	$ 15,249
Furniture, fixtures, equipment and other	89,868	79,500	67,162
Customer premises equipment	194,906	174,749	146,562
Total depreciation expense	$ 289,183	$ 263,964	$ 228,973

NOTE 11. REGULATORY AUTHORIZATIONS

Our regulatory authorizations consisted of the following:

	Finite lived				
	Cost	Accumulated Amortization	Total	Indefinite lived	Total
As of December 31, 2016	$ —	$ —	$ —	$ 406,043	$ 406,043
Impairment	—	—	—	(6,000)	(6,000)
As of December 31, 2017	—	—	—	400,043	400,043
As of December 31, 2018	—	—	—	400,043	400,043
Additions	12,833	—	12,833	(43)	12,790
Amortization expense	—	(161)	(161)	—	(161)
Currency translation adjustment	(309)	—	(309)	—	(309)
As of December 31, 2019	$ 12,524	$ (161)	$ 12,363	$ 400,000	$ 412,363
Weighted average useful life		14 years			

Finite Lived Assets

In November 2019, we were granted an S-band spectrum license for terrestrial rights in Mexico for $7.9 million. The acquired asset is subject to amortization over a period of 15 years.

Upon consummation of our joint venture with Yahsat in Brazil in November 2019, we acquired Ka-band spectrum rights for $4.5 million, which are subject to amortization over a period of 11 years.

Future Amortization

As of December 31, 2019, our estimated future amortization of our regulatory authorizations with finite lives was as follows:

	Amount
For the years ending December 31,	
2020	$ 942
2021	942
2022	942
2023	942
2024	942
Thereafter	7,653
Total	$ 12,363

Indefinite Lived Assets

As of December 31, 2016, our regulatory authorizations with indefinite lives included $6.0 million for contractual rights to utilize certain frequencies, in addition to those specified in the Brazilian license, at the 45 degree west longitude orbital location acquired in 2012. In 2017, we determined that certain actions required to utilize the frequencies had become impractical with the passage of time and, as a result of these circumstances, we determined that the fair value of those contractual rights was de minimis and we recognized a $6.0 million impairment loss.

NOTE 12. OTHER INTANGIBLE ASSETS

Our other intangible assets consisted of the following:

	Customer Relationships	Patents	Trademarks and Licenses	Total
Cost:				
As of December 31, 2016	$ 270,300	$ 51,417	$ 29,700	$ 351,417
As of December 31, 2017	270,300	51,417	29,700	351,417
Write-off	—	(17)	—	(17)
As of December 31, 2018	270,300	51,400	29,700	351,400
As of December 31, 2019	$ 270,300	$ 51,400	$ 29,700	$ 351,400
Accumulated amortization:				
As of December 31, 2016	$ (214,544)	$ (47,848)	$ (8,291)	$ (270,683)
Amortization expense	(17,098)	(3,569)	(1,485)	$ (22,152)
As of December 31, 2017	(231,642)	(51,417)	(9,776)	(292,835)
Amortization expense	(13,145)	—	(1,485)	(14,630)
Write-off	—	17	—	17
As of December 31, 2018	(244,787)	(51,400)	(11,261)	(307,448)
Amortization expense	(13,146)	—	(1,485)	(14,631)
As of December 31, 2019	$ (257,933)	$ (51,400)	$ (12,746)	$ (322,079)
Carrying amount:				
As of December 31, 2016	$ 55,756	$ 3,569	$ 21,409	$ 80,734
As of December 31, 2017	$ 38,658	$ —	$ 19,924	$ 58,582
As of December 31, 2018	$ 25,513	$ —	$ 18,439	$ 43,952
As of December 31, 2019	$ 12,367	$ —	$ 16,954	$ 29,321
Weighted average useful life	8 years	6 years	20 years	

Future Amortization

As of December 31, 2019, our estimated future amortization of other intangible assets was as follows:

	Amount
For the years ending December 31,	
2020	$ 10,981
2021	4,356
2022	1,485
2023	1,485
2024	1,485
Thereafter	9,529
Total	$ 29,321

NOTE 13. OTHER INVESTMENTS

Our *Other investments, net* consisted of the following:

	As of December 31,	
	2019	2018
Other investments, net:		
Equity method investments	$ 102,689	$ 110,931
Other equity investments	7,351	15,438
Total other investments, net	$ 110,040	$ 126,369

Equity Method Investments

Deluxe/EchoStar LLC

We own 50% of Deluxe, a joint venture that we entered into in 2010 to build an advanced digital cinema satellite distribution network targeting delivery to digitally equipped theaters in the U.S. and Canada. We recognized revenue from Deluxe for transponder services and the sale of broadband equipment of $4.4 million, $4.4 million and $4.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019 and 2018, we had trade accounts receivable from Deluxe of $0.6 million and $0.8 million, respectively.

Broadband Connectivity Solutions

In August 2018, we entered into an agreement with Yahsat to establish a new entity, BCS, to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat's Al Yah 2 and Al Yah 3 Ka-band satellites. The transaction was consummated in December 2018 when we invested $100.0 million in cash in exchange for a 20% interest in BCS. Under the terms of the agreement, we may also acquire, for further cash investments, additional ownership interests in BCS in the future provided certain conditions are met. We supply network operations and management services and equipment to BCS. We recognized revenue from BCS for such services and equipment of $9.0 million and $0.7 million for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019 and 2018, we had $5.2 million and $3.4 million, respectively, of trade accounts receivable from BCS.

During the fourth quarter ended December 31, 2019, we began recognizing equity in earnings of certain of our equity method investments on a three-month lag so for the year ended December 31, 2019, we have nine months of activity recorded in these Consolidated Financial Statements. The impact of the change was immaterial to these Consolidated Financial Statements.

As of December 31, 2019, our aggregate investment in our equity method investees exceeded our proportionate share of the net assets of the investees by $19.0 million. This difference is attributable to goodwill recorded at acquisition.

We recorded cash distributions from our investments of $2.7 million, $10.0 million and $19.0 million, respectively, for the years ended December 31, 2019, 2018 and 2017. These cash distributions were determined to be a return on investment and reported in *Net cash flows from operating activities* in the Consolidated Statements of Cash Flows. Additionally, we recorded an additional dividend from our investments of $2.3 million for the year ended December 31, 2019 that was considered a return of investment and reported in *Net cash flows from investing activities* in the Consolidated Statements of Cash Flows. There were no returns of investment during the years ended December 31, 2018 and 2017.

Other Equity Investments

During the year ended December 31, 2019, we recorded a $8.1 million reduction to the carrying amount of one of our investments based on circumstances that indicated the fair value of the investment was less than its carrying amount. There were no similar reductions for the years ended December 31, 2018 or 2017.

NOTE 14. LONG-TERM DEBT AND FINANCE LEASE OBLIGATIONS

The following table summarizes the carrying amounts and fair values of our long-term debt and finance lease obligations:

		As of December 31,			
		2019		2018	
	Effective Interest Rate	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Senior Secured Notes:					
6 1/2% Senior Secured Notes due 2019	6.959%	$ —	$ —	$ 920,836	$ 932,696
5 1/4% Senior Secured Notes due 2026	5.320%	750,000	825,308	750,000	695,865
Senior Unsecured Notes:					
7 5/8% Senior Unsecured Notes due 2021	8.062%	900,000	963,783	900,000	934,902
6 5/8% Senior Unsecured Notes due 2026	6.688%	750,000	833,903	750,000	696,353
Less: Unamortized debt issuance costs		(10,832)	—	(16,757)	—
Subtotal		2,389,168	$ 2,622,994	3,304,079	$ 3,259,816
Finance lease obligations		1,051		1,705	
Total debt and finance lease obligations		2,390,219		3,305,784	
Less: Current portion		(486)		(919,582)	
Long-term debt and finance lease obligations, net of current portion		$ 2,389,733		$ 2,386,202	

2019 Senior Secured Notes and 2021 Senior Unsecured Notes

On June 1, 2011, we issued $1.1 billion aggregate principal amount of 6 1/2% Senior Secured Notes due 2019 (the “2019 Senior Secured Notes”) at an issue price of 100.0%, pursuant to a Secured Indenture dated June 1, 2011. During the years ended December 31, 2019 and 2018, we repurchased $11.5 million and $69.2 million, respectively, of the 2019 Senior Secured Notes in the open market and recorded losses on the repurchase of $0.1 million and $1.0 million, respectively. The 2019 Senior Secured Notes matured on June 15, 2019.

On June 1, 2011, we also issued $900.0 million aggregate principal amount of 7 5/8% Senior Unsecured Notes due 2021 (the “2021 Senior Unsecured Notes,”) at an issue price of 100.0%, pursuant to an Unsecured Indenture dated June 1, 2011 (the “2011 Indenture”). The 2021 Senior Unsecured Notes mature on June 15, 2021. Interest accrues at an annual rate of 7 5/8% and is payable semi-annually in cash, in arrears on June 15 and December 15 of each year.

2026 Senior Secured Notes and 2026 Senior Unsecured Notes

On July 27, 2016, we issued $750.0 million aggregate principal amount of 5 1/4% Senior Secured Notes due 2026 (the “2026 Senior Secured Notes”) at an issue price of 100.0%, pursuant to an indenture dated July 27, 2016 (the “2016 Secured Indenture”) and $750.0 million aggregate principal amount of 6 5/8% Senior Unsecured Notes due 2026 (the “2026 Senior Unsecured Notes” and, together with the 2021 Senior Unsecured Notes, the “Unsecured Notes”) at an issue price of 100.0%, pursuant to an indenture dated July 27, 2016 (together with the 2011 Indenture and the 2016 Secured Indenture, the “Indentures”). The 2021 Senior Unsecured Notes, the 2026 Senior Secured Notes and the 2026 Senior Unsecured Notes are referred to collectively as the “Notes” and individually as a series of the Notes. The 2026 Senior Secured Notes and the 2026 Senior Unsecured Notes (collectively, the “2026 Notes”) mature on August 1, 2026. Interest on the 2026 Senior Secured Notes accrue at an annual rate of 5 1/4% and interest on the 2026 Senior Unsecured Notes accrues at an annual rate of 6 5/8%. Interest on the 2026 Senior Secured Notes is payable semi-annually in cash, in arrears, on February 1 and August 1 of each year.

Additional Information Relating to the Notes

Each series of the Notes is redeemable, in whole or in part, at any time at a redemption price equal to 100.0% of the principal amount thereof plus a “make-whole” premium, as defined in the applicable Indenture, together with accrued and unpaid interest, if any, to the date of redemption. We may also redeem up to 10.0% of the outstanding 2026 Senior Notes per year prior to August 1, 2020 at a redemption price equal to 103.0% of the principal amount thereof plus accrued and unpaid interest as of the date of redemption.

The 2026 Senior Secured Notes are:

- our secured obligations;
- secured by security interests in substantially all of our and certain of our subsidiaries’ existing and future tangible and intangible assets of on a first priority basis, subject to certain exceptions;
- effectively junior to our obligations that are secured by assets that are not part of the collateral that secures the 2026 Senior Secured Notes, in each case, to the extent of the value of the collateral securing such obligations;
- effectively senior to our existing and future unsecured obligations to the extent of the value of the collateral securing the 2026 Senior Secured Notes, after giving effect to permitted liens as provided in the 2016 Secured Indenture;
- senior in right of payment to all of our existing and future obligations that are expressly subordinated to the 2026 Senior Secured Notes;
- structurally junior to any existing and future obligations of any of our subsidiaries that do not guarantee the 2026 Senior Secured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of our subsidiaries, which guarantees rank equally with all of the guarantors’ existing and future unsubordinated indebtedness and effectively senior to such guarantors’ existing and future obligations to the extent of the value of the assets securing the 2026 Senior Secured Notes.

The Unsecured Notes are:

- our unsecured senior obligations;
- ranked equally with all existing and future unsubordinated indebtedness (including as between the 2021 Senior Unsecured Notes and the 2026 Senior Unsecured Notes) and effectively junior to any secured indebtedness up to the value of the assets securing such indebtedness;
- effectively junior to our obligations that are secured to the extent of the value of the collateral securing such obligations;
- senior in right of payment to all our existing and future obligations that are expressly subordinated to the respective Unsecured Notes;
- structurally junior to any existing and future obligations of any of our subsidiaries that do not guarantee the respective Unsecured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of our subsidiaries, which guarantees rank equally with all of the guarantors’ existing and future unsubordinated indebtedness, and effectively junior to any secured indebtedness of the guarantors up to the value of the assets securing such indebtedness.

Subject to certain exceptions, the Indentures contain restrictive covenants that, among other things, impose limitations on our ability and, in certain instances, the ability of certain of our subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on our or their capital stock or repurchase our or their capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;

- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on our or their ability to pay dividends, make distributions, make other payments, or transfer assets.

In the event of a Change of Control, as defined in the respective Indentures, we would be required to make an offer to repurchase all or any part of a holder’s Notes at a purchase price equal to 101.0% of the aggregate principal amount thereof, together with accrued and unpaid interest to the date of repurchase.

The Indentures provide for customary events of default for each series of the Notes, including, among other things, non-payment, breach of the covenants in the applicable Indentures, payment defaults or acceleration of other indebtedness, a failure to pay certain judgments and certain events of bankruptcy, insolvency and reorganization. If any event of default occurs and is continuing with respect to any series of the Notes, the trustee or the holders of at least 25.0% in principal amount of the then outstanding Notes of such series may declare all the Notes of such series to be due and payable immediately, together with any accrued and unpaid interest.

Debt Issuance Costs

For the years ended December 31, 2019, 2018 and 2017, we amortized $5.9 million, $7.9 million and $7.4 million respectively, of debt issuance costs incurred for all debt issuances, which are included in *Interest expense, net of amounts capitalized* in the Consolidated Statements of Operations.

NOTE 15. INCOME TAXES

The components of *Income (loss) from continuing operations before income taxes* in the Consolidated Statements of Operations are as follows:

	For the years ended December 31,		
	2019	**2018**	**2017**
Domestic	$ 68,574	$ 40,385	$ (73,572)
Foreign	(154,395)	(33,850)	(27,596)
Income (loss) from continuing operations before income taxes	$ (85,821)	$ 6,535	$ (101,168)

The components of *Income tax benefit (provision), net*, in the Consolidated Statements of Operations are as follows:

	For the years ended December 31,		
	2019	2018	2017
Current benefit (provision), net:			
Federal	$ (4,525)	$ (914)	$ (638)
State	2,584	5,081	(2,753)
Foreign	(1,415)	(1,894)	(2,020)
Total current benefit (provision), net	(3,356)	2,273	(5,411)
Deferred benefit (provision), net:			
Federal	(1,292)	(3,460)	108,144
State	(10,370)	(17,656)	(3,699)
Foreign	3,423	228	(5,268)
Total deferred benefit (provision), net	(8,239)	(20,888)	99,177
Total income tax benefit (provision), net	$ (11,595)	$ (18,615)	$ 93,766

Our actual tax provisions reconcile to the amounts computed by applying the statutory federal tax rate to *Income (loss) from continuing operations before income taxes* in the Consolidated Statements of Operations as follows:

	For the years ended December 31,		
	2019	2018	2017
Statutory rate	$ 18,023	$ (1,372)	$ 35,409
State income taxes, net of federal provision (benefit)	(4,148)	(13,642)	(3,788)
Permanent differences	(5,888)	(976)	911
Tax credits	5,137	4,935	3,239
Valuation allowance	(35,974)	(11,583)	(17,325)
Enactment of Tax Cuts and Job Act of 2017	—	—	75,617
Rates different than statutory	11,182	4,051	(358)
Other	73	(28)	61
Total income tax benefit (provision), net	$ (11,595)	$ (18,615)	$ 93,766

The components of our deferred tax assets and liabilities are as follows:

	As of December 31,	
	2019	2018
Deferred tax assets:		
Net operating losses, credit and other carryforwards	$ 92,304	$ 103,230
Unrealized losses on investments, net	931	6,997
Accrued expenses	20,079	21,622
Stock-based compensation	5,096	1,613
Other assets	25,952	7,707
Total deferred tax assets	144,362	141,169
Valuation allowance	(102,201)	(49,183)
Deferred tax assets after valuation allowance	42,161	91,986
Deferred tax liabilities:		
Depreciation and amortization	(414,046)	(443,063)
Other liabilities	(1,216)	(1,290)
Total deferred tax liabilities	(415,262)	(444,353)
Total net deferred tax liabilities	$ (373,101)	$ (352,367)
Net deferred tax asset foreign jurisdiction	$ 7,215	$ 3,581
Net deferred tax liability domestic	(380,316)	(355,948)
Total net deferred tax liabilities	$ (373,101)	$ (352,367)

Overall, our net deferred tax assets were offset by a valuation allowance of $102.2 million and $49.2 million as of December 31, 2019 and 2018, respectively. The change in the valuation allowance primarily relates to an increase in the net operating loss carryforwards of certain foreign subsidiaries and a decrease associated with unrealized gains that are capital in nature.

