DISH Network CORP
Form 10-K
February 13, 2019
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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, 2018

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: 0-26176

DISH Network Corporation

(Exact name of registrant as specified in its charter)

Nevada	88-0336997
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

9601 South Meridian Boulevard Englewood, Colorado	80112
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (303) 723-1000

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

Title of each class	Name of each exchange on which registered
Class A common stock, $0.01 par value	The Nasdaq Stock Market L.L.C.

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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company
	Emerging growth company

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

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

As of June 30, 2018, the aggregate market value of Class A common stock held by non-affiliates of the registrant was $7.4 billion based upon the closing price of the Class A common stock as reported on the Nasdaq Global Select Market as of the close of business on the last trading day of the month.

As of February 8, 2019, the registrant's outstanding common stock consisted of 229,448,957 shares of Class A common stock and 238,435,208 shares of Class B common stock, each $0.01 par value.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents are incorporated into this Form 10-K by reference:

Portions of the registrant's definitive Proxy Statement to be filed in connection with its 2019 Annual Meeting of Shareholders are incorporated by reference in Part III.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

Unless otherwise required by the context, in this report, the words “DISH Network,” the “Company,” “we,” “our” and “us” refe to DISH Network Corporation and its subsidiaries, “EchoStar” refers to EchoStar Corporation and its subsidiaries, and “DISH DBS” refers to DISH DBS Corporation, a wholly-owned, indirect subsidiary of DISH Network, and its subsidiaries.

This Annual Report on Form 10-K contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, including, in particular, statements about our plans, objectives and strategies, growth opportunities in our industries and businesses, our expectations regarding future results, financial condition, liquidity and capital requirements, our estimates regarding the impact of regulatory developments and legal proceedings, and other trends and projections. Forward-looking statements are not historical facts and may be identified by words such as “future,” “anticipate,” “intend,” “plan,” “goal,” “seek,” “believe,” “estimate,” “expect,” “predict,” “will,” “would,” “could,” similar terms. These forward-looking statements are based on information available to us as of the date of this Annual Report on 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 known and unknown risks, uncertainties and other factors, which may be beyond our control. 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, the following:

Competition and Economic Risks

- As the pay-TV industry has matured and bundled offers combining video, broadband and/or wireless services have become more prevalent and competitive, we face intense and increasing competition from providers of video, broadband and/or wireless services, which may require us to further increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn.

- Changing consumer behavior and competition from digital media companies that provide or facilitate the delivery of video content via the Internet may reduce our subscriber activations and may cause our subscribers to purchase fewer services from us or to cancel our services altogether, resulting in less revenue to us.

- Economic weakness and uncertainty may adversely affect our ability to grow or maintain our business.

- Our competitors may be able to leverage their relationships with programmers to reduce their programming costs and/or offer exclusive content that will place them at a competitive advantage to us.

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Our over-the-top (“OTT”) Sling TV Internet-based services face certain risks, including, among others, significant competition.

- If government regulations relating to the Internet change, we may need to alter the manner in which we conduct our Sling TV business, and/or incur greater operating expenses to comply with those regulations.

- Changes in how network operators handle and charge for access to data that travels across their networks could adversely impact our business.

- We face increasing competition from other distributors of unique programming services such as foreign language, sports programming and original content that may limit our ability to maintain subscribers that desire these unique programming services.

Operational and Service Delivery Risks

- If our operational performance and customer satisfaction were to deteriorate, our subscriber activations and our subscriber churn rate may be negatively impacted, which could in turn adversely affect our revenue.

- If our subscriber activations continue to decrease, or if our subscriber churn rate, subscriber acquisition costs or retention costs increase, our financial performance will be adversely affected.

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- Programming expenses are increasing and may adversely affect our future financial condition and results of operations.

- We depend on others to provide the programming that we offer to our subscribers and, if we fail to obtain or lose access to certain programming, our subscriber activations and our subscriber churn rate may be negatively impacted.

- We may not be able to obtain necessary retransmission consent agreements at acceptable rates, or at all, from local network stations.

- We may be required to make substantial additional investments to maintain competitive programming offerings.

- Any failure or inadequacy of our information technology infrastructure and communications systems or those of third parties that we use in our operations, including, without limitation, those caused by cyber-attacks or other malicious activities, could disrupt or harm our business.

- We currently depend on EchoStar to provide the vast majority of our satellite transponder capacity and other related services to us. Our business would be adversely affected if EchoStar ceases to provide these services to us and we are unable to obtain suitable replacement services from third parties.

- Technology in the pay-TV industry changes rapidly, and our success may depend in part on our timely introduction and implementation of, and effective investment in, new competitive products and services, and our failure to do so could cause our products and services to become obsolete and could negatively impact our business.

- We rely on a single vendor or a limited number of vendors to provide certain key products or services to us such as information technology support, billing systems and security access devices, and the inability of these key vendors to meet our needs could have a material adverse effect on our business.

- We rely on a few suppliers and in some cases a single supplier for many components of our new set-top boxes, and any reduction or interruption in supplies or significant increase in the price of supplies could have a negative impact on our business.

- Our programming signals are subject to theft, and we are vulnerable to other forms of fraud that could require us to make significant expenditures to remedy.

- We depend on independent third parties to solicit orders for our DISH TV services that represent a meaningful percentage of our total gross new DISH TV subscriber activations.

- We have limited satellite capacity and failures or reduced capacity could adversely affect our DISH TV services.

- Our owned and leased satellites are subject to construction, launch, operational and environmental risks that could limit our ability to utilize these satellites.

- We generally do not carry commercial launch or in-orbit insurance on any of the satellites that we use, other than certain satellites leased from third parties, and could face significant impairment charges if any of our owned satellites fail.

- We may have potential conflicts of interest with EchoStar due to our common ownership and management.

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

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Acquisition and Capital Structure Risks

- We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses.

- We face certain risks related to our non-controlling investments in the Northstar Entities and the SNR Entities, which may have a material adverse effect on our business, results of operations and financial condition.

- To the extent that we commercialize our wireless spectrum licenses, we will face certain risks entering and competing in the wireless services industry and operating a wireless services business.

- Our wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The failure to meet such build-out and/or renewal requirements may have a material adverse effect on our business, results of operations and financial condition.

- We rely on highly skilled personnel for our wireless business, including without limitation our ability to meet build-out requirements, and if we are unable to hire and retain key personnel or hire qualified personnel then our wireless business may be adversely affected.

- We may pursue acquisitions and other strategic transactions to complement or expand our business that may not be successful, and we may lose up to the entire value of our investment in these acquisitions and transactions.

- We may need additional capital, which may not be available on acceptable terms or at all, to continue investing in our business and to finance acquisitions and other strategic transactions.

- We have substantial debt outstanding and may incur additional debt.

- The conditional conversion features of our 3 3/8% Convertible Notes due 2026 (the “Convertible Notes due 2026”) and our 2 3/8% Convertible Notes due 2024 (the “Convertible Notes due 2024,” and collectively with the Convertible Notes due 2026, the “Convertible Notes”), if triggered, may adversely affect our financial condition.

- The convertible note hedge and warrant transactions that we entered into in connection with the offering of the Convertible Notes due 2026 may affect the value of the Convertible Notes due 2026 and our Class A common stock.

- We are subject to counterparty risk with respect to the convertible note hedge transactions.

- From time to time a portion of our investment portfolio may be invested in securities that have limited liquidity and may not be immediately accessible to support our financing needs, including investments in public companies that are highly speculative and have experienced and continue to experience volatility.

- It may be difficult for a third party to acquire us, even if doing so may be beneficial to our shareholders, because of our ownership structure.

- We are controlled by one principal stockholder who is also our Chairman.

Legal and Regulatory Risks

- The rulings in the Telemarketing litigation requiring us to pay up to an aggregate amount of $341 million and imposing certain injunctive relief against us, if upheld, would have a material adverse effect on our cash, cash equivalents and marketable investment securities balances and our business operations.

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- Our business may be materially affected by the Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act"). Negative or unexpected tax consequences could adversely affect our business, financial condition and results of operations.

- Our business depends on certain intellectual property rights and on not infringing the intellectual property rights of others.

- 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.

- Our ability to distribute video content via the Internet, including our Sling TV services, involves regulatory risk.

- Changes in the Cable Act of 1992 ("Cable Act"), and/or the rules of the Federal Communications Commission ("FCC") that implement the Cable Act, may limit our ability to access programming from cable-affiliated programmers at nondiscriminatory rates.

- The injunction against our retransmission of distant networks, which is currently waived, may be reinstated.

- We are subject to significant regulatory oversight, and changes in applicable regulatory requirements, including any adoption or modification of laws or regulations relating to the Internet, could adversely affect our business.

- Our DISH TV services depend on FCC licenses that can expire or be revoked or modified and applications for FCC licenses that may not be granted.