Tax benefits of net operating loss and tax credit carryforwards are evaluated on an ongoing basis, including a review of historical and projected future operating results, the eligible carryforward period, and other circumstances. As of December 31, 2019, we had foreign net operating loss carryforwards of $228.1 million. As of December 31, 2019, we have tax credit carryforwards of $8.4 million and $2.3 million for federal and state income tax purposes, respectively. If not utilized, the federal tax credit carryforwards will begin to expire in 2024 and the state tax credit carryforwards begin to expire in 2020.

As of December 31, 2019, we had undistributed earnings attributable to foreign subsidiaries for which no provision for U.S. income taxes or foreign withholding taxes has been made because it is expected that such earnings will be reinvested outside the U.S. indefinitely. It is not practicable to determine the amount of the unrecognized deferred tax liability at this time. However, due to the one-time transition tax on the deemed repatriation of post-1986 undistributed foreign subsidiary earnings, the majority of previously unremitted earnings have now been subjected to U.S. federal income tax. As of December 31, 2019 and 2018, we had net deferred tax assets related to our foreign subsidiaries of $7.2 million and $3.6 million , respectively, which were recorded in *Other non-current assets, net* in the Consolidated Balance Sheets.

Accounting for the U.S. Tax Cuts and Jobs Act

The Tax Cuts and Jobs Act of 2017 (the “2017 Tax Act”) was enacted in December 2017 and has significantly impacted our effective tax rate and the tax benefit calculated for the year ended December 31, 2017. For the year ended December 31, 2017, we recorded a benefit of $75.6 million to reflect the change in the value of our deferred tax assets and liabilities resulting from the change in the federal corporate tax rate from 35% to 21%. For the year ended December

31, 2018, we recorded an additional tax benefit of $0.8 million and did not record any valuation allowances on foreign tax credit carryforwards. We account for the effects, if any, of the global intangible low-taxed income provisions (“GILTI”) of the 2017 Tax Act as incurred. We did not record a tax provision related to the tax on deemed mandatory repatriation of our unrepatriated foreign earnings for the year ended December 31, 2017.

Accounting for Uncertainty in Income Taxes

In addition to filing U.S. federal income tax returns with EchoStar, we file income tax returns in all states that impose an income tax. As of December 31, 2019, we are not currently under a U.S. federal income tax examination. However, the IRS could perform tax examinations on years as early as tax year 2008. We are also subject to frequent state income tax audits and have open state examinations on years as early as 2008. We also file income tax returns in the United Kingdom, Brazil, India and a number of other foreign jurisdictions. We generally are open to income tax examination in these foreign jurisdictions for taxable years beginning in 2003. As of December 31, 2019, we are currently being audited by the Indian tax authorities for fiscal years 2003 through 2012. We have no other on-going significant income tax examinations in process in our foreign jurisdictions.

The reconciliation of the beginning and ending amount of unrecognized income tax benefits is as follows:

	For the years ended December 31,		
	2019	2018	2017
Unrecognized tax benefit balance as of beginning of period:	$ 7,866	$ 7,950	$ 7,057
Additions based on tax positions related to the current year	—	572	656
Additions based on tax positions related to prior years	—	—	237
Reductions based on tax positions related to prior years	—	(656)	—
Balance as of end of period	$ 7,866	$ 7,866	$ 7,950

As of December 31, 2019 and 2018, we had $7.9 million and $7.9 million, respectively, of unrecognized income tax benefits, all of which, if recognized, would affect our effective tax rate. We do not believe that the total amount of unrecognized income tax benefits will significantly increase or decrease within the next twelve months due to the lapse of statute of limitations or settlement with tax authorities.

For the years ended December 31, 2019, 2018 and 2017, our income tax provision included an insignificant amount of interest and penalties.

NOTE 16. EMPLOYEE BENEFIT PLANS

Employee Stock Purchase Plan

EchoStar has an employee stock purchase plan (the “ESPP”), under which it is authorized to issue 5.0 million shares of EchoStar’s Class A common stock. As of December 31, 2019, EchoStar had approximately 2.2 million shares of Class A common stock which remain available for issuance under the ESPP. Generally, all full-time employees who have been employed by EchoStar or its subsidiaries for at least one calendar quarter are eligible to participate in the ESPP. Employee stock purchases are made through payroll deductions. Under the terms of the ESPP, each employee’s deductions are limited so that the maximum they may purchase under the ESPP is $25,000 in fair value of Class A common stock per year. Stock purchases are made on the last business day of each calendar quarter at 85.0% of the closing price of EchoStar’s Class A common stock on that date. For the years ended December 31, 2019, 2018 and 2017, employee purchases of EchoStar’s Class A common stock through the ESPP totaled approximately 280,000 shares, 235,000 shares and 169,000 shares, respectively.

401(k) Employee Savings Plans

Under the EchoStar 401(k) Plan ("the Plan"), eligible employees are entitled to contribute up to 75.0% of their eligible compensation, on a pre-tax and/or after-tax basis, subject to the maximum contribution limit provided by the Internal Revenue Code of 1986, as amended (the "Code"). All employee contributions to the Plan are immediately vested. EchoStar matches 50 cents on the dollar for the first 6.0% of each employee's salary contributions to the Plan for a total of 3.0% match on a pre-tax basis up to a maximum of $7,500 annually. EchoStar's match is calculated each pay period there is an employee contribution. In addition, EchoStar may make an annual discretionary contribution to the Plan to be made in cash or EchoStar's stock. EchoStar's contributions under the Plan vest at 20.0% per year and are 100.0% vested after an eligible employee has completed five years of employment. Forfeitures of unvested participant balances may be used to fund matching and discretionary contributions.

During the years ended December 31, 2019, 2018 and 2017, we recognized matching contributions, net of forfeitures, of $5.1 million, $5.0 million and $5.1 million, respectively, and EchoStar made discretionary contributions to our employees of shares of its Class A common stock, net of forfeitures, with a fair value of $6.7 million, $7.6 million and $6.7 million, respectively.

NOTE 17. COMMITMENTS AND CONTINGENCIES

Commitments

The following table summarizes our contractual obligations from our continuing operations as of December 31, 2019:

	Payments Due in the Year Ending December 31,						
	Total	2020	2021	2022	2023	2024	Thereafter
Long-term debt	$ 2,400,000	$ —	$ 900,000	$ —	$ —	$ —	$ 1,500,000
Finance lease obligations	1,212	629	487	96	—	—	—
Interest on long-term debt	726,377	157,688	123,375	89,063	89,063	89,063	178,125
Satellite-related obligations	256,869	124,334	24,078	11,365	11,241	11,969	73,882
Operating lease obligations	151,682	19,907	17,594	15,379	14,369	13,286	71,147
Total	$ 3,536,140	$ 302,558	$ 1,065,534	$ 115,903	$ 114,673	$ 114,318	$ 1,823,154

The table above does not include amounts related to deferred tax liabilities, unrecognized tax positions and certain other amounts recorded in our non-current liabilities as the timing of any payments is uncertain. The table also excludes long-term deferred revenue and other long-term liabilities that do not require future cash payments. Additionally, our satellite-related obligations primarily include payments pursuant to agreements for payments pursuant to regulatory authorizations, non-lease costs associated with our finance lease satellites, in-orbit incentives relating to certain satellites and commitments for satellite service arrangements. We incurred satellite-related expenses of $53.2 million, $74.8 million and $91.6 million for the years ended December 31, 2019, 2018 and 2017, respectively.

In certain circumstances, the dates on which we are obligated to pay our contractual obligations could change.

Contingencies

Patents and Intellectual Property

Many entities, including some of our competitors, have, or may have in the future, patents and other intellectual property rights that cover or affect products or services directly or indirectly related to those that we offer. We may not be aware of all patents and other intellectual property rights that our products and services may potentially infringe. Damages in patent infringement cases can be substantial, and in certain circumstances can be tripled. Further, we cannot estimate the extent to which we may be required in the future to obtain licenses with respect to intellectual property rights held by others and the availability and cost of any such licenses. Various parties have asserted patent and other intellectual property rights with respect to our products and services. We cannot be certain that these parties do not own the rights they claim, that these rights are not valid or that our products and services do not infringe on these rights. Further, we cannot be certain that we would be able to obtain licenses from these parties on commercially reasonable terms or, if we were unable to obtain such licenses, that we would be able to redesign our products and services to avoid infringement.

Separation Agreement, Share Exchange and BSS Transaction

In connection with EchoStar’s spin-off from DISH in 2008 (the “Spin-off”), EchoStar entered into a separation agreement with DISH Network that provides, among other things, for the division of certain liabilities, including liabilities resulting from litigation. Under the terms of the separation agreement, EchoStar assumed certain liabilities that relate to its and our business, including certain designated liabilities for acts or omissions that occurred prior to the Spin-off. Certain specific provisions govern intellectual property related claims under which EchoStar will generally only be liable for its and its subsidiaries’ acts or omissions following the Spin-off and DISH Network will indemnify EchoStar for any liabilities or damages resulting from intellectual property claims relating to the period prior to the Spin-off as well as DISH Network’s acts or omissions following the Spin-off. Additionally, in connection with the Share Exchange and BSS Transaction, EchoStar and certain of its and our subsidiaries entered into the Share Exchange Agreement and the Master Transaction Agreement, respectively, and other agreements which provide, among other things, for the division of certain liabilities, including liabilities relating to taxes, intellectual property and employees and liabilities resulting from litigation and the assumption of certain liabilities that relate to the transferred businesses and assets. These agreements also contain additional indemnification provisions between EchoStar and us and DISH Network for, in the case of the Share Exchange, certain pre-existing liabilities and legal proceedings and, in the case of the BSS Transaction, certain losses with respect to breaches of certain representations and covenants and certain liabilities.

Litigation

We are involved in a number of legal proceedings concerning matters arising in connection with the conduct of our business activities. Many of these proceedings are at preliminary stages and/or seek an indeterminate amount of damages. We regularly evaluate the status of the legal proceedings in which we are involved to assess whether a loss is probable and to determine if accruals are appropriate. We record an accrual for litigation and other loss contingencies when we determine that a loss is probable and the amount of the loss can be reasonably estimated. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of possible loss or range of loss can be made. There can be no assurance that legal proceedings against us will be resolved in amounts that will not differ from the amounts of our recorded accruals. Legal fees and other costs of defending legal proceedings are charged to expense as incurred.

For certain proceedings, management is unable to predict with any degree of certainty the outcome or provide a meaningful estimate of the possible loss or range of possible loss because, among other reasons: (i) the proceedings are in various stages; (ii) damages have not been sought or specified; (iii) damages are unsupported, indeterminate and/or exaggerated in management’s opinion; (iv) there is uncertainty as to the outcome of pending trials, appeals, motions or other proceedings; (v) there are significant factual issues to be resolved; and/or (vi) there are novel legal issues or unsettled legal theories to be presented or a large number of parties are involved (as with many patent-related cases). Except as described below, however, management does not believe, based on currently available information, that the outcomes of these proceedings will have a material effect on our financial condition, operating results or cash flows, though there is no assurance that the resolution and outcomes of these proceedings, individually or in the aggregate, will not be material to our financial condition, operating results or cash flows for any particular period, depending, in part, upon the operating results for such period.

We intend to vigorously defend the proceedings against us. In the event that a court, tribunal, other body or jury ultimately rules against us, we may be subject to adverse consequences, including, without limitation, substantial damages, which may include treble damages, fines, penalties, compensatory damages and/or other equitable or injunctive relief that could require us to materially modify our business operations or certain products or services that we offer to our consumers.

Elbit. On January 23, 2015, Elbit Systems Land and C4I LTD and Elbit Systems of America Ltd. (together referred to as “Elbit”) filed a complaint against our subsidiary Hughes Network Systems, L.L.C. (“HNS”), as well as against Black Elk Energy Offshore Operations, LLC, Bluetide Communications, Inc. and Helm Hotels Group, in the U.S. District Court for the Eastern District of Texas, alleging infringement of U.S. Patent Nos. 6,240,073 (the “073 patent”) and 7,245,874 (“874 patent”). The 073 patent is entitled “Reverse Link for a Satellite Communication Network” and the 874 patent is entitled “Infrastructure for Telephony Network.” Elbit alleges that the 073 patent is infringed by broadband satellite systems that practice the Internet Protocol Over Satellite standard. Elbit alleges that the 874 patent is infringed by the manufacture and sale of broadband satellite systems that provide cellular backhaul service via connections to E1 or T1 interfaces at cellular backhaul base stations. On April 2, 2015, Elbit filed an amended complaint removing Helm Hotels Group as a defendant, but making similar allegations against a new defendant, Country Home Investments, Inc.
On November 3 and 4, 2015 and January 22, 2016, the defendants filed petitions before the United States Patent and Trademark Office (“USPTO”) challenging the validity of the patents in suit, which the USPTO subsequently declined to institute. On April 13, 2016, the defendants answered Elbit’s complaint. At Elbit’s request, on June 26, 2017, the court dismissed Elbit’s claims of infringement against all parties other than HNS. Trial commenced on July 31, 2017. On August 7, 2017, the jury returned a verdict that the 073 patent was valid and infringed, and awarded Elbit $21.1 million. The jury also found that such infringement of the 073 patent was not willful and that the 874 patent was not infringed. On March 30, 2018, the court ruled on post-trial motions, upholding the jury’s findings and awarding Elbit attorneys’ fees in an amount that has not yet been specified. Elbit initially requested an award of $13.9 million of attorneys’ fees. On April 27, 2018, HNS filed a notice of appeal to the U.S. Court of Appeals for the Federal Circuit. Oral argument was held on May 8, 2019. On June 25, 2019, the Federal Circuit issued an Opinion and Order affirming the court’s judgment and holding that it did not yet have jurisdiction to review the court’s decision to award attorney’s fees. On August 8, 2019, HNS filed a combined petition for panel rehearing or rehearing en banc with the Federal Circuit, which was denied on September 10, 2019. In an order dated September 18, 2019, the District Court questioned the attorneys’ fees calculations proposed by both parties and asked for further briefing, which the parties submitted on October 25, 2019. As a result of the Federal Circuit’s rulings, as of September 30, 2019, we recorded an accrual of $33.7 million. In December 2019, we entered into a comprehensive settlement agreement with Elbit pursuant to which we paid a total of $33.0 million in satisfaction of all amounts relating to these matters and all open proceedings, including appeals, were dismissed with prejudice.

Shareholder Litigation. On July 2, 2019, the City of Hallandale Beach Police Officers’ and Firefighters’ Personnel Retirement Trust, purporting to sue on behalf of a class of EchoStar’s stockholders, filed a complaint in the District Court of Clark County, Nevada against EchoStar’s directors, Charles W. Ergen, R. Stanton Dodge, Anthony M. Federico, Pradman P. Kaul, C. Michael Schroeder, Jeffrey R. Tarr, William D. Wade, and Michael T. Dugan; our officer, David J. Rayner; EchoStar ; HSS; our former subsidiary BSS Corp.; and DISH and its subsidiary Merger Sub. On September 5, 2019, the defendants filed motions to dismiss. On October 11, 2019, the plaintiffs filed an amended complaint removing Messrs. Dodge, Federico, Kaul, Schroeder, Tarr and Wade as defendants. The amended complaint alleges that Mr. Ergen, as our controlling stockholder, breached fiduciary duties to EchoStar’s minority stockholders by structuring the BSS Transaction with inadequate consideration and improperly influencing our and EchoStar’s boards of directors to approve the BSS Transaction. The amended complaint also alleges that the other defendants aided and abetted such alleged breaches. The plaintiffs seek equitable and monetary relief, including the issuance of additional DISH Common Stock, and other costs and disbursements, including attorneys’ fees on behalf of the purported class. On November 11, 2019, we and the other defendants filed separate motions to dismiss plaintiff’s amended complaint and during a hearing on January 13, 2020 the court denied these motions. On February 10, 2020, we and the other defendants filed answers to the amended complaint. We intend to vigorously defend this case. We cannot predict its outcome with any degree of certainty.