- We are subject to digital high-definition ("HD") "carry-one, carry-all" requirements that cause capacity constraints.

- Our business, investor confidence in our financial results and stock price may be adversely affected if our internal controls are not effective.

- We may face other risks described from time to time in periodic and current reports we file with the Securities and Exchange Commission ("SEC").

Other factors that could cause or contribute to such differences include, but are not limited to, those discussed under the caption "Risk Factors" in Part I, Item 1A in this Annual Report on Form 10-K, those discussed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" herein and those discussed in other documents we file with the SEC. All cautionary statements made or referred to herein should be read as being applicable to all forward-looking statements wherever they appear. Investors should consider the risks and uncertainties described or referred to herein and should not place undue reliance on any forward-looking statements. The forward-looking statements speak only as of the date made, and we expressly disclaim any obligation

to update these forward-looking statements.

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PART I

Item 1.BUSINESS

OVERVIEW

DISH Network Corporation was organized in 1995 as a corporation under the laws of the State of Nevada. We started offering the DISH® branded pay-TV service in March 1996 and are the nation's fourth largest live-linear television programming provider. Our common stock is publicly traded on the Nasdaq Global Select Market under the symbol "DISH." Our principal executive offices are located at 9601 South Meridian Boulevard, Englewood, Colorado 80112 and our telephone number is (303) 723-1000.

DISH Network Corporation is a holding company. Its subsidiaries operate two primary business segments.

Pay-TV

We offer pay-TV services under the DISH® brand and the Sling® brand (collectively "Pay-TV" services). The DISH branded pay-TV service consists of, among other things, FCC licenses authorizing us to use direct broadcast satellite ("DBS") and Fixed Satellite Service ("FSS") spectrum, our owned and leased satellites, receiver systems, broadcast operations, customer service facilities, a leased fiber optic network, in-home service and call center operations, and certain other assets utilized in our operations ("DISH TV"). We also design, develop and distribute receiver systems and provide digital broadcast operations, including satellite uplinking/downlinking, transmission and other services to third-party pay-TV providers. The Sling branded pay-TV services consist of, among other things, multichannel, live-linear streaming OTT Internet-based domestic, international and Latino video programming services ("Sling TV"). As of December 31, 2018, we had 12.322 million Pay-TV subscribers in the United States, including 9.905 million DISH TV subscribers and 2.417 million Sling TV subscribers.

In addition, we historically offered broadband services under the dishNET™ brand, which includes satellite broadband services that utilize advanced technology and high-powered satellites launched by Hughes Communications, Inc. ("Hughes") and ViaSat, Inc. ("ViaSat") and wireline broadband services. However, as of the first quarter 2018, we have transitioned our broadband business focus from wholesale to authorized representative arrangements, and we are no longer marketing dishNET broadband services. Our existing broadband subscribers will decline through customer attrition. Generally, under these authorized representative arrangements, we will receive certain payments for each

broadband service activation generated and installation performed, and we will not incur subscriber acquisition costs for these activations.

Wireless

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below. These wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband Internet of Things ("IoT"), which is the first phase of our network deployment ("First Phase"). We expect to complete the First Phase by March 2020, with subsequent phases to be completed thereafter. As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, Radio Frequency ("RF") design, and deployment services for the First Phase.

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Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers. See Note 14 “Commitments and Contingencies – Commitments – Wireless – DISH Network Spectrum” in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Business Strategy – Pay-TV

Our Pay-TV business strategy is to be the best provider of video services in the United States by providing products with the best technology, outstanding customer service, and great value. We promote our Pay-TV services as providing our subscribers with a better “price-to-value” relationship than those available from other subscription television service providers.

- Products with the Best Technology. We offer a wide selection of local and national HD programming and are a technology leader in our industry, offering award-winning DVRs (including our Hopper® whole-home HD DVR), multiple tuner receivers, 1080p video on demand, and external hard drives. We offer several Sling TV services, including Sling Orange (our single-stream Sling domestic service), Sling Blue (our multi-stream Sling domestic service), Sling International, Sling Latino, among others, as well as add-on extras, pay-per-view events and a cloud based DVR service.

- Outstanding Customer Service. We strive to provide outstanding customer service by improving the quality of the initial installation of subscriber equipment, improving the reliability of our equipment, better educating our customers about our products and services, and resolving customer problems promptly and effectively when they arise.

- Great Value. We have historically been viewed as the low-cost provider in the pay-TV industry in the United States because we seek to offer the lowest everyday prices available to consumers after introductory promotions expire. For example, for certain new and qualifying customers we guarantee our pricing for certain programming packages and equipment for a two-year commitment period. As another example, our Sling Orange service and our Sling Blue service are two of the lowest priced live-linear online streaming services in the industry. We also seek to differentiate ourselves from our competitors by providing the best overall customer experience. Our value proposition for our customers includes, among other things, the ability to watch our service remotely through our

DISH Anywhere mobile application and voice-enabled remote controls that are integrated with connected home devices.

Products and Services

DISH TV services. We offer a wide selection of video services under the DISH TV brand, with access to hundreds of channels depending on the level of subscription. Our standard programming packages generally include programming provided by national broadcast networks, local broadcast networks and national and regional cable networks. We also offer programming packages that include regional and specialty sports channels, premium movie channels and Latino and international programming. Our Latino and international programming packages allow subscribers to choose from over 270 channels in 28 languages.

In addition, we offer our DISH TV subscribers streaming access through DISH On Demand® to thousands of movies and TV shows via their TV or Internet-connected tablets, smartphones and computers.

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Our DISH TV subscribers also have the ability to use dishanywhere.com and our DISH Anywhere mobile applications for smartphones and tablets to view authorized content, search program listings and remotely control certain features of their DVRs. Dishanywhere.com and our DISH Anywhere mobile applications provide access to thousands of movies and television shows.

Sling TV services. We market our Sling TV services primarily to consumers who do not subscribe to traditional satellite and cable pay-TV services. Our Sling TV services require an Internet connection and are available on multiple streaming-capable devices including streaming media devices, TVs, tablets, computers, game consoles and smart phones. We offer Sling International, Sling Latino and Sling domestic video programming services. Our domestic Sling TV services have a single-stream service branded Sling Orange and a multi-stream service branded Sling Blue, which includes, among other things, the ability to stream on up to three devices simultaneously. We also offer add-on extras, pay-per-view events and a cloud based DVR service. During the second quarter 2018, we introduced a free tier of service as well as multiple a la carte channel options.

DISH Smart Home services. We have expanded the capabilities of our installation workforce. These capabilities include, among other things, TV mounting, appliance repair, set-up and installation of wireless networks, surround sound systems and home theaters, priority technical support, replacement equipment, cabling and power surge repairs, installation and setup of OTA antennas and sales of our and other companies' products to non-DISH TV customers as well as to our DISH TV subscriber base. We intend to grow this business in the future. Installation and repair services will include performing these services for other companies' products, with a focus on installation and set-up of connected home devices.

Technology. Our DISH TV subscribers receive programming via equipment that includes a small satellite dish, digital set-top receivers, and remote controls. Our Hopper and Joey® whole-home DVR promotes a suite of integrated features and functionality designed to maximize the convenience and ease of watching TV anytime and anywhere. It also has several innovative features that a consumer can use, at his or her option, to watch and record television programming, through their televisions, tablets, phones and computers. The Hopper 3, among other things, features 16 tuners, delivers an enhanced 4K Ultra HD experience, and supports up to seven TVs simultaneously. In December 2016, Sling TV launched a cloud DVR program available for customers who subscribe to Sling Orange and/or Sling Blue using multiple streaming-capable devices. In 2017, we launched the AirTV Player that allows customer to combine free channels from over-the-air ("OTA") antennas with their streaming content. In 2018, we launched AirTV, which allows customers the ability to bring local OTA channels into their home, DVR them and watch them on multiple devices, including Roku, Fire-TV, iOS and Android. We also design, develop and distribute a wide range of video delivery products and related technologies to third parties.

Broadband. In addition to our wide selection of pay-TV programming and award-winning technology, we historically offered broadband services under the dishNET™ brand, which includes satellite broadband services that utilize advanced technology and high-powered satellites launched by Hughes and ViaSat and wireline broadband services. However, as of the first quarter 2018, we have transitioned our broadband business focus from wholesale to

authorized representative arrangements, and we are no longer marketing dishNET broadband services. Our existing broadband subscribers will decline through customer attrition. Generally, under these authorized representative arrangements, we will receive certain payments for each broadband service activation generated and installation performed, and we will not incur subscriber acquisition costs for these activations.

Business Strategy – Wireless

Wireless

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below.

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DISH Network Spectrum

We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets. These wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We expect to complete the First Phase by March 2020, with subsequent phases to be completed thereafter.