License Fee Dispute with Government of India, Department of Telecommunications. In 1994, the Government of India promulgated a “National Telecommunications Policy” under which the government liberalized the telecommunications sector and required telecommunications service providers to pay fixed license fees. Pursuant to this policy, our subsidiary Hughes Communications India Private Limited (“HCIPL”), formerly known as Hughes Escorts Communications Limited, obtained a license to operate a data network over satellite using VSAT systems. In 1999, HCIPL’s license was amended pursuant to a new government policy that eliminated the fixed license fees and instead required each telecommunications service provider to pay license fees based on its adjusted gross revenue (“AGR”). In March 2005, the Indian Department of Telecommunications (“DOT”) notified HCIPL that, based on its review of HCIPL’s audited accounts and AGR statements, HCIPL must pay additional license fees, interest on such fees and penalties and interest on the penalties. HCIPL responded that the DOT had improperly calculated its AGR by including revenue from licensed and unlicensed activities. The DOT rejected this explanation and in 2006, HCIPL filed a petition with an administrative tribunal (the “Tribunal”), challenging the DOT’s calculation of its AGR. The DOT also issued license fee assessments to other telecommunications service providers and a number of similar petitions were filed by several other such providers with the Tribunal. These petitions were amended, consolidated, remanded and re-appealed several times. On April 23, 2015, the Tribunal issued a judgment affirming the DOT’s calculation of AGR for the telecommunications service providers but reversing the DOT’s imposition of interest, penalties and interest on such penalties as excessive. Over subsequent years, the DOT and HCIPL and other telecommunications service providers, respectively, filed several appeals of the Tribunal’s ruling. On October 24, 2019, the Supreme Court of India (“Supreme Court”) issued an order (the “Order”) affirming the license fee assessments imposed by the DOT, including its imposition of interest, penalties and interest on the penalties, but without indicating the amount HCPIL is required to pay the DOT, and ordering payment by January 23, 2020. On November 23, 2019, we and other telecommunication service providers filed a petition asking the Supreme Court to reconsider its decision. The petition was denied on January 20, 2020. On January 22, 2020, we and other telecommunication service providers filed an application requesting that the Supreme Court modify the Order to permit the DOT to calculate the final amount due and extend HCPIL’s and the other telecommunication service providers’ payment deadline. On February 14, 2020, the Supreme Court denied this application and directed us and the other telecommunication service providers to explain why the Supreme Court should not initiate contempt proceedings for failure to pay the amounts due. The Supreme Court further ordered the parties to appear on March 17, 2020. To date, the DOT has issued HCIPL written assessments totaling $28.4 million, comprised of $4.0 million for additional license fees, $4.1 million for penalties and $20.3 million for interest and interest on penalties. It is possible that the DOT’s assessments may be modified depending on the methodology it uses to calculate interest over the period in question. As a result of the Order and the Supreme Court’s February 14th decision and using the DOT’s current methodology as reflected in the assessments we have received, we have recorded an accrual of $80.2 million as of December 31, 2019, comprised of $4.0 million for additional license fees, $4.1 million for penalties and $72.1 million for interest and interest on penalties. We had recorded an accrual of $1.3 million as of December 31, 2018. Any eventual payments made with respect to the ultimate outcome of this matter may be different from our accrual and such differences could be significant.

Other. In addition to the above actions, we are subject to various other legal proceedings and claims, which arise in the ordinary course of business. As part of our ongoing operations, we are subject to various inspections, audits, inquiries, investigations and similar actions by third parties, as well as by governmental/regulatory authorities responsible for enforcing the laws and regulations to which we may be subject. Further, under the federal False Claims Act, private parties have the right to bring qui tam, or “whistleblower,” suits against companies that submit false claims for payments to, or improperly retain overpayments from, the federal government. Some states have adopted similar state whistleblower and false claims provisions. In addition, we from time to time receive inquiries from federal, state and foreign agencies regarding compliance with various laws and regulations.

In our opinion, the amount of ultimate liability with respect to any of these other actions is unlikely to materially affect our financial position, results of operations or cash flows, though the resolutions and outcomes, individually or in the aggregate, could be material to our financial position, operating results or cash flows for any particular period, depending, in part, upon the operating results for such period.

We also indemnify our directors, officers and employees for certain liabilities that might arise from the performance of their responsibilities for us. Additionally, in the normal course of its business, we enter into contracts pursuant to which we may make a variety of representations and warranties and indemnify the counterparty for certain losses. Our possible exposure under these arrangements cannot be reasonably estimated as this involves the resolution of claims made, or future claims that may be made, against us or our officers, directors or employees, the outcomes of which are unknown and not currently predictable or estimable.

NOTE 18. SEGMENT REPORTING

Operating segments are business components of an enterprise for which separate financial information is available and regularly evaluated by our chief operating decision maker ("CODM"), who is our Chief Executive Officer. We operate in two business segments, Hughes and ESS, as described in *Note 1. Organization and Business Activities*.

The primary measure of segment profitability that is reported regularly to our CODM is earnings before interest, taxes, depreciation and amortization and net income (loss) attributable to non-controlling interests, or EBITDA. Total assets by segment have not been reported herein because the information is not provided to our CODM on a regular basis.

The following table presents revenue, EBITDA and capital expenditures for each of our operating segments. Capital expenditures are net of refunds and other receipts related to property and equipment.

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
External revenue	$ 1,852,742	$ 15,131	$ 22,288	$ 1,890,161
Intersegment revenue	—	1,126	(1,126)	—
Total revenue	$ 1,852,742	$ 16,257	$ 21,162	$ 1,890,161
EBITDA	$ 625,660	$ 6,994	$ (27,855)	$ 604,799
Capital expenditures	$ 308,781	$ —	$ —	$ 308,781
For the year ended December 31, 2018				
External revenue	$ 1,716,169	$ 27,009	$ 23,658	$ 1,766,836
Intersegment revenue	359	222	(581)	—
Total revenue	$ 1,716,528	$ 27,231	$ 23,077	$ 1,766,836
EBITDA	$ 601,319	$ 17,764	$ (15,473)	$ 603,610
Capital expenditures	$ 390,108	$ (76,757)	$ 15	$ 313,366
For the year ended December 31, 2017				
External revenue	$ 1,476,131	$ 30,405	$ 8,506	$ 1,515,042
Intersegment revenue	1,787	12	(1,799)	—
Total revenue	$ 1,477,918	$ 30,417	$ 6,707	$ 1,515,042
EBITDA	$ 475,222	$ 16,074	$ (42,415)	$ 448,881
Capital expenditures	$ 376,502	$ 20,026	$ —	$ 396,528

The following table reconciles total consolidated EBITDA to reported *Income (loss) from continuing operations before income taxes* in the Consolidated Statements of Operations:

	For the Years Ended December 31,		
	2019	2018	2017
EBITDA	$ 604,799	$ 603,610	$ 448,881
Interest income	57,730	59,104	31,952
Interest expense, net of amounts capitalized	(272,218)	(231,169)	(213,166)
Depreciation and amortization	(464,797)	(426,852)	(370,418)
Net income (loss) attributable to non-controlling interests	(11,335)	1,842	1,583
Income (loss) from continuing operations before income taxes	$ (85,821)	$ 6,535	$ (101,168)

Geographic Information

The following table summarizes total long-lived assets attributed to the North America, South and Central America and other foreign locations:

	As of December 31,	
	2019	2018
Long-lived assets:		
North America	$ 2,419,750	$ 2,585,421
South and Central America	310,172	192,860
All other	76,296	91,798
Total long-lived assets	$ 2,806,218	$ 2,870,079

NOTE 19. QUARTERLY FINANCIAL DATA (UNAUDITED)

Our quarterly results of operations are summarized as follows:

	For the Three Months Ended			
	December 31	September 30	June 30	March 31
Year Ended December 31, 2019				
Total revenue	$ 500,600	473,121	$ 461,241	$ 455,199
Operating income (loss)	45,088	45,433	13,962	46,469
Net income (loss)	(62,828)	(2,690)	1,609	23,032
Net income (loss) from continuing operations attributable to HSS	(51,658)	(14,275)	(19,650)	(498)
Net income (loss) attributable to HSS	(52,852)	107	977	22,226
Year Ended December 31, 2018				
Total revenue	$ 455,113	$ 457,650	$ 439,667	$ 414,406
Operating income (loss)	34,089	57,956	52,331	33,606
Net income (loss)	7,349	28,920	40,693	20,381
Net income (loss) from continuing operations attributable to HSS	(12,513)	1,688	7,697	(10,794)
Net income (loss) attributable to HSS	6,799	28,470	40,231	20,001

As the result of an immaterial adjustment recorded in the third quarter of 2019, amounts may not be comparable to amounts previously reported.

NOTE 20. RELATED PARTY TRANSACTIONS - ECHOSTAR

We and EchoStar, including EchoStar's other subsidiaries, have agreed that we shall each have the right, but not the obligation, to receive from the other certain shared corporate services, including among other things: treasury, tax, accounting and reporting, risk management, cybersecurity, legal, internal audit, human resources, and information technology. These shared corporate services are generally provided at cost. Effective March 2017, and as a result of the Share Exchange, we implemented a new methodology for determining the cost of these shared corporate services. We and EchoStar, including EchoStar's other subsidiaries, may each terminate a particular shared corporate service for any reason upon at least 30 days' notice. We recorded net expenses for shared corporate services received from EchoStar and it other subsidiaries of $2.1 million, $16.2 million and $22.2 million for the years ended December 31, 2019, 2018 and 2017, respectively.

We also reimburse EchoStar and its other subsidiaries from time to time for amounts paid by EchoStar and its other subsidiaries for costs and expenses attributable to us, and EchoStar and its other subsidiaries similarly reimburse us from time to time for amounts paid by us for costs and expenses attributable to EchoStar and its other subsidiaries. We report net payments under these arrangements in *Advances from affiliates, net* within current assets and we report net receipts under these arrangements in *Advances from affiliates, net* within current liabilities in our Consolidated Balance Sheets. No repayment schedule for these net advances has been determined.

In addition, we occupy certain office space in buildings owned or leased by EchoStar and its other subsidiaries and pay a portion of the taxes, insurance, utilities and maintenance of the premises in accordance with the percentage of the space we occupy.

EchoStar and certain of its other subsidiaries have also provided cash advances to certain of our foreign subsidiaries to fund certain expenditures pursuant to loan agreements that mature in 2021 and 2022. Advances under these agreements bear interest at annual rates ranging from one to three percent, subject to periodic adjustment based on the one-year U.S. LIBOR rate. We report amounts payable under these agreements in *Advances from affiliates, net* within noncurrent liabilities in our Consolidated Balance Sheets.

BSS Transaction. Pursuant to the pre-closing restructuring contemplated by the Master Transaction Agreement, and as part of the BSS Transaction, we and our subsidiaries transferred certain of the BSS Business to BSS Corp., and we distributed all of the shares of BSS Corp. to EchoStar as a dividend. See *Note 1. Organization and Business Activities* for further information.

Contribution of EchoStar XIX Satellite. On February 1, 2017, EchoStar contributed the EchoStar XIX satellite and assigned the related construction contract with the satellite manufacturer to us. We recorded a $349.0 million increase in Additional paid-in capital, reflecting EchoStar's $514.0 million carrying amount of the satellite, including capitalized interest that was previously charged to expense in our consolidated financial statements, less related deferred taxes of $165.0 million.

EchoStar XXI Launch Facilitation and Operational Control Agreement. As part of applying for the launch license for the EchoStar XXI satellite through the UK Space Agency, we and a subsidiary of EchoStar, EOC, entered into an agreement in June 2015 to transfer to us EOC's launch service contract for the EchoStar XXI satellite and to grant us certain rights to control its in-orbit operations. EOC retained ownership of the satellite and agreed to make additional payments to us for amounts that we are required to pay under the launch service contract. In 2016, we recorded additions to *Other non-current assets, net* and corresponding increases in *Additional paid-in capital* in our Consolidated Balance Sheet to reflect EOC's cumulative payments under the launch service contract prior to the transfer date and to reflect EOC's funding of additional cash payments to the launch service provider. The EchoStar XXI satellite was successfully launched in June 2017. We recorded decreases in *Other non-current assets, net* and *Additional paid-in capital* of $83.0 million, representing the carrying amount of the launch service contract at the time of launch to reflect the consumption of the contract's economic benefits by EOC.

Share Exchange Agreement. Prior to consummation of the Share Exchange, EchoStar was required to complete steps necessary for the transferring of certain assets and liabilities to DISH and certain of its subsidiaries. As part of these steps, subsidiaries of EchoStar that, prior to the consummation of the Share Exchange, owned EchoStar's business of providing online video delivery and satellite video delivery for broadcasters and pay-TV operators, including satellite uplinking/downlinking, transmission services, signal processing and conditional access management, and other services and related assets and liabilities were contributed to one of our subsidiaries in consideration for additional shares of HSS' common stock that were then issued to a subsidiary of EchoStar.

EchoStar Mobile Limited Service Agreements. We provide services and lease equipment to support the business of EchoStar Mobile Limited, a subsidiary of EchoStar that is licensed by the European Union and its member states ("EU") to provide mobile satellite services and complementary ground component services covering the entire EU using S-band spectrum. Generally, the amounts EchoStar's other subsidiaries pay for these services are based on cost plus a fixed margin. We have converted the receivables for certain of these services into loans, bearing an annual interest rate of 5.0%, that mature in 2023. We recorded revenue in *Services and other revenue* of $19.5 million, $19.2 million and $2.7 million for the years ended December 31, 2019, 2018 and 2017, respectively, related to these services.

Construction Management Services for EchoStar XXIV satellite. In August 2017, a subsidiary of EchoStar entered into a contract with Space Systems Loral, LLC for the design and construction of the EchoStar XXIV satellite, a new, next-generation, high throughput geostationary satellite, with a planned 2021 launch. We provide construction management services to EchoStar's subsidiary for the construction of the EchoStar XXIV satellite. We charged EchoStar's subsidiary and reduced our operating expenses by the costs of such services of $1.5 million, $1.1 million and $0.4 million for the years ended December 31, 2019, 2018 and 2017, respectively.

NOTE 21. RELATED PARTY TRANSACTIONS - DISH NETWORK

Overview

EchoStar and DISH have operated as separate publicly-traded companies since 2008. A substantial majority of the voting power of the shares of each of EchoStar and DISH is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established for the benefit of his family. In addition, prior to the consummation of the Share Exchange in February 2017, DISH Network owned the Tracking Stock, which represented an aggregate 80% economic interest in the residential retail satellite broadband business of our Hughes segment. Following the consummation of the Share Exchange, the Tracking Stock was retired.

In connection with and following the Spin-off, the Share Exchange and the BSS Transaction, EchoStar, we and certain other of EchoStar's subsidiaries and DISH Network entered into certain agreements pursuant to which we, EchoStar and certain of its other subsidiaries, on the one hand, obtain certain products, services and rights from DISH Network, on the other hand; DISH Network, on the one hand, obtains certain products, services and rights from us, EchoStar and certain of its other subsidiaries, on the other hand; and such entities indemnify each other against certain liabilities arising from their respective businesses. Generally, the amounts we and/or EchoStar and its other subsidiaries or DISH Network pay for products and services provided under the agreements are based on cost plus a fixed margin (unless noted differently below), which varies depending on the nature of the products and services provided.

We and/or EchoStar and its other subsidiaries may also enter into additional agreements with DISH Network in the future.

The following is a summary of the transactions and the terms of the underlying principal agreements that have had or may have an impact on our consolidated financial condition and results of operations.

Services and Other Revenue — DISH Network

A summary of our *Services and other revenue - DISH Network* follows:

	For the years ended December 31,		
	2019	2018	2017
Services and other revenue - DISH Network	$ 40,014	$ 60,926	$ 96,750

A summary of the related trade accounts receivable follows:

	As of December 31,	
	2019	2018
Trade accounts receivable - DISH Network	$ 8,876	$ 13,550

Satellite Capacity Leased to DISH Network. We have entered into an agreement and have previously entered into a now terminated agreement to lease satellite capacity pursuant to which we have provided satellite services to DISH Network on certain satellites owned or leased by us. The fees for the services provided under these agreements depend upon, among other things, the orbital location of the applicable satellite, the number of transponders that are providing services on the applicable satellite and the length of the service arrangements. The terms of these agreements are set forth below:

EchoStar IX. Effective January 2008, DISH Network began leasing satellite capacity from us on the EchoStar IX satellite. Subject to availability, DISH Network generally has the right to continue leasing satellite capacity from us on the EchoStar IX satellite on a month-to-month basis.

103 Degree Orbital Location/SES-3. In May 2012, we entered into a spectrum development agreement (the “103 Spectrum Development Agreement”) with Ciel Satellite Holdings Inc. (“Ciel”) to develop certain spectrum rights at the 103 degree west longitude orbital location (the “103 Spectrum Rights”). In June 2013, we and DISH Network entered into a spectrum development agreement (the “DISH 103 Spectrum Development Agreement”) pursuant to which DISH Network may use and develop the 103 Spectrum Rights. Effective in March 2018, DISH Network exercised its right to terminate the DISH 103 Spectrum Development Agreement and we exercised our right to terminate the 103 Spectrum Development Agreement.