As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, RF design, and deployment services for the First Phase. Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion through 2020. We expect the second phase of our network deployment ("Second Phase") to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion. We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers. See Note 14 "Commitments and Contingencies – Commitments – Wireless – DISH Network Spectrum" in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American AWS-3 Wireless II L.L.C. ("American II") and American AWS-3 Wireless III L.L.C. ("American III"), we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, LLC ("Northstar Spectrum"), the parent company of Northstar Wireless, LLC ("Northstar Wireless," and collectively with Northstar Spectrum, the "Northstar Entities"), and in SNR Wireless HoldCo, LLC ("SNR HoldCo"), the parent company of SNR Wireless LicenseCo, LLC ("SNR Wireless," and collectively with SNR HoldCo, the "SNR Entities"), respectively. On October 27, 2015, the FCC granted certain AWS-3 wireless spectrum licenses (the "AWS-3 Licenses") to Northstar Wireless and to SNR Wireless, respectively, which are recorded

in “FCC authorizations” on our Consolidated Balance Sheets. Under the applicable accounting guidance in Accounting Standards Codification 810, Consolidation (“ASC 810”), Northstar Spectrum and SNR HoldCo are considered variable interest entities and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. See Note 14 “Commitments and Contingencies – Commitments – Wireless – DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3

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Wireless Spectrum Licenses" in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on acceptable terms or at all. There can be no assurance that we, the Northstar Entities and/or the SNR Entities will be able to develop and implement business models that will realize a return on these wireless spectrum licenses or that we, the Northstar Entities and/or the SNR Entities will be able to profitably deploy the assets represented by these wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations. See Note 14 "Commitments and Contingencies – Commitments – Wireless" in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

New Business Opportunities

From time to time we evaluate opportunities for strategic investments or acquisitions that may complement our current services and products, enhance our technical capabilities, improve or sustain our competitive position, or otherwise offer growth opportunities.

Content Delivery

Digital Broadcast Operations Centers. Our principal digital broadcast operations facilities are located in Cheyenne, Wyoming and Gilbert, Arizona. We also have multiple regional and micro digital broadcast operations facilities that allow us to maximize the use of the spot beam capabilities of certain satellites. Programming content is delivered to these facilities by fiber or satellite and processed, compressed, encrypted and then uplinked to satellites for delivery to consumers.

Satellites. Our DISH TV programming is primarily delivered to customers using satellites that operate in the "Ku" band portion of the microwave radio spectrum. The Ku-band is divided into two spectrum segments. The portion of the Ku-band that allows the use of higher power satellites (12.2 to 12.7 GHz over the United States) is known as the Broadcast Satellite Service band, which is also referred to as the DBS band. The portion of the Ku-band that utilizes lower power satellites (11.7 to 12.2 GHz over the United States) is known as the FSS band.

Most of our DISH TV programming is currently delivered using DBS satellites. To accommodate more bandwidth-intensive HD programming and other needs, we continue to explore opportunities to expand our satellite capacity through the acquisition of additional spectrum, the launching of more technologically advanced satellites, and the more efficient use of existing spectrum via, among other things, better compression technologies.

We own or lease capacity on 11 satellites in geostationary orbit approximately 22,300 miles above the equator. For further information concerning these satellites and satellite anomalies, please see the table and discussion under "Satellites" below.

Conditional Access System. Our conditional access system for our DISH TV services secures our programming content using encryption so that only authorized customers can access our programming. We use microchips embedded in credit card-sized access cards, called "smart cards," or security chips in our DBS receiver systems for our DISH TV services to control access to authorized programming content ("Security Access Devices").

Our signal encryption 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 Security Access Device replacement programs and updates in security software, that are intended to make signal 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 and that we remain susceptible to additional signal theft. We expect that future replacements of our Security Access Devices may be necessary to keep our system secure. We cannot ensure that we will be successful in reducing or controlling theft of our programming content and we may incur additional costs in the future if our system's security is compromised.

For our Sling TV services, we encrypt programming content and use digital rights management software to, among other things, prevent unauthorized access to our programming content.

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Content Delivery Networks. The majority of Sling TV programming content is delivered to our backhaul and uplink facilities via the internet, fiber or satellite for processing and encryption. Our Sling TV programming content is distributed from our backhaul and uplink facilities, or directly from the content provider, to content delivery network providers for delivery to consumers via the Internet.

Internet Connection. Our Sling TV services require an Internet connection and are available through multiple streaming-capable devices. Certain of our DISH TV digital set-top boxes require an Internet connection to enable full functionality, including streaming access through DISH On Demand, access to dishanywhere.com and other applications.

Distribution Channels

While we offer receiver systems and programming through direct sales channels, a meaningful percentage of our gross new DISH TV subscriber activations are generated through independent third parties such as small satellite retailers, direct marketing groups, local and regional consumer electronics stores, nationwide retailers, and telecommunications companies. In general, we pay these independent third parties a mix of upfront and monthly incentives to solicit orders for our services and provide customer service. We offer our Sling TV services through direct sales channels and third-party marketing agreements.

Competition

Our business has historically focused on providing pay-TV services. We face substantial competition from established pay-TV providers and broadband service providers and increasing competition from companies providing/facilitating the delivery of video content via the Internet to computers, televisions, and other streaming and mobile devices, including wireless service providers. In recent years, the traditional pay-TV industry has matured, and industry consolidation and convergence has created competitors with greater scale and multiple product/service offerings. These developments, among others, have contributed to intense and increasing competition, and we expect such competition to continue.

Our Pay-TV services continue to face intense competition from traditional satellite television providers, cable companies and large telecommunication companies such as AT&T Inc. (“AT&T”), Comcast Corp. (“Comcast”), Charter Communications, Inc. (“Charter”), Verizon Communications, Inc. (“Verizon”) and others, many of whom have greater financial, marketing and other resources than we do. Some of these companies also have significant investments in companies that provide programming content. In recent years, mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others have created,

among other things, greater scale and financial leverage for the combined companies and increased the availability of bundled offerings combining video, broadband and/or wireless services. For example, in 2015 AT&T acquired DirecTV, our direct competitor and the largest satellite TV provider in the United States, which has an OTT service, DirecTV Now, that competes directly with our Sling TV services. Furthermore, AT&T's acquisition of DirecTV, among other things, allows DirecTV access to AT&T's nationwide platform for wireless mobile video and the ability to more seamlessly bundle its video services with AT&T's broadband Internet access and wireless services. In some cases, certain competitors have been able to potentially subsidize the price of video services with the price of other bundled services, particularly broadband services. Also, in October 2016, AT&T announced its acquisition of Time Warner (which owns certain Turner, HBO and Cinemax channels), which was completed in June 2018. In addition, in December 2017, Walt Disney Company announced its acquisition of certain assets of Twenty-First Century Fox, Inc. These transactions may affect us adversely by, among other things, making it more difficult for us to obtain access to certain programming networks on nondiscriminatory and fair terms, or at all. For example, in connection with AT&T's acquisition of Time Warner, Turner sent all of its distributors written, irrevocable offers to submit disputes over the price and other terms of Turner programming to binding arbitration and to guarantee continued access to that programming while any arbitration is pending. However, in October 2018, AT&T removed its HBO and Cinemax channels, which are not part of Turner, from our DISH TV and Sling TV programming lineup, as we and AT&T have been unable to negotiate the terms and conditions of a new programming carriage contract. Furthermore, AT&T offers its programming, including its HBO and Cinemax channels, directly to consumers over the Internet and provides HBO for free to subscribers of its streaming service AT&T's "Watch TV."

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We also face increasing competition from content providers and other companies who distribute video directly to consumers over the Internet. These content providers and other companies, as well as traditional satellite television providers, cable companies and large telecommunication companies, are rapidly increasing their Internet-based video offerings. Programming offered over the Internet has become more prevalent and consumers are spending an increasing amount of time accessing video content via the Internet on their mobile devices. In particular, consumers have shown increased interest in viewing certain video programming in any place, at any time and/or on any broadband-connected device they choose. Video content distributed over the Internet includes services with live-linear television programming such as DirecTV Now, Sony PlayStation Vue, YouTube TV, Fubo TV, Philo TV and Pluto TV, as well as single programmer offerings such as HBO NOW, CBS All Access, STARZ and SHOWTIME and offerings of large libraries of on-demand content, including in certain cases original content, by companies such as Netflix, Hulu, Apple, Amazon, Alphabet and Verizon. Certain of these companies have invested extensive resources in producing original content that is exclusive to their platform.

In addition to the traditional competition we have faced, new technologies have been, and will likely continue to be, developed that further increase the number of companies with whom we compete for video subscribers. For example, we face increasing competition from wireless telecommunications providers who offer mobile video offerings, other telephone companies who are finding ways to deliver video programming services over their wireline facilities or in a bundle with other multichannel video programming distributors (“MVPDs”), including among others, AT&T, and fiber-based networks including Google Fiber.