In connection with the 103 Spectrum Development Agreement, in May 2012, we also entered into a ten-year agreement with Ciel pursuant to which we leased certain satellite capacity from Ciel on the SES-3 satellite at the 103 degree west longitude orbital location (the “Ciel 103 Agreement”). In June 2013, we and DISH Network entered into an agreement pursuant to which DISH Network leased certain satellite capacity from us on the SES-3 satellite (the “DISH 103 Agreement”). Under the terms of the DISH 103 Agreement, DISH Network made certain monthly payments to us through the service term. Effective in March 2018, DISH Network exercised its right to terminate the DISH 103 Agreement and we exercised our right to terminate the Ciel 103 Agreement.

Telesat Obligation Agreement. We transferred the Telesat Transponder Agreement to DISH Network as part of the BSS Transaction; however, we retained certain obligations related to DISH Network’s performance under that agreement. In September 2019, we and DISH Network entered into an agreement whereby DISH Network compensates us for retaining such obligations.

TerreStar Agreement. In March 2012, DISH Network completed its acquisition of substantially all the assets of TerreStar Networks Inc. (“TerreStar”). Prior to DISH Network’s acquisition of substantially all the assets of TerreStar and EchoStar’s completion of the Hughes Acquisition, TerreStar and HNS entered into various agreements pursuant to which we provide, among other things, warranty, operations and maintenance and hosting services for TerreStar’s ground-based communications equipment. In December 2017, we and DISH Network amended these agreements, effective as of January 1, 2018, to reduce certain pricing terms through December 31, 2023 and to modify certain termination provisions. DISH Network generally has the right to continue to receive warranty services from us for our products on a month-to-month basis unless terminated by DISH Network upon at least 21 days ’ written notice to us. DISH Network generally has the right to continue to receive operations and maintenance services from us on a quarter-to-quarter basis unless operations and maintenance services are terminated by DISH Network upon at least 90 days’ written notice to us. The provision of hosting services will continue until May 2022. In addition, DISH Network generally may terminate any and all services for convenience subject to providing us with prior notice and/or payment of termination charges.

Hughes Broadband Distribution Agreement. Effective October 2012, we and DISH Network, entered into a distribution agreement (the "Distribution Agreement") pursuant to which DISH Network has the right, but not the obligation, to market, sell and distribute our HughesNet service. DISH Network pays us a monthly per subscriber wholesale service fee for the HughesNet service based upon a subscriber's service level and based upon certain volume subscription thresholds. The Distribution Agreement also provides that DISH Network has the right, but not the obligation, to purchase certain broadband equipment from us to support the sale of the HughesNet service. The Distribution Agreement had an initial term of five years with automatic renewal for successive one year terms unless terminated by either party with a written notice at least 180 days' before the expiration of the then-current term. In February 2014, we and DISH Network entered into an amendment to the Distribution Agreement which, among other things, extended the initial term of the Distribution Agreement until March 2024. Upon expiration or termination of the Distribution Agreement, we and DISH Network will continue to provide our HughesNet service to the then-current DISH Network subscribers pursuant to the terms and conditions of the Distribution Agreement.

DBSD North America Agreement. In March 2012, DISH Network completed its acquisition of all of the equity of reorganized DBSD North America, Inc. ("DBSD North America"). Prior to DISH Network's acquisition of DBSD North America and EchoStar's completion of the Hughes Acquisition, DBSD North America and HNS entered into various agreements pursuant to which we provide, among other things, warranty, operations and maintenance and hosting services of DBSD North America's gateway and ground-based communications equipment. In December 2017, we and DBSD North America amended these agreements, effective as of January 1, 2018, to reduce certain pricing terms through December 31, 2023 and to modify certain termination provisions. DBSD North America has the right to continue to receive operations and maintenance services from us on a quarter-to-quarter basis, unless terminated by DBSD North America upon at least 120 days' written notice to us. In February 2019, we further amended these agreements to provide DBSD North America with the right to continue to receive warranty services from us on a month-to-month basis until December 2023, unless terminated by DBSD North America upon at least 21 days' written notice to us. The provision of hosting services will continue until February 2022 and will automatically renew for an additional five-year period until February 2027 unless terminated by DBSD North America upon at least 180 days' written notice to us. In addition, DBSD North America generally may terminate any and all such services for convenience, subject to providing us with prior notice and/or payment of termination charges.

Hughes Equipment and Services Agreement. In February 2019, we and DISH Network entered into an agreement pursuant to which we will sell to DISH Network our HughesNet Service and HughesNet equipment that has been modified to meet DISH Network's internet-of-things specifications for the transfer of data to DISH Network's network operations centers. This agreement has an initial term of five years expiring February 2024 with automatic renewal for successive one-year terms unless terminated by DISH Network with at least 180 days' written notice to us or by us with at least 365 days' written notice to DISH Network.

Operating Expenses — DISH Network

A summary of our operating expenses - DISH Network follows:

	For the years ended December 31,		
	2019	**2018**	**2017**
Operating expenses - DISH Network	$ 3,684	$ 3,602	$ 3,485

A summary of the related trade accounts payable follows:

	As of December 31,	
	2019	2018
Trade accounts payable - DISH Network	$ 502	$ 752

Amended and Restated Professional Services Agreement. In connection with the Spin-off, EchoStar entered into various agreements with DISH Network including a transition services agreement, satellite procurement agreement and services agreement, all of which expired in January 2010 and were replaced by a professional services agreement (the "Professional Services Agreement"). In January 2010, EchoStar and DISH Network agreed that EchoStar and its subsidiaries shall continue to have the right, but not the obligation, to receive the following services from DISH Network, among others, certain of which were previously provided under a transition services agreement: information technology, travel and event coordination, internal audit, legal, accounting and tax, benefits administration, program acquisition services and other support services. Additionally, EchoStar and DISH Network agreed that DISH Network would continue to have the right, but not the obligation, to engage EchoStar and its subsidiaries to manage the process of procuring new satellite capacity for DISH Network (previously provided under a satellite procurement agreement), receive logistics, procurement and quality assurance services from EchoStar and its subsidiaries (previously provided under a services agreement) and provide other support services. In connection with the consummation of the Share Exchange, EchoStar and DISH amended and restated the Professional Services Agreement to provide that EchoStar and its subsidiaries and DISH Network shall have the right to receive additional services that either EchoStar and its subsidiaries or DISH Network may require as a result of the Share Exchange, including access to antennas owned by DISH Network for our use in performing TT&C services and maintenance and support services for our antennas (collectively, the "TT&C Antennas"). In September 2019, in connection with the BSS Transaction, EchoStar and DISH further amended the Professional Services Agreement (the "Amended and Restated Professional Services Agreement") to provide that EchoStar and its subsidiaries and DISH Network shall have the right to receive additional services that either EchoStar and its subsidiaries or DISH Network may require as a result of the BSS Transaction and to remove our access to and the maintenance and support services for the TT&C Antennas. A portion of these costs and expenses have been allocated to us in the manner described in *Note 20. Related Party Transactions - EchoStar*. The term of the Amended and Restated Professional Services Agreement is through January 2021 and renews automatically for successive one-year periods thereafter, unless the agreement is terminated earlier by either party upon at least 60 days' notice. However, either party may generally terminate the Amended and Restated Professional Services Agreement in part with respect to any particular service it receives for any reason upon at least 30 days' notice, unless the statement of work for particular services states otherwise. Certain services being provided for under the Amended and Restated Professional Services Agreement may survive the termination of the agreement.

Real Estate Lease from DISH Network. Effective March 2017, we entered into an agreement with DISH Network for certain space at 796 East Utah Valley Drive in American Fork, Utah for a period ending in August 2017. We exercised our option to renew this agreement for a five-year period ending in August 2022. We and DISH Network amended this agreement to, among other things, terminate this agreement in March 2019. The rent on a per square foot basis for the lease was comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the lease, and we were responsible for our portion of the taxes, insurance, utilities and maintenance of the premises.

Collocation and Antenna Space Agreements. We and DISH Network have entered into an agreement pursuant to which DISH Network provides us with collocation space in El Paso, Texas. This agreement was for an initial period ending in August 2015, and provides us with renewal options for four consecutive years. Effective August 2015, we exercised our first renewal option for a period ending in August 2018 and in April 2018 we exercised our second renewal option for a period ending in August 2021. In connection with the Share Exchange, effective March 2017, we also entered into certain agreements pursuant to which DISH Network provides collocation and antenna space to EchoStar through February 2022 at the following locations: Cheyenne, Wyoming; Gilbert, Arizona; New Braunfels, Texas; Monee, Illinois; Spokane, Washington; and Englewood, Colorado. In October 2019, we provided a termination notice for our New Braunfels, Texas agreement to be effective May 2020. In August 2017, we and DISH Network also entered into certain other agreements pursuant to which DISH Network provides additional collocation and antenna space to us in Monee, Illinois and Spokane, Washington through August 2022. Generally, we may renew our collocation and antenna space agreements for three-year periods by providing DISH Network with prior written notice no more than 120 days but no less than 90 days prior to the end of the then-current term. We may terminate certain of these agreements with

180 days' prior written notice. The fees for the services provided under these agreements depend on the number of racks located at the location.

In connection with the BSS Transaction, in September 2019, we entered into an agreement pursuant to which DISH Network will provide us with antenna space and power in Cheyenne, Wyoming for a period of five years commencing no later than October 2020, with four three-year renewal terms, with prior written notice no more than 120 days but no less than 90 days prior to the end of the then-current term.

Hughes Broadband Master Services Agreement. In March 2017, we and DISH Network entered into a master service agreement (the "Hughes Broadband MSA") pursuant to which DISH Network, among other things: (i) has the right, but not the obligation, to market, promote and solicit orders and upgrades for our HughesNet service and related equipment and other telecommunication services and (ii) installs HughesNet service equipment with respect to activations generated by DISH Network. Under the Hughes Broadband MSA, we and DISH Network make certain payments to each other relating to sales, upgrades, purchases and installation services. The Hughes Broadband MSA has an initial term of five years through March 2022 with automatic renewal for successive one-year terms. Either party has the ability to terminate the Hughes Broadband MSA, in whole or in part, for any reason upon at least 90 days' notice to the other party. Upon expiration or termination of the Hughes Broadband MSA, we will continue to provide our HughesNet service to subscribers and make certain payments to DISH Network pursuant to the terms and conditions of the Hughes Broadband MSA. We incurred sales incentives and other costs under the Hughes Broadband MSA totaling $17.1 million, $33.2 million and $29.3 million for the years ended December 31, 2019, 2018 and 2017, respectively.

2019 TT&C Agreement. In September 2019, in connection with the BSS Transaction, we and a subsidiary of EchoStar entered into an agreement pursuant to which DISH Network provides TT&C services to us and EchoStar and its other subsidiaries for a period ending in September 2021, with the option for a subsidiary of EchoStar to renew for a one-year period upon written notice at least 90 days prior to the initial expiration (the "2019 TT&C Agreement"). The fees for services provided under the 2019 TT&C Agreement are calculated at either: (i) a fixed fee or (ii) cost plus a fixed margin, which will vary depending on the nature of the services provided. Any party is able to terminate the 2019 TT&C Agreement for any reason upon 12 months' notice.

Other Receivables - DISH Network

Tax Sharing Agreement. Effective December 2007, EchoStar and DISH Network entered into a tax sharing agreement (the "Tax Sharing Agreement") in connection with the Spin-off. This agreement governs EchoStar and DISH and their respective subsidiaries' respective rights, responsibilities and obligations after the Spin-off with respect to taxes for the periods ending on or before the Spin-off. Generally, all pre-Spin-off taxes, including any taxes that are incurred as a result of restructuring activities undertaken to implement the Spin-off, are borne by DISH Network and DISH Network indemnifies EchoStar and its subsidiaries for such taxes. However, DISH Network is not liable for and does not indemnify EchoStar or its subsidiaries for any taxes that are incurred as a result of the Spin-off or certain related transactions failing to qualify as tax-free distributions pursuant to any provision of Section 355 or Section 361 of the Code, because of: (i) a direct or indirect acquisition of any of EchoStar's stock, stock options or assets; (ii) any action that EchoStar or its subsidiaries take or fail to take or (iii) any action that EchoStar or its subsidiaries take that is inconsistent with the information and representations furnished to the IRS in connection with the request for the private letter ruling, or to counsel in connection with any opinion being delivered by counsel with respect to the Spin-off or certain related transactions. In such case, EchoStar and its subsidiaries will be solely liable for, and will indemnify DISH Network for any resulting taxes, as well as any losses, claims and expenses. The Tax Sharing Agreement will terminate after the later of the full period of all applicable statutes of limitations, including extensions, or once all rights and obligations are fully effectuated or performed.

In light of the Tax Sharing Agreement, among other things, and in connection with EchoStar's consolidated federal income tax returns for certain tax years prior to and for the year of the Spin-off, in September 2013, EchoStar and DISH Network agreed upon a supplemental allocation of the tax benefits arising from certain tax items resolved in the course of the IRS's examination of EchoStar's consolidated tax returns. As a result, DISH Network agreed to pay EchoStar an amount of that includes the federal tax benefit DISH received as a result of our operations.

In August 2018, EchoStar and DISH Network amended the Tax Sharing Agreement and the 2013 agreements (the "Tax Sharing Amendment"). Under the Tax Sharing Amendment, DISH Network is required to compensate EchoStar for certain past and future excess California research and development tax credits generated by EchoStar and its subsidiaries and used by DISH Network.

Other Agreements

Master Transaction Agreement. In May 2019, EchoStar and BSS Corp. entered into the Master Transaction Agreement with DISH and Merger Sub with respect to the BSS Transaction. Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) EchoStar and its subsidiaries and we and our subsidiaries transferred the BSS Business to BSS Corp.; (ii) EchoStar completed the Distribution; and (iii) immediately after the Distribution, (1) BSS Corp. became a wholly-owned subsidiary of DISH such that DISH owns and operates the BSS Business and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Common Stock. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. The Master Transaction Agreement contained customary representations and warranties by the parties, including EchoStar's representations relating to the assets, liabilities and financial condition of the BSS Business, and representations by DISH Network relating to its financial condition and liabilities. EchoStar and DISH Network have agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively.

BSS Transaction Intellectual Property and Technology License Agreement. Effective September 2019, in connection with the BSS Transaction, we, EchoStar and DISH Network entered into an intellectual property and technology license agreement (the "BSS IPTLA") pursuant to which we, EchoStar and its other subsidiaries and DISH Network license to each other certain intellectual property and technology. The BSS IPTLA will continue in perpetuity, unless mutually terminated by the parties. Pursuant to the BSS IPTLA, we, EchoStar and its other subsidiaries granted to DISH Network a license to our and their intellectual property and technology for use by DISH Network, among other things, in connection with its continued operation of the BSS Business acquired pursuant to the BSS Transaction, including a limited license to use the "ESS" and "ECHOSTAR SATELLITE SERVICES" trademarks during a transition period. EchoStar retains full ownership of the "ESS" and "ECHOSTAR SATELLITE SERVICES" trademarks. In addition, DISH Network granted a license back to us, EchoStar and its other subsidiaries, among other things, for the continued use of all intellectual property and technology that is used in our, EchoStar and its other subsidiaries' retained businesses but the ownership of which was transferred to DISH Network pursuant to the BSS Transaction.

BSS Transaction Tax Matters Agreement. Effective September 2019, in connection with the BSS Transaction, EchoStar, BSS Corp. and DISH entered into a tax matters agreement. This agreement governs certain rights, responsibilities and obligations of EchoStar and its subsidiaries' with respect to taxes of the BSS Business transferred pursuant to the BSS Transaction. Generally, EchoStar is responsible for all tax returns and tax liabilities for the BSS Business for periods prior to the BSS Transaction and DISH is responsible for all tax returns and tax liabilities for the BSS Business from and after the BSS Transaction.

Both EchoStar and DISH made certain tax-related representations and are subject to various tax-related covenants after the consummation of the BSS Transaction. Both EchoStar and DISH Network have agreed to indemnify each other for certain losses if there is a breach of any the tax representations or violation of any of the tax covenants in the tax matters agreement and that breach or violation results in the failure of the BSS Transaction being treated as a transaction that is tax-free for EchoStar or its stockholders for U.S. federal income tax purposes. In addition, DISH Network has agreed to indemnify EchoStar if the BSS Business is acquired, either directly or indirectly (e.g., via an acquisition of DISH Network), by one or more persons, where either it took an action, or knowingly facilitated, consented to or assisted with an action by its stockholders, that resulted in the failure of the BSS Transaction being treated as a transaction that is tax-free for EchoStar and its stockholders for U.S. federal income tax purposes. This tax matters agreement supplements the Tax Sharing Agreement outlined above and the Share Exchange Tax Matters Agreement outlined below, both of which continue in full force and effect.

BSS Transaction Employee Matters Agreement. Effective September 2019, in connection with the BSS Transaction, EchoStar and DISH Network entered into an employee matters agreement that addressed the transfer of employees from us to DISH Network, including certain benefit and compensation matters and the allocation of responsibility for employee related liabilities relating to current and past employees of the BSS Business. DISH Network assumed employee-related liabilities relating to the BSS Business as part of the BSS Transaction, except that EchoStar is responsible for certain pre-BSS Transaction compensation and benefits for employees who transferred to DISH Network in connection with the BSS Transaction.

Share Exchange Agreement. In January 2017, EchoStar and certain of its and our subsidiaries entered into a share exchange agreement (the “Share Exchange Agreement”) with DISH and certain of its subsidiaries pursuant to which, in February 2017, EchoStar and certain of its and our subsidiaries received all of the shares of the Tracking Stock in exchange for 100% of the equity interests of certain EchoStar subsidiaries that held substantially all of EchoStar’s EchoStar Technologies businesses and certain other assets. Following consummation of the Share Exchange, EchoStar no longer operates the transferred EchoStar Technologies businesses and the Tracking Stock was retired and is no longer outstanding and all agreements, arrangements and policy statements with respect to such Tracking Stock terminated and are of no further effect. Pursuant to the Share Exchange Agreement, EchoStar transferred certain assets, investments in joint ventures, spectrum licenses and real estate properties and DISH Network assumed certain liabilities relating to the transferred assets and businesses. The Share Exchange Agreement contained customary representations and warranties by the parties, including representations by EchoStar related to the transferred assets, assumed liabilities and the financial condition of the transferred businesses. EchoStar and DISH Network also agreed to customary indemnification provisions whereby each party indemnifies the other against certain losses with respect to breaches of representations, warranties or covenants and certain liabilities and if certain actions undertaken by EchoStar or DISH causes the transaction to be taxable to the other party after closing.

Share Exchange Intellectual Property and Technology License Agreement. Effective March 2017, in connection with the Share Exchange, EchoStar and one of its other subsidiaries and DISH Network entered into an intellectual property and technology license agreement (“IPTLA”) pursuant to which we, EchoStar and its other subsidiaries and DISH Network license to each other certain intellectual property and technology. The IPTLA will continue in perpetuity, unless mutually terminated by the parties. Pursuant to the IPTLA, we, EchoStar and its other subsidiaries granted to DISH Network a license to our and their intellectual property and technology for use by DISH Network, among other things, in connection with its continued operation of the businesses acquired pursuant to the Share Exchange, including a limited license to use the “ECHOSTAR” trademark during a transition period. EchoStar retains full ownership of the “ECHOSTAR” trademark. In addition, DISH Network granted a license back to us, EchoStar and its other subsidiaries, among other things, for the continued use of all intellectual property and technology that is used in our, EchoStar and its other subsidiaries’ retained businesses but the ownership of which was transferred to DISH Network pursuant to the Share Exchange.

Share Exchange Tax Matters Agreement. Effective March 2017, in connection with the Share Exchange, EchoStar and DISH entered into a tax matters agreement. This agreement governs certain rights, responsibilities and obligations of EchoStar and its subsidiaries with respect to taxes of the transferred businesses pursuant to the Share Exchange. Generally, EchoStar is responsible for all tax returns and tax liabilities for the transferred businesses and assets for periods prior to the Share Exchange and DISH Network is responsible for all tax returns and tax liabilities for the transferred businesses and assets from and after the Share Exchange. Both EchoStar and DISH Network made certain tax-related representations and are subject to various tax-related covenants after the consummation of the Share Exchange. Both EchoStar and DISH Network have agreed to indemnify each other if there is a breach of any such tax representation or violation of any such tax covenant and that breach or violation results in the Share Exchange not qualifying for tax free treatment for the other party. In addition, DISH Network has agreed to indemnify EchoStar if the transferred businesses are acquired, either directly or indirectly (e.g., via an acquisition of DISH Network), by one or more persons and such acquisition results in the Share Exchange not qualifying for tax free treatment. The tax matters agreement supplements the Tax Sharing Agreement outlined above which continues in full force and effect.

NOTE 22. RELATED PARTY TRANSACTIONS - OTHER

Hughes Systique Corporation (“Hughes Systique”)

We contract with Hughes Systique for software development services. In addition to our approximately 43% ownership in Hughes Systique, Mr. Pradman Kaul, the President of our subsidiary Hughes Communications, Inc.. and a member of EchoStar’s board of directors, and his brother, who is the Chief Executive Officer and President of Hughes Systique, in the aggregate, own approximately 25%, on an undiluted basis, of Hughes Systique’s outstanding shares as of December 31, 2019. Furthermore, Mr. Pradman Kaul serves on the board of directors of Hughes Systique. Hughes Systique is a variable interest entity and we are considered the primary beneficiary of Hughes Systique due to, among other factors, our ability to direct the activities that most significantly impact the economic performance of Hughes

Systique. As a result, we consolidate Hughes Systique's financial statements in these Consolidated Financial Statements.

TerreStar Solutions

DISH Network owns more than 15% of TerreStar Solutions, Inc. ("TSI"). In May 2018, we and TSI entered into an equipment and services agreement pursuant to which we design, manufacture and install upgraded ground communications network equipment for TSI's network and provide, among other things, warranty and support services. We recognized revenue of $12.5 million and $6.0 million for the years ended December 31, 2019 and 2018. As of December 31, 2019 and 2018, we had $2.7 million and $2.3 million trade accounts receivable from TSI.

Global IP

In May 2017, we entered into an agreement with Global-IP Cayman ("Global IP") providing for the sale of certain equipment and services to Global IP. Mr. William David Wade, a member of EchoStar's board of directors, served as a member of the board of directors of Global IP and as an executive advisor to the Chief Executive Officer of Global IP from September 2017 until April 2019 and from September 2017 until December 2019, respectively. In August 2018, we and Global IP amended the agreement to: (i) change certain of the equipment and services to be provided to Global IP, (ii) modify certain payment terms, (iii) provide Global IP an option to use one of our test lab facilities and (iv) effectuate the assignment of the agreement from Global IP to one of its wholly-owned subsidiaries. In February 2019, we terminated the agreement as a result of Global IP's defaults resulting from its failure to make payments to us as required under the terms of the agreement and we reserved our rights and remedies against Global IP under the agreement. We recognized revenue under this agreement of zero, $9.0 million and $0.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019 and 2018, we were owed $7.5 million from Global IP.

Maxar Technologies Inc

Mr. Jeffrey Tarr, who joined EchoStar's board of directors in March 2019, served as a consultant and advisor to Maxar Technologies Inc. and its subsidiaries ("Maxar Tech") through May 2019. We previously entered into agreements with Maxar Tech for the manufacture and certain other services of the EchoStar IX satellite, the EchoStar XVII satellite, the EchoStar XIX satellite, the EchoStar XXI satellite and the EchoStar XXIV satellite and our former EchoStar XI satellite, EchoStar XIV satellite, EchoStar XVI satellite and EchoStar XXIII satellite. Maxar Tech provides us with anomaly support for these satellites once launched pursuant to the terms of the agreements. Maxar Tech also provides a warranty on one of these satellites and may be required to pay us certain amounts should the satellite not operate according to certain performance specifications. Our obligations to pay Maxar Tech under these agreements during the design life of the applicable satellites may be reduced if the applicable satellites do not operate according to certain performance specifications. We incurred aggregate costs payable to Maxar Tech under these agreements of $13.2 million for the year ended December 31, 2019.

AsiaSat

In 2017, we had a contract with AsiaSat Telecommunications Inc. ("AsiaSat") for the use of transponder capacity on one of AsiaSat's satellites. Mr. William David Wade, who joined EchoStar's board of directors in February 2017, served as the Chief Executive Officer of AsiaSat in 2016 and as a senior advisor to the Chief Executive Officer of AsiaSat through March 2017. We incurred expenses payable to AsiaSat under this agreement of $0.1 million for the year ended December 31, 2017.

NOTE 23. Supplemental Guarantor and Non-Guarantor Financial Information

Certain of our wholly-owned subsidiaries (together, the "Guarantor Subsidiaries") have fully and unconditionally guaranteed, on a joint and several basis, the obligations of our Notes. See *Note 14. Long-term Debt and Finance Lease Obligations* for further information on our Notes.

In lieu of separate financial statements of the Guarantor Subsidiaries, accompanying condensed consolidating financial information prepared in accordance with Rule 3-10(f) of Regulation S-X is presented below, including the accompanying condensed balance sheet information, the accompanying condensed statement of operations and comprehensive income (loss) information and the accompanying condensed statement of cash flows information of HSS, the Guarantor Subsidiaries on a combined basis and the non-guarantor subsidiaries of HSS on a combined basis and the eliminations necessary to arrive at the corresponding information of HSS on a consolidated basis.

The indentures governing our Notes contain restrictive covenants that, among other things, impose limitations on our ability and the ability of certain of our subsidiaries to pay dividends or make distributions, incur additional debt, make certain investments, create liens or enter into sale and leaseback transactions, merge or consolidate with another company, transfer and sell assets, enter into transactions with affiliates or allow to exist certain restrictions on the ability to pay dividends, make distributions, make other payments, or transfer assets.

The accompanying condensed consolidating financial information (amounts in thousands) presented below should be read in conjunction with our accompanying condensed consolidated financial statements and notes thereto included herein.

Consolidating Balance Sheet as of December 31, 2019

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Assets					
Cash and cash equivalents	$ 1,057,903	$ 32,338	$ 49,194	$ —	$ 1,139,435
Marketable investment securities	652,594	241	—	—	652,835
Trade accounts receivable and contract assets, net	—	129,722	66,798	—	196,520
Advances to affiliates	93,493	523,116	17,501	(502,218)	131,892
Other current assets	43	79,221	90,458	38	169,760
Total current assets	1,804,033	764,638	223,951	(502,180)	2,290,442
Property and equipment, net	—	1,459,151	398,430	—	1,857,581
Operating lease right-of-use assets	—	89,106	24,293	—	113,399
Goodwill	—	504,173	2,780	—	506,953
Regulatory authorizations, net	—	400,000	12,363	—	412,363
Other intangible assets, net	—	29,321	—	—	29,321
Other investments, net	—	110,040	—	—	110,040
Investment in subsidiaries	2,876,572	282,163	—	(3,158,735)	—
Advances to affiliates, net	700	565,412	17,161	(563,514)	19,759
Other non-current assets, net	9,972	206,781	25,396	(9,972)	232,177
Total assets	$ 4,691,277	$ 4,410,785	$ 704,374	$ (4,234,401)	$ 5,572,035
Liabilities and Shareholders' Equity					
Trade accounts payable	$ —	$ 102,744	$ 18,808	$ —	$ 121,552
Current portion of long-term debt and finance lease obligations	—	—	486	—	486
Advances from affiliates, net	202,994	240,887	69,469	(502,218)	11,132
Contract liabilities	—	96,485	4,575	—	101,060
Accrued expenses and other current liabilities	40,700	73,696	132,365	38	246,799
Total current liabilities	243,694	513,812	225,703	(502,180)	481,029
Long-term debt and finance lease obligations, net of current portion	2,389,168	—	565	—	2,389,733
Deferred tax liabilities, net	—	390,288	—	(9,972)	380,316
Operating lease liabilities	—	77,366	19,513	—	96,879
Advances from affiliates, net	—	488,488	99,006	(563,514)	23,980
Other non-current liabilities	—	65,030	905	—	65,935
Total HSS shareholders' equity	2,058,415	2,875,801	282,934	(3,158,735)	2,058,415
Non-controlling interests	—	—	75,748	—	75,748
Total liabilities and shareholders' equity	$ 4,691,277	$ 4,410,785	$ 704,374	$ (4,234,401)	$ 5,572,035

Consolidating Balance Sheet as of December 31, 2018

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Assets					
Cash and cash equivalents	$ 771,718	$ 46,353	$ 29,752	$ —	$ 847,823
Marketable investment securities	1,608,123	1,073	—	—	1,609,196
Trade accounts receivable and contract assets, net	—	128,831	72,265	—	201,096
Advances to affiliates	109,433	536,600	27,174	(569,657)	103,550
Other current assets	72	94,695	58,460	(561)	152,666
Current assets of discontinued operations	—	3,483	—	—	3,483
Total current assets	2,489,346	811,035	187,651	(570,218)	2,917,814
Property and equipment, net	—	1,620,534	301,377	—	1,921,911
Goodwill	—	504,173	—	—	504,173
Regulatory authorizations, net	—	400,043	—	—	400,043
Other intangible assets, net	—	43,952	—	—	43,952
Other investments, net	—	126,369	—	—	126,369
Investment in subsidiaries	3,362,589	192,370	—	(3,554,959)	—
Advances to affiliates, net	700	86,280	—	(86,980)	—
Deferred tax asset	54,001	—	3,581	(54,001)	3,581
Other non-current assets, net	—	220,099	12,769	—	232,868
Non-current assets of discontinued operations	—	742,461	—	—	742,461
Total assets	$ 5,906,636	$ 4,747,316	$ 505,378	$ (4,266,158)	$ 6,893,172
Liabilities and Shareholders' Equity					
Trade accounts payable	$ —	$ 88,342	$ 16,409	$ —	$ 104,751
Current portion of long-term debt and finance lease obligations	918,916	—	666	—	919,582
Advances from affiliates, net	181,926	282,268	106,331	(569,657)	868
Contract liabilities	—	67,636	4,613	—	72,249
Accrued expenses and other current liabilities	43,410	71,111	43,694	(561)	157,654
Current liabilities of discontinued operations	—	49,055	—	—	49,055
Total current liabilities	1,144,252	558,412	171,713	(570,218)	1,304,159
Long-term debt and finance lease obligations, net of current portion	2,385,164	—	1,038	—	2,386,202
Deferred tax liabilities, net	—	409,116	834	(54,001)	355,949
Advances from affiliates, net	—	—	120,418	(86,980)	33,438
Other non-current liabilities	—	69,168	2,479	—	71,647
Non-current liabilities of discontinued operations	—	349,282	—	—	349,282
Total HSS shareholders' equity	2,377,220	3,361,338	193,621	(3,554,959)	2,377,220
Non-controlling interests	—	—	15,275	—	15,275
Total liabilities and shareholders' equity	$ 5,906,636	$ 4,747,316	$ 505,378	$ (4,266,158)	$ 6,893,172

Consolidating Statement of Operations and Comprehensive Income (Loss) For the Year Ended December 31, 2019

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Revenue:					
Services and other revenue	$ —	$ 1,417,659	$ 242,257	$ (36,458)	$ 1,623,458
Equipment revenue	—	283,792	32,864	(49,953)	266,703
Total revenue	—	1,701,451	275,121	(86,411)	1,890,161
Costs and expenses:					
Cost of sales - services and other (exclusive of depreciation and amortization)	—	438,214	151,493	(34,006)	555,701
Cost of sales - equipment (exclusive of depreciation and amortization)	—	250,700	24,357	(49,954)	225,103
Selling, general and administrative expenses	6,720	375,309	88,291	(2,451)	467,869
Research and development expenses	—	25,082	657	—	25,739
Depreciation and amortization	—	391,464	73,333	—	464,797
Total costs and expenses	6,720	1,480,769	338,131	(86,411)	1,739,209
Operating income (loss)	(6,720)	220,682	(63,010)	—	150,952
Other income (expense):					
Interest income	54,341	4,441	2,798	(3,850)	57,730
Interest expense, net of amounts capitalized	(190,685)	(7,832)	(77,551)	3,850	(272,218)
Gains (losses) on investments, net	455	(8,919)	—	—	(8,464)
Equity in earnings (losses) of unconsolidated affiliates, net	—	(3,333)	—	—	(3,333)
Equity in earnings (losses) of subsidiaries, net	75,047	(135,258)	—	60,211	—
Foreign currency transaction gains (losses), net	—	(344)	(9,511)	—	(9,855)
Other, net	(100)	(351)	(182)	—	(633)
Total other income (expense), net	(60,942)	(151,596)	(84,446)	60,211	(236,773)
Income (loss) from continuing operations before income taxes	(67,662)	69,086	(147,456)	60,211	(85,821)
Income tax benefit (provision), net	38,120	(50,242)	527	—	(11,595)
Net income (loss) from continuing operations	(29,542)	18,844	(146,929)	60,211	(97,416)
Net income (loss) from discontinued operations	—	56,539	—	—	56,539
Net income (loss)	(29,542)	75,383	(146,929)	60,211	(40,877)
Less: Net income (loss) attributable to non-controlling interests	—	—	(11,335)	—	(11,335)
Net income (loss) attributable to HSS	$ (29,542)	$ 75,383	$ (135,594)	$ 60,211	$ (29,542)
Comprehensive income (loss):					
Net income (loss)	$ (29,542)	$ 75,383	$ (146,929)	$ 60,211	$ (40,877)
Other comprehensive income (loss), net of tax:					
Foreign currency translation adjustments	—	—	1,182	—	1,182
Unrealized gains (losses) on available-for-sale securities	1,817	—	—	—	1,817
Other	—	—	(114)	—	(114)
Amounts reclassified to net income (loss):					
Realized gains on available-for-sale securities	(419)	—	—	—	(419)
Equity in other comprehensive income (loss) of subsidiaries, net	(2,260)	(2,260)	—	4,520	—
Total other comprehensive income (loss), net of tax	(862)	(2,260)	1,068	4,520	2,466
Comprehensive income (loss)	(30,404)	73,123	(145,861)	64,731	(38,411)
Less: Comprehensive income (loss) attributable to non-controlling interests	—	—	(8,007)	—	(8,007)
Comprehensive income (loss) attributable to EchoStar Corporation	$ (30,404)	$ 73,123	$ (137,854)	$ 64,731	$ (30,404)