For further information see “Item 1A – Risk Factors – Competition and Economic Risks – As the pay-TV industry has matured and bundled offers combining video, broadband and/or wireless services have become more prevalent and competitive, we face intense and increasing competition from providers of video, broadband and/or wireless services, which may require us to further increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn.” and “Changing consumer behavior and competition from digital media companies that provide or facilitate the delivery of video content via the Internet may reduce our subscriber activations and may cause our subscribers to purchase fewer services from us or to cancel our services altogether, resulting in less revenue to us.”

Acquisition of New Subscribers

We incur significant upfront costs to acquire subscribers, including advertising, independent third-party retailer incentives, equipment, installation services and new customer promotions. Certain customer promotions to acquire new subscribers result in less programming revenue to us over the promotional period. While we attempt to recoup these upfront costs over the lives of their subscriptions, there can be no assurance that we will be successful in achieving that objective. With respect to our DISH TV services, we employ business rules such as minimum credit requirements for prospective customers and contractual commitments. We strive to provide outstanding customer service to increase the likelihood of customers keeping their Pay-TV service over longer periods of time. Subscriber acquisition costs for Sling TV subscribers are significantly lower than those for DISH TV subscribers. Our subscriber acquisition costs may vary significantly from period to period.

Advertising. We use print, radio, television and Internet media, on a local and national basis to motivate potential subscribers to contact DISH TV and Sling TV, visit our websites or contact independent third-party retailers.

Retailer Incentives. In general, we pay independent third-party retailers an upfront incentive for each new DISH TV subscriber they bring to DISH TV that results in the activation of qualified programming and generally pay independent third-party retailers small monthly incentives for up to 60 months; provided, among other things: (i) the independent third-party retailer continuously markets, promotes and solicits orders for DISH TV products and services; (ii) the independent third-party retailer continuously provides customer service to our DISH TV subscribers; and (iii) the customer continuously subscribes to qualified programming.

Third-Party Marketing Agreements. We have agreements with third parties to market, promote and solicit orders for our Sling TV services generally in connection with the purchase of a streaming-capable device. We pay a fee for each Sling TV subscriber activated under these agreements.

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Equipment. We incur significant upfront costs to provide our new DISH TV subscribers with in-home equipment, including HD and DVR receivers, which most of our new DISH TV subscribers lease from us. While we seek to recoup these upfront equipment costs mostly through monthly fees, there can be no assurance that we will be successful in achieving that objective. In addition, upon deactivation of a subscriber we may refurbish and redeploy their equipment which lowers future upfront costs. However, our ability to capitalize on these cost savings may be limited as technological advances and consumer demand for new features may render the returned equipment obsolete.

Installation Services. We incur significant upfront costs to install satellite dishes and receivers in the homes of our new DISH TV subscribers.

New Customer Promotions. We often offer our new DISH TV subscribers certain programming at no additional charge and/or promotional pricing during a commitment period. We often offer our new Sling TV subscribers free trials and/or streaming-capable devices at no additional charge and/or promotional pricing. While such promotional activities have an economic cost and reduce our subscriber-related revenue, they are not included in our definitions of subscriber acquisition costs or the DISH TV SAC metric.

Customer Retention

We incur significant costs to retain our existing DISH TV customers, mostly by upgrading their equipment to HD and DVR receivers and by providing retention credits. As with our subscriber acquisition costs, our retention upgrade spending includes the cost of equipment and installation services. In certain circumstances, we also offer programming at no additional charge and/or promotional pricing for limited periods for existing customers in exchange for a contractual commitment to receive service for a minimum term. A component of our retention efforts includes the re-installation of equipment for customers who move. Our subscriber retention costs may vary significantly from period to period. As our Sling TV services have no contract or commitment period, we have generally not provided Sling TV subscribers with retention credits, promotional pricing, special offers or discounts. Our retention efforts for Sling TV customers generally focuses on customer engagement and increased quality of our Sling TV services.

Customer Service

Customer Service Centers. We use both internally-operated and outsourced customer service centers to handle calls, chat messages and e-mails from prospective and existing customers. We strive to answer customer calls, chat messages and e-mails promptly and to resolve issues effectively on the first call, chat session or e-mail. We also use the Internet and other applications to provide our customers with self-service capabilities.

Installation and Smart Home Service Operations. High-quality installations, upgrades, and Smart Home services and repairs are critical to providing DISH TV subscribers with quality customer service. Such services and repairs are performed by both DISH Network employees and a network of independent contractors and includes, among other things, TV mounting, appliance repair, set-up and installation of wireless networks, surround sound systems and home theaters, priority technical support, replacement equipment, cabling and power surge repairs, and installation and setup of OTA antennas.

Subscriber Management. We presently use, and depend on, software systems for subscriber billing and related functions, including, among others, CSG Systems International, Inc.'s software system and Amdocs Limited software, used for the DISH TV services and dishNET branded broadband services, and Recurly, Inc.'s software system for the Sling TV services.

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Relationship with EchoStar

On January 1, 2008, we completed the distribution of our technology and set-top box business and certain infrastructure assets (the "Spin-off") into a separate publicly-traded company, EchoStar. DISH Network and EchoStar operate as separate publicly-traded companies and neither entity has any ownership interest in the other. However, a substantial majority of the voting power of the shares of both DISH Network and EchoStar is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established by Mr. Ergen for the benefit of his family. EchoStar provides the vast majority of our satellite transponder capacity and is a key supplier of other related services to us.

Furthermore, we have an authorized representative arrangement with Hughes, a wholly-owned subsidiary of EchoStar, under the MSA which offers satellite broadband Internet services to customers. See "Item 1A. Risk Factors" and Note 18 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Share Exchange. On February 28, 2017, we and EchoStar and certain of our respective subsidiaries completed the transactions contemplated by the Share Exchange Agreement (the "Share Exchange Agreement") that was previously entered into on January 31, 2017 (the "Share Exchange"). Pursuant to the Share Exchange Agreement, among other things, EchoStar transferred to us certain assets and liabilities of the EchoStar technologies and EchoStar broadcasting businesses, consisting primarily of the businesses that design, develop and distribute digital set-top boxes, provide satellite uplink services and develop and support streaming video technology, as well as certain investments in joint ventures, spectrum licenses, real estate properties and EchoStar's ten percent non-voting interest in Sling TV Holding L.L.C. (the "Transferred Businesses"), and in exchange, we transferred to EchoStar the 6,290,499 shares of preferred tracking stock issued by EchoStar (the "EchoStar Tracking Stock") and 81.128 shares of preferred tracking stock issued by Hughes Satellite Systems Corporation, a subsidiary of EchoStar (the "HSSC Tracking Stock," and together with the EchoStar Tracking Stock, collectively, the "Tracking Stock"), that tracked the residential retail satellite broadband business of Hughes Network Systems, L.L.C. ("HNS"), a wholly-owned subsidiary of Hughes. In connection with the Share Exchange, we and EchoStar and certain of their subsidiaries entered into certain agreements covering, among other things, tax matters, employee matters, intellectual property matters and the provision of transitional services.

As the Share Exchange was a transaction between entities that are under common control, accounting rules require that our Consolidated Financial Statements include the results of the Transferred Businesses for all periods presented, including periods prior to the completion of the Share Exchange. See Note 18 to our Consolidated Financial Statements in this Annual Report on Form 10-K on our Related Party Transactions with EchoStar for further information.

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SATELLITES

Pay-TV Satellites. Most of our DISH TV programming is currently delivered using DBS satellites. We continue to explore opportunities to expand our available satellite capacity through the use of other available spectrum. Increasing our available spectrum is particularly important as more bandwidth intensive HD programming is produced and to address new video and data applications consumers may desire in the future. We currently utilize 11 satellites in geostationary orbit approximately 22,300 miles above the equator as detailed in the table below.

Satellites	Launch Date	Degree Orbital Location	Estimated Useful Life (Years) / Lease Termination Date
Owned:			
EchoStar XV	July 2010	61.5	15
EchoStar XVIII	June 2016	61.5	15
Leased from EchoStar (1):			
EchoStar IX	August 2003	121	Month to month
EchoStar X (2)	February 2006	110	February 2021
EchoStar XI (2)	July 2008	110	September 2021
EchoStar XIV (2)	March 2010	119	February 2023
EchoStar XVI (3)	November 2012	61.5	January 2023
Nimiq 5	September 2009	72.7	September 2019
QuetzSat-1	September 2011	77	November 2021
Leased from Other Third Party:			
Anik F3	April 2007	118.7	April 2022
Ciel II (4)	December 2008	129	January 2020

(1) See Note 18 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our Related Party Transactions with EchoStar.
(2) We generally have the option to renew each lease on a year-to-year basis through the end of the useful life of the respective satellite.
(3) We have the option to renew this lease for an additional five-year period.
(4) During the fourth quarter 2018, we renewed this lease.