HUGHES SATELLITE SYSTEMS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Consolidating Statement of Operations and Comprehensive Income (Loss) For the Year Ended December 31, 2018

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Revenue:					
Services and other revenue	$ —	$ 1,366,459	$ 232,873	$ (37,906)	$ 1,561,426
Equipment revenue	—	221,996	29,137	(45,723)	205,410
Total revenue	—	1,588,455	262,010	(83,629)	1,766,836
Costs and expenses:					
Cost of sales - services and other (exclusive of depreciation and amortization)	—	447,622	147,952	(35,736)	559,838
Cost of sales - equipment (exclusive of depreciation and amortization)	—	200,620	21,703	(45,723)	176,600
Selling, general and administrative expenses	—	345,221	54,943	(2,170)	397,994
Research and development expenses	—	27,570	—	—	27,570
Depreciation and amortization	—	374,297	52,555	—	426,852
Total costs and expenses	—	1,395,330	277,153	(83,629)	1,588,854
Operating income (loss)	—	193,125	(15,143)	—	177,982
Other income (expense):					
Interest income	56,487	3,806	2,472	(3,661)	59,104
Interest expense, net of amounts capitalized	(229,481)	(866)	(4,483)	3,661	(231,169)
Gains (losses) on investments, net	—	187	—	—	187
Equity in earnings (losses) of unconsolidated affiliates, net	—	4,874	—	—	4,874
Equity in earnings (losses) of subsidiaries, net	224,405	(33,525)	—	(190,880)	—
Foreign currency transaction gains (losses), net	—	(104)	(12,380)	—	(12,484)
Other, net	(970)	9,259	(248)	—	8,041
Total other income (expense), net	50,441	(16,369)	(14,639)	(190,880)	(171,447)
Income (loss) from continuing operations before income taxes	50,441	176,756	(29,782)	(190,880)	6,535
Income tax benefit (provision), net	45,060	(62,230)	(1,445)	—	(18,615)
Net income (loss) from continuing operations	95,501	114,526	(31,227)	(190,880)	(12,080)
Net income (loss) from discontinued operations	—	109,423	—	—	109,423
Net income (loss)	95,501	223,949	(31,227)	(190,880)	97,343
Less: Net income (loss) attributable to non-controlling interests	—	—	1,842	—	1,842
Net income (loss) attributable to HSS	$ 95,501	$ 223,949	$ (33,069)	$ (190,880)	$ 95,501
Comprehensive income (loss):					
Net income (loss)	$ 95,501	$ 223,949	$ (31,227)	$ (190,880)	$ 97,343
Other comprehensive income (loss), net of tax:					
Foreign currency translation adjustments	—	—	(31,938)	—	(31,938)
Unrealized gains (losses) on available-for-sale securities	(665)	—	—	—	(665)
Other	—	—	41	—	41
Amounts reclassified to net income (loss):					
Realized gains on available-for-sale securities	(212)	—	—	—	(212)
Equity in other comprehensive income (loss) of subsidiaries, net	(30,508)	(30,508)	—	61,016	—
Total other comprehensive income (loss), net of tax	(31,385)	(30,508)	(31,897)	61,016	(32,774)
Comprehensive income (loss)	64,116	193,441	(63,124)	(129,864)	64,569
Less: Comprehensive income (loss) attributable to non-controlling interests	—	—	453	—	453
Comprehensive income (loss) attributable to EchoStar Corporation	$ 64,116	$ 193,441	$ (63,577)	$ (129,864)	$ 64,116

Consolidating Statement of Operations and Comprehensive Income (Loss) For the Year Ended December 31, 2017
(In thousands)

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Revenue:					
Services and other revenue	$ —	$ 1,127,177	$ 180,596	$ (32,220)	$ 1,275,553
Equipment revenue	—	255,610	27,205	(43,326)	239,489
Total revenue	—	1,382,787	207,801	(75,546)	1,515,042
Costs and expenses:					
Cost of sales - services and other (exclusive of depreciation and amortization)	—	395,566	131,177	(29,632)	497,111
Cost of sales - equipment (exclusive of depreciation and amortization)	—	218,299	20,318	(43,178)	195,439
Selling, general and administrative expenses	—	293,767	46,517	(2,736)	337,548
Research and development expenses	—	31,745	—	—	31,745
Depreciation and amortization	—	332,103	38,315	—	370,418
Impairment of long-lived assets	—	6,000	—	—	6,000
Total costs and expenses	—	1,277,480	236,327	(75,546)	1,438,261
Operating income (loss)	—	105,307	(28,526)	—	76,781
Other income (expense):					
Interest income	28,146	96,992	1,986	(95,172)	31,952
Interest expense, net of amounts capitalized	(229,415)	(80,543)	1,620	95,172	(213,166)
Gains (losses) on investments, net	—	(1,574)	—	—	(1,574)
Equity in earnings (losses) of unconsolidated affiliates, net	—	7,027	—	—	7,027
Equity in earnings (losses) of subsidiaries, net	471,602	(35,142)	—	(436,460)	—
Foreign currency transaction gains (losses), net	—	(85)	(1,073)	—	(1,158)
Other, net	—	(871)	(159)	—	(1,030)
Total other income (expense), net	270,333	(14,196)	2,374	(436,460)	(177,949)
Income (loss) from continuing operations before income taxes	270,333	91,111	(26,152)	(436,460)	(101,168)
Income tax benefit (provision), net	25,637	75,956	(7,827)	—	93,766
Net income (loss) from continuing operations	295,970	167,067	(33,979)	(436,460)	(7,402)
Net income (loss) from discontinued operations	—	304,955	—	—	304,955
Net income (loss)	295,970	472,022	(33,979)	(436,460)	297,553
Less: Net income (loss) attributable to non-controlling interests	—	—	1,583	—	1,583
Net income (loss) attributable to HSS	$ 295,970	$ 472,022	$ (35,562)	$ (436,460)	$ 295,970
Comprehensive income (loss):					
Net income (loss)	$ 295,970	$ 472,022	$ (33,979)	$ (436,460)	$ 297,553
Other comprehensive income (loss), net of tax:					
Foreign currency translation adjustments	—	—	7,196	—	7,196
Unrealized gains (losses) on available-for-sale securities	(273)	(2,007)	—	—	(2,280)
Other	—	—	92	—	92
Amounts reclassified to net income (loss):					
Other-than-temporary impairment loss on available-for-sale securities	—	3,298	—	—	3,298
Equity in other comprehensive income (loss) of subsidiaries, net	8,170	6,879	—	(15,049)	—
Total other comprehensive income (loss), net of tax	7,897	8,170	7,288	(15,049)	8,306
Comprehensive income (loss)	303,867	480,192	(26,691)	(451,509)	305,859
Less: Comprehensive income (loss) attributable to non-controlling interests	—	—	1,992	—	1,992
Comprehensive income (loss) attributable to EchoStar Corporation	$ 303,867	$ 480,192	$ (28,683)	$ (451,509)	$ 303,867

Consolidating Statement of Cash Flows for the Year Ended December 31, 2019

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Cash flows from operating activities:					
Net income (loss)	$ (29,542)	$ 75,383	$ (146,929)	$ 60,211	$ (40,877)
Adjustments to reconcile net income (loss) to net cash flows from operating activities	(26,693)	569,444	191,941	(60,211)	674,481
Net cash flows from operating activities	(56,235)	644,827	45,012	—	633,604
Cash flows from investing activities:					
Purchases of marketable investment securities	(709,350)	—	—	—	(709,350)
Sales and maturities of marketable investment securities	1,665,269	—	—	—	1,665,269
Investments in unconsolidated affiliates	—	(7)	7,858	—	7,851
Dividend received from unconsolidated affiliate	—	2,284	—	—	2,284
Expenditures for property and equipment	—	(215,000)	(94,291)	—	(309,291)
Expenditures for externally marketed software	—	(29,310)	—	—	(29,310)
Purchases of regulatory authorizations	—	—	(7,850)	—	(7,850)
Investment in subsidiaries	307,424	(75,086)	—	(232,338)	—
Net cash flows from investing activities	1,263,343	(317,119)	(94,283)	(232,338)	619,603
Cash flows from financing activities:					
Repurchase and maturity of the 2019 Senior Secured Notes	(920,923)	—	—	—	(920,923)
Repayment of other long-term debt and finance lease obligations	—	(27,203)	(2,144)	—	(29,347)
Payment of in-orbit incentive obligations	—	(4,430)	—	—	(4,430)
Purchase of non-controlling interest	—	(2,666)	(4,647)	—	(7,313)
Other, net	—	—	1,172	—	1,172
Contribution (distributions) and advances (to) from parent, net	—	(307,424)	75,086	232,338	—
Net cash flows from financing activities	(920,923)	(341,723)	69,467	232,338	(960,841)
Effect of exchange rates on cash and cash equivalents	—	—	(663)	—	(663)
Net increase (decrease) in cash and cash equivalents	286,185	(14,015)	19,533	—	291,703
Cash and cash equivalents, including restricted amounts, beginning of period	771,718	46,353	30,548	—	848,619
Cash and cash equivalents, including restricted amounts, end of period	$ 1,057,903	$ 32,338	$ 50,081	$ —	$ 1,140,322

HUGHES SATELLITE SYSTEMS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Consolidating Statement of Cash Flows for the Year Ended December 31, 2018

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Cash flows from operating activities:					
Net income (loss)	$ 95,501	$ 223,949	$ (31,227)	$ (190,880)	$ 97,343
Adjustments to reconcile net income (loss) to net cash flows from operating activities	(160,236)	536,404	78,312	190,880	645,360
Net cash flows from operating activities	(64,735)	760,353	47,085	—	742,703
Cash flows from investing activities:					
Purchases of marketable investment securities	(2,063,042)	—	—	—	(2,063,042)
Sales and maturities of marketable investment securities	909,996	—	—	—	909,996
Investments in unconsolidated affiliates	—	(100,991)	—	—	(100,991)
Expenditures for property and equipment	—	(304,376)	(86,689)	—	(391,065)
Refunds and other receipts related to property and equipment	—	77,524	—	—	77,524
Expenditures for externally marketed software	—	(31,639)	—	—	(31,639)
Payment for EchoStar XXI launch services	—	—	(7,125)	—	(7,125)
Investment in subsidiaries	305,669	(50,540)	—	(255,129)	—
Net cash flows from investing activities	(847,377)	(410,022)	(93,814)	(255,129)	(1,606,342)
Cash flows from financing activities:					
Repurchase and maturity of the 2019 Senior Secured Notes	(70,173)	—	—	—	(70,173)
Repayment of other long-term debt and finance lease obligations	—	(35,886)	(5,133)	—	(41,019)
Payment of in-orbit incentive obligations	—	(4,796)	—	—	(4,796)
Capital contribution from EchoStar	7,125	—	—	—	7,125
Contribution (distributions) and advances (to) from parent, net	—	(305,669)	50,540	255,129	—
Net cash flows from financing activities	(63,048)	(346,351)	45,407	255,129	(108,863)
Effect of exchange rates on cash and cash equivalents	—	—	(2,233)	—	(2,233)
Net increase (decrease) in cash and cash equivalents	(975,160)	3,980	(3,555)	—	(974,735)
Cash and cash equivalents, including restricted amounts, beginning of period	1,746,878	42,373	34,103	—	1,823,354
Cash and cash equivalents, including restricted amounts, end of period	$ 771,718	$ 46,353	$ 30,548	$ —	$ 848,619

HUGHES SATELLITE SYSTEMS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Consolidating Statement of Cash Flows for the Year Ended December 31, 2017

	HSS	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total
Cash flows from operating activities:					
Net income (loss)	$ 295,970	$ 472,022	$ (33,979)	$ (436,460)	$ 297,553
Adjustments to reconcile net income (loss) to net cash flows from operating activities	(206,014)	(74,310)	43,340	436,460	199,476
Net cash flows from operating activities	89,956	397,712	9,361	—	497,029
Cash flows from investing activities:					
Purchases of marketable investment securities	(535,476)	—	—	—	(535,476)
Sales and maturities of marketable investment securities	259,263	—	—	—	259,263
Expenditures for property and equipment	—	(340,197)	(61,341)	—	(401,538)
Refunds and other receipts related to property and equipment	—	4,311	—	—	4,311
Expenditures for externally marketed software	—	(31,331)	—	—	(31,331)
Investment in subsidiaries	(59,000)	(63,000)	—	122,000	—
Net cash flows from investing activities	(335,213)	(430,217)	(61,341)	122,000	(704,771)
Cash flows from financing activities:					
Repayment of other long-term debt and finance lease obligations	—	(32,177)	(4,886)	—	(37,063)
Payment of in-orbit incentive obligations	—	(5,850)	—	—	(5,850)
Other, net	186	—	850	—	1,036
Contribution (distributions) and advances (to) from parent, net	—	59,000	63,000	(122,000)	—
Net cash flows from financing activities	186	20,973	58,964	(122,000)	(41,877)
Effect of exchange rates on cash and cash equivalents	—	—	1,286	—	1,286
Net increase (decrease) in cash and cash equivalents	(245,071)	(11,532)	8,270	—	(248,333)
Cash and cash equivalents, including restricted amounts, beginning of period	1,991,949	53,905	25,833	—	2,071,687
Cash and cash equivalents, including restricted amounts, end of period	$ 1,746,878	$ 42,373	$ 34,103	$ —	$ 1,823,354

NOTE 24. SUPPLEMENTAL FINANCIAL INFORMATION

Research and Development

The table below summarizes the research and development costs incurred in connection with customers' orders included in cost of sales and other expenses:

	For the years ended December 31,		
	2019	2018	2017
Cost of sales - equipment	$ 24,495	$ 23,422	$ 27,899
Research and development expenses	25,739	27,570	31,745

Advertising Costs

We incurred advertising expense of $88.2 million, $75.8 million and $64.2 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Other Current Assets, Other Non-Current Assets, Net and Accrued Expenses and Other Current Liabilities

Other current assets, *Other non-current assets, net* and *Accrued expenses and other current liabilities* consist of the following:

	As of December 31,	
	2019	2018
Other current assets:		
Trade accounts receivable - DISH Network	$ 8,876	$ 13,550
Inventory	79,474	75,379
Prepaids and deposits	59,193	45,198
Other	22,217	18,539
Total other current assets	$ 169,760	$ 152,666
Other non-current assets, net:		
Restricted cash	$ 887	$ 796
Deferred tax assets, net	7,215	3,581
Capitalized software, net	101,786	96,760
Contract acquisition costs, net	96,723	104,013
Contract fulfillment costs, net	3,010	3,240
Other	22,556	28,059
Total other non-current assets, net	$ 232,177	$ 236,449
Accrued expenses and other current liabilities:		
Trade accounts payable - DISH Network	$ 502	$ 752
Accrued interest	32,184	45,131
Accrued compensation	42,846	42,796
Accrued taxes	18,493	7,609
Operating lease obligation	14,112	—
Other	138,662	61,366
Total accrued expenses and other current liabilities	$ 246,799	$ 157,654

Capitalized Software Costs

As of December 31, 2019 and 2018, the net carrying amount of externally marketed software was $101.8 million and $96.8 million, respectively, of which $38.8 million and $28.8 million, respectively, was under development and not yet placed in service. We capitalized costs related to the development of externally marketed software of $29.3 million, $31.6 million and $31.3 million and recorded related amortization expense of $24.3 million, $23.0 million and $19.5 million for the years ended December 31, 2019, 2018 and 2017, respectively. The weighted average useful life of our externally marketed software was three years as of December 31, 2019.

Cash and Cash Equivalents and Restricted Cash

The following table reconciles cash and cash equivalents and restricted cash, as presented in the Consolidated Balance Sheets to the total of the same as presented in the Consolidated Statements of Cash Flows:

	For the years ended December 31,		
	2019	2018	2017
Cash and cash equivalents, including restricted amounts, beginning of period:			
Cash and cash equivalents	$ 847,823	$ 1,822,561	$ 2,070,964
Restricted cash	796	793	723
Total cash and cash equivalents, included restricted amounts, beginning of period	$ 848,619	$ 1,823,354	$ 2,071,687
Cash and cash equivalents, including restricted amounts, end of period:			
Cash and cash equivalents	$ 1,139,435	$ 847,823	$ 1,822,561
Restricted cash	887	796	793
Total cash and cash equivalents, included restricted amounts, end of period	$ 1,140,322	$ 848,619	$ 1,823,354

Non-cash Investing and Financing Activities

The following table presents the non-cash investing and financing activities:

	For the years ended December 31,		
	2019	2018	2017
Property and equipment financed under finance lease obligations	$ 349	$ 364	$ 8,484
Increase (decrease) in capital expenditures included in accounts payable, net	1,625	1,566	(2,522)
Capitalized in-orbit incentive obligations	—	—	31,000
Non-cash net assets exchanged for HSS Tracking Stock (*Note 5*)	—	—	190,221
Non-cash net assets exchanged for BSS Transaction (*Note 5*)	332,699	—	—
Non-cash net assets received in exchange for a 20% ownership interest in our existing Brazilian subsidiary	94,918	—	—
Contribution from EchoStar in our existing Brazilian subsidiary	9,606	—	—
Transfer of launch service contracts from (to) EchoStar	—	—	(145,114)
Contribution of non-cash net assets pursuant to Share Exchange Agreement (*Note 1*)	—	—	219,662
Contribution of EchoStar XIX satellite	—	—	514,448

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Section 302 Certification

I, Michael T. Dugan, certify that:

1. I have reviewed the Annual Report on Form 10-K of Hughes Satellite Systems Corporation;

2. Based on my knowledge, this 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 report;

3. Based on my knowledge, the financial statements, and other financial information included in this 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 report;

4. The registrant's other certifying officer(s) 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 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 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 report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this 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 officer(s) 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 functions):

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 20, 2020

/s/ Michael T. Dugan

Chief Executive Officer, President and Director
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Section 302 Certification

I, David J. Rayner, certify that:

1. I have reviewed the Annual Report on Form 10-K of Hughes Satellite Systems Corporation;

2. Based on my knowledge, this 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 report;

3. Based on my knowledge, the financial statements, and other financial information included in this 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 report;

4. The registrant's other certifying officer(s) 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 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 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 report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this 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 officer(s) 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 functions):

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 20, 2020

/s/ David J. Rayner

Executive Vice President, Chief Financial Officer,
Chief Operating Officer and Treasurer
(Principal Financial and Accounting Officer)

EXHIBIT 32.1

CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
Section 906 Certifications

In connection with the annual report for the year ended December 31, 2019 on Form 10-K (the “Annual Report”), of Hughes Satellite Systems Corporation (the “Company”) as filed with the Securities and Exchange Commission on the date hereof, we, Michael T. Dugan and David J. Rayner, Chief Executive Officer and Chief Financial Officer, respectively, of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant section 906 of the Sarbanes-Oxley Act of 2002, that to the best of our knowledge:

(i) the Annual Report fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934; and

(ii) the information contained in this Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 20, 2020

	/s/ Michael T. Dugan
Name:	Michael T. Dugan
Title:	Chief Executive Officer, President and Director *(Principal Executive Officer)*

	/s/ David J. Rayner
Name:	David J. Rayner
Title:	Executive Vice President, Chief Financial Officer, Chief Operating Officer and Treasurer *(Principal Financial and Accounting Officer)*

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Annual Report or as a separate disclosure document.

A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906 HAS BEEN PROVIDED TO THE COMPANY AND WILL BE RETAINED BY THE COMPANY AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.

EchoStar Announces Financial Results for Three and Twelve Months Ended December 31, 2019

Englewood, CO, February 20, 2020—EchoStar Corporation (NASDAQ: SATS) today announced its financial results for the three and twelve months ended December 31, 2019.

Three Months Ended December 31, 2019 Financial Highlights:

- Consolidated revenues of $499.0 million.
- Net loss from continuing operations of $56.3 million, consolidated net loss attributable to EchoStar common stock of $53.1 million, and diluted loss per share of $(0.55).
- Consolidated Adjusted EBITDA of $155.9 million (see discussion and the reconciliation of GAAP to this non-GAAP measure below).

Twelve Months Ended December 31, 2019 Financial Highlights:

- Consolidated revenues of $1.9 billion.
- Net loss from continuing operations of $113.7 million, consolidated net loss attributable to EchoStar common stock of $62.9 million, and diluted loss per share of $(0.65).
- Consolidated Adjusted EBITDA of $582.8 million (see discussion and the reconciliation of GAAP to this non-GAAP measure below).

“I am pleased with our performance in the fourth quarter and full year of 2019” commented Michael Dugan, CEO and President of EchoStar. “We grew our revenue and Adjusted EBITDA from 2018. We completed a transformative spin-off of our BSS business to DISH Network Corporation as well as additional strategic transactions that allow us to focus on the growing broadband and connectivity markets. We concluded our joint venture with Yahsat in Brazil in November, and as part of that transaction, acquired approximately 20,000 additional consumer subscribers. Operationally, we grew our consumer subscriber base by another 20,000 in the fourth quarter driven by our international markets which brings our broadband subscriber total to approximately 1.477 million as of year-end 2019. Until our EchoStar 24/J3 satellite is launched, we are focused on increasing the yield on our existing assets and are continuing to explore opportunities in pursuit of our strategy of being a global connectivity provider.”

Three Months Ended December 31, 2019 - Additional Information:

- Consolidated revenue increased 10% or $45.0 million year over year.
- Adjusted EBITDA increased 19% or $25.1 million year over year.
  - Hughes segment Adjusted EBITDA increased by $25.9 million primarily driven by higher revenue and associated margin from our consumer business and enterprise equipment sales. Adjusted EBITDA excludes all activity related to the India license fee dispute discussed below.
  - ESS segment Adjusted EBITDA was flat.
  - Corporate and Other segment Adjusted EBITDA decreased by $0.5 million. The segment was impacted by the loss of the revenue and EBITDA associated with the transfer of certain real estate assets to DISH Network Corporation as part of the BSS transaction that were not treated as discontinued operations as well as continued investment in corporate development activities. This was partially offset by smaller equity losses of unconsolidated affiliates. During the fourth quarter, we changed our accounting policy to record our share of net earnings or losses of unconsolidated affiliates on a three month-lag. Based on this change, our results exclude Q4-19 activity from these equity investments.

- License fee dispute with the Government of India:
    - In October 2019, the Supreme Court of India issued an order affirming certain license fee assessments, interest, penalties, and interest on the penalties imposed by the Indian Department of Telecommunications ("DOT") related to a license fee dispute with the Government of India that dates back over a decade and has affected the entire Indian Telecom industry. On February 14, 2020, the Supreme Court of India denied the petitions filed by us and other telecommunication service providers asking the court to modify the order to permit the DOT to calculate the final amount due and extend the payment deadline. To date, the DOT has issued us written assessments of $28.4 million for the license fees, penalties and interest. It is possible the DOT's assessment may be modified depending on the methodology it uses to calculate interest over the period in question.
    - As a result of the Supreme Court's decisions and based on the DOT's current methodology for assessing penalties and interest, we booked an additional accrual of $60.8 million during the quarter which also impacted Net income (loss) attributable to non-controlling interest. This is summarized as follows (amounts in millions):

SG&A expense	$	2.3
Interest expense, net of amounts capitalized	$	58.5
Total	$	60.8
Net income (loss) attributable to non-controlling interest	$	9.4

    We now have $80.2 million accrued for this matter as of December 31, 2019. Any eventual payments made with respect to the ultimate outcome may be different from our accrual and such differences could be significant.

- Net loss from continuing operations was $56.3 million, a decrease of loss by $72.5 million from last year. The decreased loss was primarily due to an impairment of long-lived asset of $65.2 million in Q4-18, higher net gains on investments of $45.0 million, and higher operating income (excluding impairments) of $9.2 million. This was partially offset by higher net interest expense of $45.5 million which includes $58.5 of interest related to the license fee dispute with the Government of India discussed above. Excluding the impact of the license fee dispute (tax effected), Net earnings from continuing operations would have been $4.3 million.

- Hughes broadband subscribers are approximately 1,477,000 as of December 31, 2019 including approximately 237,000 subscribers in Central and South America.

- Cash, cash equivalents and current marketable investment securities were $2.5 billion as of December 31, 2019.

Set forth below is a table highlighting certain of EchoStar's segment results for the three and twelve months ended December 31, 2019 and 2018 (amounts in thousands) from continuing operations (all US GAAP amounts reference results from continuing operations):

	For the three months ended December 31,		For the twelve months ended December 31,	
	2019	2018	2019	2018
Revenue				
Hughes	$ 491,823	$ 444,642	$ 1,852,742	$ 1,716,528
EchoStar Satellite Services	4,384	4,669	16,257	27,231
Corporate and Other	2,799	4,672	17,082	18,879
Total revenue	$ 499,006	$ 453,983	$ 1,886,081	$ 1,762,638
Adjusted EBITDA				
Hughes	$ 176,738	$ 150,809	$ 666,890	$ 616,532
EchoStar Satellite Services	1,988	2,286	6,994	17,764
Corporate & Other:				
Corporate overhead, operating and other	(23,090)	(18,988)	(81,859)	(73,237)
Equity in earnings (losses) of unconsolidated affiliates, net	250	(3,303)	(9,257)	(5,954)
Total Corporate & Other	(22,840)	(22,291)	(91,116)	(79,191)
Total Adjusted EBITDA	$ 155,886	$ 130,804	$ 582,768	$ 555,105
Net income (loss) from continuing operations	$ (56,273)	$ (128,774)	$ (113,653)	$ (132,362)
Expenditures for property and equipment	$ 103,723	$ 139,817	$ 418,074	$ 477,442

Reconciliation of GAAP to Non-GAAP Measurement (amounts in thousands):

	For the three months ended December 31,		For the twelve months ended December 31,	
	2019	2018	2019	2018
Net income (loss)	$ (63,094)	$ (111,648)	$ (74,252)	$ (38,633)
Interest income	(17,535)	(24,038)	(82,352)	(80,275)
Interest expense, net of amounts capitalized	94,203	55,250	251,016	219,288
Income tax provision (benefit), net	7,882	(1,698)	20,488	6,576
Depreciation and amortization	129,146	118,379	490,765	457,116
Net (income) loss from discontinued operations	6,821	(17,126)	(39,401)	(93,729)
Net (income) loss attributable to non-controlling interests	9,976	(550)	11,335	(1,842)
EBITDA	167,399	18,569	577,599	468,501
(Gains) losses on investments, net	(825)	44,227	(28,912)	12,622
Impairment of long-lived assets	—	65,220	—	65,220
Litigation expense	(627)	2,750	25,701	2,750
Vendor settlement	—	—	—	(9,571)
License fee dispute - India, net of non-controlling interests	(7,150)	—	(3,210)	—
Foreign currency transaction (gains) losses, net	(2,911)	38	11,590	15,583
Adjusted EBITDA	$ 155,886	$ 130,804	$ 582,768	$ 555,105

Note on Use of Non-GAAP Financial Measures

EBITDA is defined as “Net income (loss)” excluding “Interest income and expense, net,” “Income tax benefit (provision), net,” “Depreciation and amortization,” “Net income (loss) from discontinued operations,” and “Net income (loss) attributable to noncontrolling interests.”

Adjusted EBITDA is defined as EBITDA excluding “Gains and losses on investments, net,” “Foreign currency transaction gains (losses), net,” and other non-recurring or non-operational items. EBITDA and Adjusted EBITDA are not measures determined in accordance with US GAAP. EBITDA and Adjusted EBITDA are reconciled to “Net income (loss)” in the table above and should not be considered in isolation or as a substitute for operating income, net income or any other measure determined in accordance with US GAAP. Our management uses EBITDA and Adjusted EBITDA as measures of our operating efficiency and overall financial performance for benchmarking against our peers and competitors. Management believes that these non-GAAP measures provide meaningful supplemental information regarding the underlying operating performance of our business and are appropriate to enhance an overall understanding of our financial performance. Management also believes that EBITDA and Adjusted EBITDA are useful to investors because they are frequently used by securities analysts, investors, and other interested parties to evaluate the performance of companies in our industry.

The consolidated financial statements of EchoStar for the periods ended December 31, 2019 and 2018 are attached to this press release. Detailed financial data and other information are available in EchoStar’s Annual Report on Form 10-K for the period ended December 31, 2019 filed today with the Securities and Exchange Commission.

EchoStar will host its earnings conference call on Thursday, February 20, 2020 at 11:00 a.m. Eastern Time. The call-in numbers are (877) 815-1625 (toll-free) and (716) 247-5178 (international), Conference ID 2585784.

About EchoStar Corporation

EchoStar Corporation (NASDAQ: SATS) is a premier global provider of satellite communications solutions. Headquartered in Englewood, Colo., and conducting business around the globe, EchoStar is a pioneer in secure communications technologies through its Hughes Network Systems and EchoStar Satellite Services business segments.

Safe Harbor Statement under the US Private Securities Litigation Reform Act of 1995

This press release may contain statements that are forward looking, as that term is defined by the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on management's beliefs, as well as assumptions made by, and information currently available to, management. When used in this release, the words "believe," "anticipate," "estimate," "expect," "intend," "project," "plans," and similar expressions and the use of future dates are intended to identify forward-looking statements. Although management believes that the expectations reflected in these forward-looking statements are reasonable, it can give no assurance that these expectations will prove to have been correct. You are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date made. We assume no responsibility for the accuracy of forward-looking statements or information or for updating forward-looking information or statements. These statements are subject to certain risks, uncertainties, and assumptions. See "Risk Factors" in EchoStar's Annual Report on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission and in the other documents EchoStar files with the Securities and Exchange Commission from time to time.