Satellite Anomalies

Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming that we offer. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited.

In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite. Such a failure could result in a prolonged loss of critical programming or a significant delay in our plans to expand programming as necessary to remain competitive and thus may have a material adverse effect on our business, financial condition and results of operations.

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In the past, certain of our owned and leased satellites have experienced anomalies, some of which have had a significant adverse impact on their remaining useful life and/or commercial operation. There can be no assurance that future anomalies will not impact the remaining useful life and/or commercial operation of any of the owned and leased satellites in our fleet. See "Impairment of Long-Lived Assets" in Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on evaluation of impairment. There can be no assurance that we can recover critical transmission capacity in the event one or more of our owned or leased in-orbit satellites were to fail. We generally do not carry commercial launch or in-orbit insurance on any of the satellites that we use, other than certain satellites leased from third parties, and therefore, we will bear the risk associated with any uninsured launch or in-orbit satellite failures.

Leased Satellites

AWS-4 Satellites. We own two in-orbit AWS-4 satellites (D1 and T1), as detailed in the table below.

Satellites Owned:	Launch Date	Degree Orbital Location	Estimated Useful Life (Years)
T1	July 2009	111.1	14.25
D1	April 2008	92.85	N/A

See Note 8 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our satellites.

GOVERNMENT REGULATIONS

Our operations, particularly our Pay-TV operations and our wireless spectrum licenses are subject to significant government regulation and oversight, primarily by the FCC and, to a certain extent, by Congress, other federal agencies and international, foreign, state and local authorities. Depending on the circumstances, noncompliance with legislation or regulations promulgated by these authorities could result in limitations on, or the suspension or revocation of, our licenses or registrations, the termination or loss of contracts or the imposition of contractual damages, civil fines or criminal penalties, any of which could have a material adverse effect on our business, financial condition and results of operations. These governmental authorities could also adopt regulations or take other actions that would adversely affect our business prospects.

Furthermore, the Administration and any government policy changes it may institute, which may be substantial, could increase regulatory uncertainty. The adoption or modification of laws or regulations relating to video programming distribution, satellite services, wireless telecommunications, broadband, the Internet, or other areas of our business could limit or otherwise adversely affect the manner in which we currently conduct our business. In addition, the manner in which regulations or legislation in these areas may be interpreted and enforced cannot be precisely determined, which in turn could have an adverse effect on our business, financial condition and results of operations.

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Wireless services and our wireless spectrum licenses are subject to regulation by the FCC and, depending on the jurisdiction, other federal, state and local, as well as international, governmental authorities and regulatory agencies, including, among other things, regulations governing the licensing, construction, operation, sale and interconnection arrangements of wireless telecommunications systems. In particular, the FCC imposes significant regulation on licensees of wireless spectrum with respect to how radio spectrum is used by licensees, the nature of the services that licensees may offer and how the services may be offered, and resolution of issues of interference between spectrum bands. The FCC grants wireless licenses for terms of generally 10-12 years that are subject to renewal or revocation. There can be no assurances that our wireless spectrum licenses will be renewed. Failure to comply with FCC build-out requirements in a given license area may result in acceleration of other build-out requirements or in the modification, cancellation, or non-renewal of licenses. For further information related to our licenses and build-out requirements related to our wireless spectrum licenses see "Item 1A. Risk Factors – Acquisition and Capital Structure Risks – We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses."

The following summary of regulatory developments and legislation in the United States is not intended to describe all present and proposed government regulation and legislation affecting the video programming distribution, satellite services, wireless telecommunications, broadband, and Internet industries. Government regulations that are currently the subject of judicial or administrative proceedings, legislative hearings or administrative proposals could change these industries to varying degrees. We cannot predict either the outcome of these proceedings or any potential impact they might have on these industries or on our operations.

FCC Regulations Governing our Pay-TV Operations

FCC Jurisdiction over our DBS Operations. The Communications Act of 1934, as amended (the "Communications Act"), gives the FCC broad authority to regulate the operations of satellite companies. Specifically, the Communications Act gives the FCC regulatory jurisdiction over the following areas relating to communications satellite operations:

- the assignment of satellite radio frequencies and orbital locations, the licensing of satellites and earth stations, the granting of related authorizations, and evaluation of the fitness of a company to be a licensee;
- approval for the relocation of satellites to different orbital locations or the replacement of an existing satellite with a new satellite;
- ensuring compliance with the terms and conditions of such assignments, licenses, authorizations and approvals, including required timetables for construction and operation of satellites;
- avoiding interference with other radio frequency emitters; and
- ensuring compliance with other applicable provisions of the Communications Act and FCC rules and regulations.

To obtain FCC satellite licenses and authorizations, satellite operators must satisfy strict legal, technical and financial qualification requirements. Once issued, these licenses and authorizations are subject to a number of conditions

including, among other things, satisfaction of ongoing due diligence obligations, construction milestones, and various reporting requirements. Necessary federal approval of these applications may not be granted, may not be granted in a timely manner, or may be granted subject to conditions that may be cumbersome.

Overview of our DBS Satellites, Authorizations and Contractual Rights for Satellite Capacity. Our satellites are located in orbital positions, or slots, that are designated by their western longitude. An orbital position describes both a physical location and an assignment of spectrum in the applicable frequency band. Each DBS orbital position has 500 MHz of available Ku-band spectrum that is divided into 32 frequency channels. Several of our satellites also include spot-beam technology that enables us to increase the number of markets where we provide local channels, but reduces the number of video channels that could otherwise be offered across the entire United States.

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The FCC has licensed us to operate a total of 50 DBS frequency channels at the following orbital locations:

- 21 DBS frequency channels at the 119 degree orbital location, capable of providing service to the continental United States ("CONUS"); and
- 29 DBS frequency channels at the 110 degree orbital location, capable of providing service to CONUS.

In addition, we currently lease or have entered into agreements to lease capacity on satellites using the following spectrum at the following orbital locations:

- 500 MHz of Ku-band FSS spectrum that is divided into 32 frequency channels at the 118.7 degree orbital location, which is a Canadian FSS slot that is capable of providing service to CONUS, Alaska and Hawaii;
- 32 DBS frequency channels at the 129 degree orbital location, which is a Canadian DBS slot that is capable of providing service to most of the United States;
- 32 DBS frequency channels at the 61.5 degree orbital location, capable of providing service to most of the United States;
- 24 DBS frequency channels at the 77 degree orbital location, which is a Mexican DBS slot that is capable of providing service to most of the United States and Mexico; and
- 32 DBS frequency channels at the 72.7 degree orbital location, which is a Canadian DBS slot that is capable of providing service to CONUS.

We also have month-to-month FSS capacity available from EchoStar on a satellite located at the 121 degree orbital location.

Duration of our DBS Licenses. Generally speaking, all of our satellite licenses are subject to expiration unless renewed by the FCC. The term of each of our DBS licenses is ten years. Our licenses are currently set to expire at various times. In addition, at various times we have relied on special temporary authorizations for our operations. A special temporary authorization is granted for a period of only 180 days or less, subject again to possible renewal by the FCC. From time to time, we apply for authorizations to use new satellites at our existing orbital locations. Generally, our FCC licenses and special temporary authorizations have been renewed, and our applications for new satellites at our existing orbital locations have been approved, by the FCC on a routine basis, but there can be no assurance that the FCC will continue to do so.

Opposition and Other Risks to our Licenses. Several third parties have opposed in the past, and we expect these or other parties to oppose in the future, some of our FCC satellite authorizations and pending and future requests to the FCC for extensions, modifications, waivers and approvals of our licenses. In addition, we must comply with numerous FCC reporting, filing and other requirements in connection with our satellite authorizations. Consequently, it is possible the FCC could revoke, terminate, condition or decline to extend or renew certain of our authorizations or licenses.

4.5 Degree Spacing “Tweener” Satellites. The FCC has proposed to allow so-called “tweener” DBS operations – DBS satellites operating at orbital locations 4.5 degrees (half of the usual nine degrees) away from other DBS satellites. The FCC granted authorizations to EchoStar and Spectrum Five for tweener satellites at the 86.5 and 114.5 degree orbital locations, respectively. These authorizations were subsequently cancelled because the FCC determined that the licensees did not meet certain milestone requirements. Tweener operations close to our licensed orbital locations could cause harmful interference to our service and constrain our future operations. The FCC has not completed its 2006 rulemaking on the operating and service rules for tweener satellites. In November 2018, the FCC opened a new proceeding to consider proposed rules for tweener DBS operations, among other things. We cannot predict the timing or outcome of this proceeding.