###

Contact Information

EchoStar Investor Relations	**EchoStar Media Relations**
Terry Brown Phone: +1 303-728-5179 Email: terry.brown@echostar.com	Sharyn Nerenberg Phone: +1 301-428-7124 Email: sharyn.nerenberg@echostar.com

ECHOSTAR CORPORATION
Condensed Consolidated Balance Sheets
(Amounts in thousands, except per share amounts)

	As of December 31,	
	2019	**2018**
Assets		
Current assets:		
Cash and cash equivalents	$ 1,519,431	$ 928,306
Marketable investment securities	940,623	2,282,152
Trade accounts receivable and contract assets, net	196,629	201,096
Other current assets	179,531	165,809
Current assets of discontinued operations	—	3,486
Total current assets	2,836,214	3,580,849
Non-current assets:		
Property and equipment, net	2,528,738	2,534,666
Operating lease right-of-use assets	114,042	—
Goodwill	506,953	504,173
Regulatory authorizations, net	478,598	430,039
Other intangible assets, net	29,507	44,231
Other investments, net	325,405	266,513
Other non-current assets, net	334,841	338,390
Non-current assets of discontinued operations	—	962,433
Total non-current assets	4,318,084	5,080,445
Total assets	$ 7,154,298	$ 8,661,294
Liabilities and Stockholders' Equity		
Current liabilities:		
Trade accounts payable	$ 124,080	$ 121,437
Current portion of long-term debt and finance lease obligations	486	919,582
Contract liabilities	101,060	72,284
Accrued expenses and other current liabilities	270,393	181,698
Current liabilities of discontinued operations	—	50,136
Total current liabilities	496,019	1,345,137
Non-current liabilities:		
Long-term debt and finance lease obligations, net of current portion	2,389,733	2,386,202
Deferred tax liabilities, net	351,692	287,989
Operating lease liabilities	96,941	—
Other non-current liabilities	74,360	80,304
Non-current liabilities of discontinued operations	—	406,188
Total non-current liabilities	2,912,726	3,160,683
Total liabilities	3,408,745	4,505,820
Commitments and contingencies		

Stockholders' equity:		
Preferred stock, $0.001 par value, 20,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Common stock, $0.001 par value, 4,000,000,000 shares authorized:		
Class A common stock, $0.001 par value, 1,600,000,000 shares authorized, 56,592,251 shares issued and 50,107,330 shares outstanding at December 31, 2019 and 54,142,566 shares issued and 47,657,645 shares outstanding at December 31, 2018	57	54
Class B convertible common stock, $0.001 par value, 800,000,000 shares authorized, 47,687,039 shares issued and outstanding at both December 31, 2019 and 2018	48	48
Class C convertible common stock, $0.001 par value, 800,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Class D common stock, $0.001 par value, 800,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Additional paid-in capital	3,290,483	3,702,522
Accumulated other comprehensive income (loss)	(122,138)	(125,100)
Accumulated earnings (losses)	632,809	694,129
Treasury stock, at cost	(131,454)	(131,454)
Total EchoStar Corporation stockholders' equity	3,669,805	4,140,199
Non-controlling interests	75,748	15,275
Total stockholders' equity	3,745,553	4,155,474
Total liabilities and stockholders' equity	$ 7,154,298	$ 8,661,294

ECHOSTAR CORPORATION
Condensed Consolidated Statements of Operations
(Amounts in thousands, except per share amounts)

	For the years ended December 31,		
	2019	2018	2017
Revenue:			
Services and other revenue	$ 1,619,271	$ 1,557,228	$ 1,285,666
Equipment revenue	266,810	205,410	239,489
Total revenue	1,886,081	1,762,638	1,525,155
Costs and expenses:			
Cost of sales - services and other (exclusive of depreciation and amortization)	561,353	563,907	500,773
Cost of sales - equipment (exclusive of depreciation and amortization)	226,002	176,600	195,151
Selling, general and administrative expenses	509,145	436,088	370,500
Research and development expenses	25,739	27,570	31,745
Depreciation and amortization	490,765	457,116	385,662
Impairment of long-lived assets	—	65,220	10,762
Total costs and expenses	1,813,004	1,726,501	1,494,593
Operating income (loss)	73,077	36,137	30,562
Other income (expense):			
Interest income	82,352	80,275	44,619
Interest expense, net of amounts capitalized	(251,016)	(219,288)	(184,389)
Gains (losses) on investments, net	28,912	(12,622)	53,453
Equity in earnings (losses) of unconsolidated affiliates, net	(14,734)	(5,954)	16,973
Foreign currency transaction gains (losses), net	(11,590)	(15,583)	1,218
Other, net	(166)	11,249	5,364
Total other income (expense), net	(166,242)	(161,923)	(62,762)
Income (loss) from continuing operations before income taxes	(93,165)	(125,786)	(32,200)
Income tax benefit (provision), net	(20,488)	(6,576)	155,107
Net income (loss) from continuing operations	(113,653)	(132,362)	122,907
Net income (loss) from discontinued operations	39,401	93,729	270,582
Net income (loss)	(74,252)	(38,633)	393,489
Less: Net income (loss) attributable to non-controlling interests	(11,335)	1,842	928
Net income (loss) attributable to EchoStar Corporation	(62,917)	(40,475)	392,561
Less: Net income (loss) attributable to Hughes Retail Preferred Tracking Stock	—	—	(1,209)
Net income (loss) attributable to EchoStar Corporation common stock	$ (62,917)	$ (40,475)	$ 393,770
Earnings (losses) per share - Class A and B common stock:			
Basic earnings (loss) from continuing operations per share	$ (1.06)	$ (1.39)	$ 1.29
Total basic earnings (loss) per share	$ (0.65)	$ (0.42)	$ 4.13
Diluted earnings (loss) from continuing operations per share	$ (1.06)	$ (1.39)	$ 1.27
Total diluted earnings (loss) per share	$ (0.65)	$ (0.42)	$ 4.07

ECHOSTAR CORPORATION
Condensed Consolidated Statements of Cash Flows
(Amounts in thousands, except per share amounts)

	For the years ended December 31,		
	2019	**2018**	**2017**
Cash flows from operating activities:			
Net income (loss)	$ (74,252)	$ (38,633)	$ 393,489
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Depreciation and amortization	588,200	598,178	533,849
Impairment of long-lived assets	—	65,220	10,762
Losses (gains) on investments, net	(28,912)	12,109	(53,453)
Equity in losses (earnings) of unconsolidated affiliates, net	14,734	6,037	(15,814)
Foreign currency transaction losses (gains), net	11,590	15,583	(1,218)
Deferred tax provision (benefit), net	32,542	26,327	(288,577)
Stock-based compensation	9,353	9,990	10,103
Amortization of debt issuance costs	5,912	7,923	7,378
Dividends received from unconsolidated affiliates	2,716	10,000	19,000
Proceeds from sale of trading securities	—	—	8,922
Changes in current assets and current liabilities, net:			
Trade accounts receivable and contract assets, net	8,289	(17,842)	421
Other current assets	(39,190)	18,577	200,584
Trade accounts payable	13,149	9,562	(78,419)
Contract liabilities	26,376	7,867	5,322
Accrued expenses and other current liabilities	66,352	12,183	7,402
Changes in non-current assets and non-current liabilities, net	13,166	(5,070)	(36,975)
Other, net	6,297	(3,489)	4,116
Net cash flows from operating activities	656,322	734,522	726,892
Cash flows from investing activities:			
Purchases of marketable investment securities	(993,369)	(2,973,254)	(855,717)
Sales and maturities of marketable investment securities	2,391,220	1,498,463	580,235
Investments in unconsolidated affiliates	(2,149)	(115,991)	—
Sale of investment in unconsolidated affiliates	—	1,558	17,781
Dividend received from unconsolidated affiliate	2,284	—	—
Purchase of other investments	(93,687)	—	—
Expenditures for property and equipment	(418,584)	(555,141)	(583,211)
Refunds and other receipts related to property and equipment	—	77,524	4,311
Expenditures for externally marketed software	(29,310)	(31,639)	(31,331)
Purchases of regulatory authorizations	(34,447)	—	—
Net cash flows from investing activities	821,958	(2,098,480)	(867,932)

Cash flows from financing activities:			
Repurchase and maturity of the 2019 Senior Secured Notes	(920,923)	(70,173)	—
Repayment of other long-term debt and finance lease obligations	(29,347)	(41,019)	(37,670)
Payment of in-orbit incentive obligations	(5,447)	(5,350)	(5,487)
Net proceeds from Class A common stock options exercised	67,337	4,424	35,536
Net proceeds from Class A common stock issued under the Employee Stock Purchase Plan	9,779	9,368	8,758
Treasury share purchase	—	(33,292)	—
Purchase of non-controlling interest	(7,313)	—	—
Other, net	603	(521)	(1,065)
Net cash flows from financing activities	(885,311)	(136,563)	72
Effect of exchange rates on cash and cash equivalents	(575)	(2,233)	1,351
Net increase (decrease) in cash and cash equivalents	592,394	(1,502,754)	(139,617)
Cash and cash equivalents, including restricted amounts, beginning of period	929,495	2,432,249	2,571,866
Cash and cash equivalents, including restricted amounts, end of period	$ 1,521,889	$ 929,495	$ 2,432,249
Supplemental disclosure of cash flow information:			
Cash paid for interest (including capitalized interest)	$ 195,331	$ 240,596	$ 207,617
Cash paid for income taxes	$ 3,575	$ 5,209	$ 11,033

ECHOSTAR

Supplemental Investor Information

February 20, 2020

Note Regarding Financial Information

On September 10, 2019, EchoStar Corporation (“EchoStar”) transferred to DISH Network Corporation (“DISH”) the fo portion of its business that managed, marketed and provided (i) broadcast satellite services primarily to DISH ar subsidiaries (“DISH Network”), and Dish Mexico, S. de R.L. de C.V. and its subsidiaries and (ii) telemetry, trackin control services to satellites owned by DISH Network and a portion of EchoStar’s other businesses, and certain re assets and business operations (the “BSS Transaction”). The BSS Transaction was structured in a manner intended tax-free to EchoStar and its shareholders for U.S. federal income tax purposes.

Following consummation of the BSS Transaction, EchoStar no longer operates its former BSS business and, as a r beginning in the third quarter of 2019, the operating results of EchoStar’s former BSS business, except for certain real e that transferred in the transaction, will be presented as discontinued operations in EchoStar’s condensed consoli financial statements.

The following unaudited financial information for EchoStar for the quarters ending March 31, June 30, September 30 December 31, 2018 and 2019 reflect these changes for the periods presented.

The unaudited financial information is presented based on information currently available and is intended for inform purposes only. In addition, the unaudited financial information is not necessarily indicative of EchoStar’s future fina condition or results of operations.

The unaudited financial information should be read in conjunction with the audited consolidated financial statements accompanying notes in Item 15. Exhibits, Financial Statement Schedules and Item 7. *Management’s* Discussion Analysis of Financial Condition and Results of Operations included in EchoStar’s Annual Report on Form 10-K for the ended December 31, 2019.

The data presented is based on available information and assumptions that EchoStar’s management believes reasonable, factually supportable, reflect the impacts of events directly attributable to the BSS Transaction and for purp of the statements of operations, are expected to have a continuing impact on EchoStar. The adjustments do not reflect f events that may occur after the BSS Transaction.

Post BSS Transaction – Continuing Ops ($000)

	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
Revenue:								
Services and other revenue	$ 370,885	$ 388,207	$ 399,428	$ 398,708	$ 402,668	$ 402,786	$ 406,537	$ 407,2
Equipment revenue	42,947	50,342	56,846	55,275	51,714	57,645	65,725	91,7
Total revenue	413,832	438,549	456,274	453,983	454,382	460,431	472,262	499,0
Costs and expenses:								
Cost of sales - services and other	138,489	140,842	142,291	142,285	143,347	142,679	143,842	131,4
Cost of sales - equipment	39,071	41,865	46,318	49,346	45,007	46,549	51,188	83,2
Selling, general and administrative expenses	103,257	103,076	107,468	122,287	112,114	149,209	122,629	125,1
Research and development expenses	7,137	6,646	6,545	7,242	6,888	6,388	6,136	6,3
Deprecation and amortization	110,270	113,143	115,324	118,379	118,978	120,267	122,374	129,1
Impairments	-	-	-	65,220	-	-	-	-
Total costs and expenses	398,224	405,572	417,946	504,759	426,334	465,092	446,169	475,4
Operating Income	15,608	32,977	38,328	(50,776)	28,048	(4,661)	26,093	23,5
Other income (expense):								
Interest income	15,635	19,253	21,349	24,038	24,429	23,213	17,175	17,5
Interest expense, net of amounts capitalized	(55,055)	(54,105)	(54,878)	(55,250)	(53,199)	(53,749)	(49,865)	(94,2
Gains (losses) on investments, net	(36,664)	65,396	2,873	(44,227)	6,937	12,855	8,295	8
Equity in earnings (losses) of unconsolidated affiliates, net	(1,009)	(2,058)	416	(3,303)	(6,354)	(4,754)	(3,209)	(4
Foreign currency transaction gains (losses), net	209	(11,689)	(4,065)	(38)	(1,160)	1,753	(15,094)	2,9
Other, net	(5)	11,353	817	(916)	(41)	7	(1,493)	1,3
Total other income (expense), net	(76,889)	28,150	(33,488)	(79,696)	(29,388)	(20,675)	(44,191)	(71,9
Income (loss) from continuing operations before income taxes	(61,281)	61,127	4,840	(130,472)	(1,340)	(25,336)	(18,098)	(48,3
Income tax provision, net	4,574	(4,886)	(7,962)	1,698	(2,898)	(4,692)	(5,016)	(7,8
Net income (loss) from continuing operations	(56,707)	56,241	(3,122)	(128,774)	(4,238)	(30,028)	(23,114)	(56,2
Net income (loss) from discontinued operations	35,536	21,443	19,624	17,126	19,246	24,968	2,008	(6,8
Net income (loss)	(21,171)	77,684	16,502	(111,648)	15,008	(5,060)	(21,106)	(63,0
Less: Net income (loss) attributable to non-controlling interests	380	462	450	550	806	632	(2,797)	(9,9
Net income (loss) attributable to EchoStar Corporate common stock	$ (21,551)	$ 77,222	$ 16,052	$ (112,198)	$ 14,202	$ (5,692)	$ (18,309)	$ (53,1
EBITDA	$ 88,029	$ 208,660	$ 153,243	$ 18,569	$ 145,602	$ 124,835	$ 139,763	$ 167,3
Adjusted EBITDA	$ 124,484	$ 145,382	$ 154,435	$ 130,804	$ 139,825	$ 134,731	$ 152,326	$ 155,8

Post BSS Transaction – Continuing Ops ($000)

	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
Segment Operating Results:								
Revenue								
Hughes	$ 400,818	$ 426,306	$ 444,762	$ 444,642	$ 445,337	$ 451,847	$ 463,735	$ 491,8
ESS	8,264	7,496	6,802	4,669	4,033	3,742	4,098	4,3
Corporate and Other	4,750	4,747	4,710	4,672	5,012	4,842	4,429	2,7
Total	$ 413,832	$ 438,549	$ 456,274	$ 453,983	$ 454,382	$ 460,431	$ 472,262	$ 499,0
Adjusted EBITDA								
Hughes	$ 137,564	$ 160,668	$ 167,491	$ 150,809	$ 161,642	$ 155,212	$ 173,298	$ 176,7
ESS	5,933	4,858	4,687	2,286	1,729	1,486	1,791	1,9
Corporate and Other	(19,013)	(20,144)	(17,743)	(22,291)	(23,546)	(21,967)	(22,763)	(22,8
Total	$ 124,484	$ 145,382	$ 154,435	$ 130,804	$ 139,825	$ 134,731	$ 152,326	$ 155,8
Reconciliation of GAAP to Non-GAAP Measurement:								
Net income (loss)	(21,171)	77,684	16,502	(111,648)	15,008	(5,060)	(21,106)	(63,0
Interest income	(15,635)	(19,253)	(21,349)	(24,038)	(24,429)	(23,213)	(17,175)	(17,5
Interest expense, net of amounts capitalized	55,055	54,105	54,878	55,250	53,199	53,749	49,865	94,2
Income tax provision (benefit), net	(4,574)	4,886	7,962	(1,698)	2,898	4,692	5,016	7,8
Depreciation and amortization	110,270	113,143	115,324	118,379	118,978	120,267	122,374	129,1
Net (income) loss from discontinued operations	(35,536)	(21,443)	(19,624)	(17,126)	(19,246)	(24,968)	(2,008)	6,8
Net (income) loss attributable to non-controlling interests	(380)	(462)	(450)	(550)	(806)	(632)	2,797	9,9
EBITDA	$ 88,029	$ 208,660	$ 153,243	$ 18,569	$ 145,602	$ 124,835	$ 139,763	$ 167,3
(Gains) losses on investments, net	36,664	(65,396)	(2,873)	44,227	(6,937)	(12,855)	(8,295)	(8
Impairment of long-lived assets	-	-	-	65,220	-	-	-	-
Litigation expense	-	-	-	2,750	-	24,504	1,824	(6
Vendor settlement	-	(9,571)	-	-	-	-	-	-
License fee dispute - India, net of non-controlling interests	-	-	-	-	-	-	3,940	(7,1
Foreign currency transaction (gains) losses, net	(209)	11,689	4,065	38	1,160	(1,753)	15,094	(2,9
Adjusted EBITDA	$ 124,484	$ 145,382	$ 154,435	$ 130,804	$ 139,825	$ 134,731	$ 152,326	$ 155,8

Note on Use of Non-GAAP Financial Measures

EBITDA is defined as “Net income (loss)” excluding “Interest income and expense, net”, “Income tax benefit (provis net”, “Depreciation and amortization,” “Net income (loss) from discontinued operations,” and “Net income (loss) attribu to noncontrolling interests.”

Adjusted EBITDA is defined as EBITDA excluding “Gains and losses on investments, net,” “Foreign currency transl gains (losses), net”, and other non-recurring or non-operational items.

EBITDA and Adjusted EBITDA are not measures determined in accordance with US GAAP. EBITDA and Adjusted EB are reconciled to “Net income (loss)” in the table above and should not be considered in isolation or as a substitut operating income, net income or any other measure determined in accordance with US GAAP. Our management EBITDA and Adjusted EBITDA as measures of our operating efficiency and overall financial performance for benchma against our peers and competitors. Management believes that these non-GAAP measures provide meani supplemental information regarding the underlying operating performance of our business and are appropriate to enh an overall understanding of our financial performance. Management also believes that EBITDA and Adjusted EBITD useful to investors because they are frequently used by securities analysts, investors, and other interested parti evaluate the performance of companies in our industry.