Interference from Other Services Sharing Satellite Spectrum. The FCC has adopted rules that allow non-geostationary orbit (“NGSO”) FSS satellites to operate on a co-primary basis in the same frequency band as our DBS and geostationary orbit (“GSO”) FSS satellites. The FCC has also authorized the use of multichannel video distribution and data service (“MVDDS”) licenses in the DBS band. MVDDS licenses were auctioned in 2004. MVDDS systems have been commercially deployed in a few markets. We have MVDDS licenses in 82 out of 214 geographical license areas, including Los Angeles, New York City, Chicago and several other major metropolitan areas. Despite regulatory provisions intended to protect DBS and FSS operations from harmful interference, there can be no assurance that operations by other satellites or terrestrial communication services in the DBS and FSS bands will not interfere with our DBS and FSS operations and adversely affect our business.

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OneWeb LLC ("OneWeb") and others have obtained FCC authority to launch and operate, or provide service from, NGSO satellite systems using a variety of spectrum bands, including the 12.2-12.7 GHz band, which we use for our DBS service, and where we also have certain licenses to provide one-way terrestrial MVDDS service. If these systems are launched and put into operation, there can be no assurance that they will not interfere with our DBS operations and adversely affect our business or that they will not hinder our ability to provide MVDDS service.

Satellite Competition from Additional Slots and Interference. AT&T, through DirecTV, has obtained FCC authority to provide service to the United States from a Canadian DBS orbital slot, and EchoStar has obtained authority to provide service to the United States from both a Mexican and a Canadian DBS orbital slot. Further, we have also received authority to do the same from a Canadian DBS orbital slot at 129 degrees and a Canadian FSS orbital slot at 118.7 degrees. The possibility that the FCC will allow service to the United States from additional foreign slots may permit additional competition against us from other satellite providers. It may also provide a means by which to increase our available satellite capacity in the United States. In addition, a number of administrations, such as Great Britain and the Netherlands, have requested authority to add orbital locations serving the United States close to our licensed slots. Such operations could cause harmful interference to our satellites and constrain our future operations.

Rules Relating to Broadcast Services. The FCC imposes different rules for "subscription" and "broadcast" services. We believe that, because our DISH TV services offer a subscription programming service, we are not subject to many of the regulatory obligations imposed upon broadcast licensees. However, we cannot be certain whether the FCC will find in the future that we must comply with regulatory obligations as a broadcast licensee. If the FCC determines that we are a broadcast licensee, it could require us to comply with all regulatory obligations imposed upon broadcast licensees, which in certain respects are subject to more burdensome regulation than subscription television service providers.

Public Interest Requirements. The FCC imposes certain public interest obligations on our DBS licenses. These obligations require us to set aside four percent of our channel capacity exclusively for noncommercial programming for which we must charge programmers below-cost rates and for which we may not impose additional charges on subscribers. The Satellite Television Extension and Localism Act of 2010 ("STELA") required the FCC to decrease this set-aside to 3.5 percent for satellite carriers who provide retransmission of state public affairs networks in 15 states and are otherwise qualified. The FCC, however, has not yet determined whether we qualify for this decrease in set-aside. The obligation to provide noncommercial programming may displace programming for which we could earn commercial rates and could adversely affect our financial results. We cannot be sure that, if the FCC were to review our methodology for processing public interest carriage requests, computing the channel capacity we must set aside or determining the rates that we charge public interest programmers, it would find them in compliance with the public interest requirements.

Separate Security, Plug and Play. The STELA Reauthorization Act of 2014 ("STELAR") ended the "integration ban" that required cable companies to separate security functionality from the other features of their set-top boxes and that required leased cable set-top boxes to include CableCARDs effective December 2015. Set-top boxes used by DBS providers were not subject to this separate security requirement. STELAR required the FCC to establish a working group of technical experts to identify and report on downloadable security design options that are not unduly

burdensome and that promote competition with respect to the availability of navigation devices. The working group released a report in August 2015, which declined to offer a consensus recommendation regarding downloadable security design options. However, we cannot predict whether the FCC will take further action regarding downloadable security. Also, the FCC adopted the so-called "plug and play" standard for compatibility between digital television sets and cable systems. That standard was developed through negotiations involving the cable and consumer electronics industries, but not the satellite television industry. The FCC's adoption of the standard was accompanied by certain rules regarding copy protection measures that were applicable to us. We appealed the FCC's decision regarding the copy protection measures to the United States Court of Appeals for the D.C. Circuit ("D.C. Circuit") and on January 15, 2013 the D.C. Circuit vacated the FCC's decision. The FCC is also considering various proposals to establish two-way digital cable "plug and play" rules. That proceeding also asks about means to incorporate all pay-TV providers into its "plug and play" rules. The cable industry and consumer electronics companies have reached a "tru2way" commercial arrangement to resolve many of the outstanding issues in this docket. We cannot predict whether the FCC will impose rules on our DBS operations that are based on cable system architectures or the private cable/consumer electronics tru2way commercial arrangement. Complying with the separate security and other "plug and play" requirements may not be technically feasible or may require potentially costly modifications to our set-top boxes and operations. We cannot predict the timing or outcome of this FCC proceeding.

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In 2016, the FCC adopted a Notice of Proposed Rulemaking regarding possible new regulations that would generally require pay-TV providers, among others, to make their video services operate on third-party devices. Under the FCC's proposal, consumers would have the choice of accessing cable and satellite programming through the pay-TV operator's products and services, or through products and services offered by a third party. These regulations, if adopted, would have the potential to impose new costs on our DISH TV business by, among other things, requiring us to deploy additional hardware or software to enable our DISH TV services to operate with third-party devices. In February 2017, the FCC closed this rulemaking proceeding and no regulations were adopted. However, we cannot be certain that the FCC will not open a new proceeding in the future to pursue similar regulations.

Retransmission Consent. The Copyright Act generally gives satellite companies a statutory copyright license to retransmit local broadcast channels by satellite back into the market from which they originated, subject to obtaining the retransmission consent of local network stations that do not elect "must carry" status, as required by the Communications Act. If we fail to reach retransmission consent agreements with such broadcasters, we cannot carry their signals. This could have an adverse effect on our strategy to compete with cable and other satellite companies that provide local signals. While we have been able to reach retransmission consent agreements with most of these local network stations, from time to time there are stations with which we have not been able to reach an agreement. We cannot be sure that we will secure these agreements or that we will secure new agreements on acceptable terms, or at all, upon the expiration of our current retransmission consent agreements, some of which are short-term. In recent years, national broadcasters have used their ownership of certain local broadcast stations to require us to carry additional cable programming in exchange for retransmission consent of their local broadcast stations. These requirements may place constraints on available capacity on our satellites for other programming. Furthermore, the rates we are charged for retransmitting local channels have been increasing substantially and may exceed our ability to increase our prices to our customers, which could have a material adverse effect on our business, financial condition and results of operations. In addition, the broadcast stations' demands for higher rates have resulted in more frequent negotiating impasses and programming interruptions. During these programming interruptions, our subscribers in the affected markets lack access to popular programming and may switch to another multichannel distributor that may be able to provide them with such programming.

In 2015, the FCC commenced a rulemaking proceeding as required by STELAR to review its "totality of circumstances" test for ensuring that television stations and MVPDs negotiate retransmission consent agreements in "good faith." In 2016, the Chairman of the FCC announced that the FCC would not proceed at that time to adopt additional rules governing good faith negotiations for retransmission consent. STELAR prohibits television stations from coordinating or engaging in joint retransmission consent negotiations with any other local television stations, unless the stations are "directly or indirectly under common de jure control," expanding a previous FCC ruling prohibiting joint negotiations only among the top four stations in a market. In addition, STELAR prohibits a local television station from limiting an MVPD's ability to carry other television signals that have been deemed by the FCC to be "significantly viewed" or to carry any other television signal the MVPD is otherwise entitled to carry under the Communications Act, unless such stations are "directly or indirectly under common de jure control" pursuant to FCC regulations. We cannot predict if these restrictions on broadcasters will result in more effective retransmission consent negotiations.

ATSC 3.0. In April 2016, the broadcast industry petitioned the FCC to authorize the use of the "Next Generation TV" broadcast television standard, ATSC 3.0. In November 2017, the FCC authorized television broadcasters to deploy the ATSC 3.0 standard on a voluntary basis. We cannot predict the effect that supporting this new standard could

have on equipment costs, carriage obligations or the retransmission consent process.

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Media Ownership Rules. Also in 2016, the broadcast industry petitioned the FCC to relax its media ownership rules, which, among other things, limit the number of commonly owned TV stations per market and restrict newspaper/broadcast cross-ownership and radio/TV cross-ownership. In November 2017, the FCC voted to: (i) eliminate the newspaper/broadcast cross-ownership rule; (ii) eliminate the radio/television cross-ownership rule; (iii) relax the local television ownership rules to eliminate certain restrictions and modify others; and (iv) eliminate the attribution rule for television joint-sales agreements. In December 2017, the FCC initiated a rulemaking proceeding seeking comment on changes to the national television multiple-ownership rule, including changes that could relax or eliminate the current limits that prevent entities from owning or controlling television stations that, in the aggregate, reach more than 39 percent of the television households in the country. If the FCC were to relax or eliminate some or all of the national television multiple-ownership rule, it could increase the negotiating leverage that broadcasters hold in retransmission consent negotiations. In December 2018, the FCC initiated a rulemaking proceeding to commence its periodic review of media ownership rules. We cannot predict whether the FCC will further change any of its media ownership rules or the effect that any changes to the media ownership rules could have on our future retransmission consent negotiations.

Digital HD Carry-One, Carry-All Requirement. To provide any full-power local broadcast signal in any market, we are required to retransmit all qualifying broadcast signals in that market ("carry-one, carry-all"), including the carriage of full-power broadcasters' HD signals in markets in which we elect to provide local channels in HD. The carriage of additional HD signals on our DISH TV services could cause us to experience significant capacity constraints and prevent us from carrying additional popular national channels and/or carrying those national channels in HD.

Distant Signals. Pursuant to STELA, we obtained a waiver of a court injunction that previously prevented us from retransmitting certain distant network signals under a statutory copyright license. Because of that waiver, we may provide distant network signals to eligible subscribers. To qualify for that waiver, we are required to provide local service in all 210 local markets in the United States on an ongoing basis. This condition poses a significant strain on our capacity. Moreover, we may lose that waiver if we are found to have failed to provide local service in any of the 210 local markets. If we lose the waiver, the injunction could be reinstated. Furthermore, depending on the severity of the failure, we may also be subject to other sanctions, which may include, among other things, damages.

Cable Act and Program Access. We purchase a large percentage of our programming from cable-affiliated programmers. Pursuant to the Cable Act, cable providers had been prohibited from entering into exclusive contracts with cable-affiliated programmers. The Cable Act directed that this prohibition expire after a certain period of time unless the FCC determined that the prohibition continued to be necessary. On October 5, 2012, the FCC allowed this prohibition to expire. While the FCC has issued a Further Notice of Proposed Rulemaking aimed at serving some of the same objectives as the prohibition, there can be no assurances that such protections will be adopted or be as effective as the prohibition if they are adopted. In the event that this decision is reconsidered by the FCC or reviewed by a court of appeals, we cannot predict the timing or outcome of any subsequent FCC decision.

As a result of the expiration of this prohibition on exclusivity, we may be limited in our ability to obtain access at all, or on nondiscriminatory terms, to programming from programmers that are affiliated with cable system operators. In addition, any other changes in the Cable Act, and/or the FCC's rules that implement the Cable Act, that currently limit

the ability of cable-affiliated programmers to discriminate against competing businesses such as ours, could adversely affect our ability to acquire cable-affiliated programming at all or to acquire programming on nondiscriminatory terms.

Furthermore, the FCC had imposed program access conditions on certain cable companies as a result of mergers, consolidations or affiliations with programmers. The expiration of the exclusivity prohibition in the Cable Act triggered the termination of certain program access conditions that the FCC had imposed on Liberty Media Corporation ("Liberty"). In July 2012, similar program access conditions that had applied to Time Warner Cable Inc. ("Time Warner Cable"), which was acquired by Charter in 2016, expired as previously scheduled. These developments may adversely affect our ability to obtain Liberty's and Charter's programming, or to obtain it on nondiscriminatory terms. In the case of certain types of programming affiliated with Comcast through its control of NBCUniversal Media, LLC ("NBCUniversal"), the prohibition on exclusivity expired in January 2018, and we can no longer rely on these protections. We cannot predict the practical effect of the expiration of these conditions which could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

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In addition, affiliates of certain cable providers have denied us access to sports programming that they supply to their cable systems terrestrially, rather than by satellite. The FCC has held that new denials of such service are unfair if they have the purpose or effect of significantly hindering us from providing programming to consumers. However, we cannot be sure that we can prevail in a complaint related to such programming and gain access to it. Our continuing failure to access such programming could materially and adversely affect our ability to compete in regions serviced by these cable providers.

MDU Exclusivity. The FCC has found that cable companies should not be permitted to have exclusive relationships with multiple dwelling units (e.g., apartment buildings). In May 2009, the D.C. Circuit upheld the FCC's decision. While the FCC requested comments in November 2007 on whether DBS and Private Cable Operators should be prohibited from having similar relationships with multiple dwelling units, it has yet to make a formal decision. If the cable exclusivity ban were to be extended to DBS providers, our ability to serve these types of buildings and communities would be adversely affected. We cannot predict the timing or outcome of the FCC's consideration of this proposal.

Open Internet (also known as "Net Neutrality"). In 2015, the FCC adopted Open Internet rules, which applied to both fixed and mobile broadband access providers and prohibited them, among other things, from blocking or throttling traffic, from paid prioritization, and from unreasonably interfering with, or disadvantaging, consumers' or content providers' access to the Internet. In addition, because the FCC reclassified broadband access providers as common carriers, these providers were subject to the general common carrier requirements of reasonableness and nondiscrimination. The rules were affirmed by a panel of the D.C. Circuit. A number of broadband access providers and their associations have filed a petition for certiorari with the United States Supreme Court. In December 2017, the FCC reversed course and voted to reclassify broadband access providers as information service providers, instead of common carriers. The FCC also voted to eliminate the majority of the Open Internet rules, leaving only certain ISP transparency requirements in place. The FCC's decision is being challenged by various parties. We cannot predict the outcome or timing of these proceedings or how the FCC will implement and enforce the remaining Open Internet rules.

To the extent that network operators implement usage based pricing, including meaningful bandwidth caps, or otherwise try to monetize access to their networks by data providers, we could incur greater operating expenses and our Sling TV subscriber count could be negatively impacted. Furthermore, to the extent network operators create tiers of Internet access service and either charge us for or prohibit us from being available through these tiers, our Sling TV business could be negatively impacted. We cannot predict with any certainty the impact to our Sling TV business resulting from changes in how network operators handle and charge for access to data that travels across their networks.

Charter/Time Warner Cable. In May 2016, the FCC and the Department of Justice approved a merger transaction between Charter, Time Warner Cable, and Advance/Newhouse Partnership. The FCC conditioned its approval on, among other things, Charter not imposing data caps or usage-based pricing for its residential broadband service and a requirement that Charter provide settlement-free interconnection. These conditions last for seven years, with Charter having the option after four years to petition to shorten the term to five years. It is uncertain how these conditions

may be interpreted or enforced by the FCC; therefore, we cannot predict the practical effect of these conditions. In addition, as these conditions are currently set to expire in 2023, we will not be able to rely on these protections beyond that date.

Definition of MVPD. In December 2014, the FCC issued a Notice of Proposed Rulemaking regarding the definition of an MVPD. Among other things, the FCC is considering whether the definition of an MVPD should apply to Internet-based streaming services, thus making such services subject to the same regulations as an MVPD. The FCC is also considering the appropriate treatment of purely Internet-based linear video programming services that cable operators and DBS providers offer in addition to their traditional video services. We cannot predict the timing or outcome of this rulemaking process.

T-Mobile/Sprint. In April 2018, T-Mobile US, Inc. (“T Mobile”) announced its acquisition of Sprint Corporation (“Sprint”). We filed a petition to deny the transaction with the FCC. We cannot predict the practical effect of the impact on us of T-Mobile’s acquisition of Sprint (if approved), including without limitation, the impact of any conditions on us (if any conditions are imposed). However, it is possible that the outcomes resulting from this acquisition (if approved, with or without conditions) could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

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FCC Regulation of Wireless Spectrum

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below.

DISH Network Spectrum

We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets.

700 MHz Licenses. In 2008, we paid $712 million to acquire certain 700 MHz E Block ("700 MHz") wireless spectrum licenses, which were granted to us by the FCC in February 2009. These licenses are subject to certain build-out requirements. By March 2020, we must provide signal coverage and offer service to at least 70% of the population in each of our E Block license areas (the "700 MHz Build-Out Requirement"). If the 700 MHz Build-Out Requirement is not met with respect to any particular E Block license area, our authorization may terminate for the geographic portion of that license area in which we are not providing service. In addition to the 700 MHz Build-Out Requirement deadline in March 2020, these wireless spectrum licenses also expire in March 2020 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

AWS-4 Licenses. On March 2, 2012, the FCC approved the transfer of 40 MHz of wireless spectrum licenses held by DBSD North America, Inc. ("DBSD North America") and TerreStar Networks, Inc. ("TerreStar") to us. On March 9, 2012, we completed the acquisition of 100% of the equity of reorganized DBSD North America (the "DBSD Transaction") and substantially all of the assets of TerreStar (the "TerreStar Transaction"), pursuant to which we acquired, among other things, certain satellite assets and wireless spectrum licenses held by DBSD North America and TerreStar. The total consideration to acquire the DBSD North America and TerreStar assets was approximately $2.860 billion.

On February 15, 2013, the FCC issued an order, which became effective on March 7, 2013, modifying our licenses to expand our terrestrial operating authority with AWS-4 authority ("AWS-4"). These licenses are subject to certain build-out requirements. By March 2020, we are required to provide terrestrial signal coverage and offer terrestrial service to at least 70% of the population in each area covered by an individual license (the "AWS-4 Build-Out Requirement"). If the AWS-4 Build-Out Requirement is not met with respect to any particular individual license, our terrestrial authorization for that license area may terminate. The FCC's December 20, 2013 order also conditionally waived certain FCC rules for our AWS-4 licenses to allow us to repurpose all 20 MHz of our uplink spectrum (2000-2020 MHz) for terrestrial downlink operations. On June 1, 2016, we notified the FCC that we had elected to use our AWS-4 uplink spectrum for terrestrial downlink operations, and effective June 7, 2016, the FCC modified our AWS-4 licenses, resulting in all 40 MHz of our AWS-4 spectrum being designated for terrestrial downlink

operations. These wireless spectrum licenses expire in March 2023 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

H Block Licenses. On April 29, 2014, the FCC issued an order granting our application to acquire all 176 wireless spectrum licenses in the H Block auction. We paid approximately $1.672 billion to acquire these H Block licenses, including clearance costs associated with the lower H Block spectrum. The H Block licenses are subject to certain build-out requirements. By April 2022, we must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual H Block license (the "H Block Build-Out Requirement"). If the H Block Build-Out Requirement is not met, our authorization for each H Block license area in which we do not meet the requirement may terminate. These wireless spectrum licenses expire in April 2024 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

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600 MHz Licenses. The broadcast incentive auction in the 600 MHz frequency range ("Auction 1000") began on March 29, 2016 and concluded on March 30, 2017. On April 13, 2017, the FCC announced that ParkerB.com Wireless L.L.C. ("ParkerB.com"), a wholly-owned subsidiary of DISH Network, was the winning bidder for 486 wireless spectrum licenses (the "600 MHz Licenses") with aggregate winning bids totaling approximately $6.211 billion. On April 27, 2017, ParkerB.com filed an application with the FCC to acquire the 600 MHz Licenses. On July 1, 2016, we paid $1.5 billion to the FCC as a deposit for Auction 1000. On May 11, 2017, we paid the remaining balance of our winning bids of approximately $4.711 billion. On June 14, 2017, the FCC issued an order granting ParkerB.com's application to acquire the 600 MHz Licenses.

The 600 MHz Licenses are subject to certain interim and final build-out requirements. By June 2023, we must provide reliable signal coverage and offer wireless service to at least 40% of the population in each area covered by an individual 600 MHz License (the "600 MHz Interim Build-Out Requirement"). By June 2029, we must provide reliable signal coverage and offer wireless service to at least 75% of the population in each area covered by an individual 600 MHz License (the "600 MHz Final Build-Out Requirement"). If the 600 MHz Interim Build-Out Requirement is not met, the 600 MHz License term and the 600 MHz Final Build-Out Requirement may be accelerated by two years (from June 2029 to June 2027) for each 600 MHz License area in which we do not meet the requirement. If the 600 MHz Final Build-Out Requirement is not met, our authorization for each 600 MHz License area in which we do not meet the requirement may terminate. In addition, certain broadcasters will have up to 39 months (ending July 13, 2020) to relinquish their 600 MHz spectrum, which may impact the timing for our ability to commence operations using certain 600 MHz Licenses. The FCC has issued the 600 MHz Licenses prior to the clearance of the spectrum, and the build-out deadlines are based on the date that the 600 MHz Licenses were issued to us, not the date that the spectrum is cleared. These wireless spectrum licenses expire in June 2029 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

MVDDS Licenses. We have MVDDS licenses in 82 out of 214 geographical license areas, including Los Angeles, New York City, Chicago and several other major metropolitan areas. By August 2014, we were required to meet certain FCC build-out requirements related to our MVDDS licenses, and we are subject to certain FCC service rules applicable to these licenses. In January 2015, the FCC granted our application to extend the build-out requirements related to our MVDDS licenses. We now have until the third quarter 2019 to provide "substantial service" on our MVDDS licenses. Our MVDDS licenses may be terminated if we do not provide substantial service in accordance with the new build-out requirements. These wireless spectrum licenses expire in August 2024 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

In 2016, the MVDDS 5G Coalition, of which we are a member, filed a petition for rulemaking requesting the FCC to consider updating the rules to allow us to provide two-way 5G services using our MVDDS licenses. We cannot predict when or if the FCC will grant the petition and proceed with a rulemaking. If the FCC adopts rules that would allow us to provide two-way 5G services using our MVDDS licenses, the requests of OneWeb and others for authority to use the band for service from NGSO satellite systems may hinder our ability to provide 5G services using our MVDDS licenses.

LMDS Licenses. As a result of the completion of the Share Exchange on February 28, 2017, we acquired from EchoStar certain Local Multipoint Distribution Service ("LMDS") licenses in four markets: Cheyenne, Kansas City, Phoenix, and San Diego. The "substantial service" milestone has been met with respect to each of the licenses. In addition, through the FCC's Spectrum Frontiers proceeding, a portion of each of our LMDS licenses were reassigned to the Upper Microwave Flexible Use Service band (27.5-28.35 GHz), which will allow for a more flexible use of the licenses, including, among other things, 5G mobile operations. These wireless spectrum licenses have been renewed by the FCC through September 2028. There can be no assurances that the FCC will renew these wireless spectrum licenses.

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DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American II and American III, we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, the parent company of Northstar Wireless, and in SNR HoldCo, the parent company of SNR Wireless, respectively. On October 27, 2015, the FCC granted certain AWS-3 Licenses to Northstar Wireless and to SNR Wireless, respectively, which are recorded in "FCC authorizations" on our Consolidated Balance Sheets. The AWS-3 Licenses are subject to certain interim and final build-out requirements. By October 2021, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 40% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Interim Build-Out Requirement"). By October 2027, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Final Build-Out Requirement"). If the AWS-3 Interim Build-Out Requirement is not met, the AWS-3 License term and the AWS-3 Final Build-Out Requirement may be accelerated by two years (from October 2027 to October 2025) for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement. If the AWS-3 Final Build-Out Requirement is not met, the authorization for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement may terminate. These wireless spectrum licenses expire in October 2027 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

See "Item 1A. Risk Factors – Acquisition and Capital Structure Risks – We face certain risks related to our non-controlling investments in the Northstar Entities and the SNR Entities, which may have a material adverse effect on our business, results of operations and financial condition" in this Annual Report on Form 10-K for further information.

State and Local Regulation

We are also regulated by state and local authorities. While the FCC has preempted many state and local regulations that impair the installation and use of towers and consumer satellite dishes, our business nonetheless may be subject to state and local regulation, including, among others, zoning regulations that affect the ability to install consumer satellite antennas or build out wireless telecommunications networks.

International Regulation

We are subject to regulation by the International Telecommunication Union ("ITU"). The orbital location and frequencies for certain of our satellites are subject to the frequency registration and coordination process of the ITU. The ITU Radio Regulations define the international rules, regulations, and rights for a satellite and associated

earth stations to use specific radio frequencies at a specific orbital location. These rules, which include deadlines for the bringing of satellite networks into use, differ depending on the type of service to be provided and the frequencies to be used by the satellite. On our behalf, various countries have made and may in the future make additional filings for the frequency assignments at particular orbital locations that are used or to be used by our current satellite networks and potential future satellite networks we may build or acquire.

Our satellite services also must conform to the ITU service plans for Region 2 (which includes the United States). If any of our operations are not consistent with this plan, the ITU will only provide authorization on a non-interference basis pending successful modification of the plan or the agreement of all affected administrations to the non-conforming operations. Certain of our satellites are not presently entitled to any interference protection from other satellites that are in conformance with the plan. Accordingly, unless and until the ITU modifies its service plans to include the technical parameters of our non-conforming operations, our non-conforming satellites, along with those of other non-conforming satellite operators, must not cause harmful electrical interference with other assignments that are in conformance with the ITU service plans.

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Registration in the UN Registry of Space Objects

The United States and other jurisdictions in which we license satellites are parties to the United Nations ("UN") Convention on the Registration of Objects Launched into Outer Space. The UN Convention requires a satellite's launching state to register the satellite as a space object with an UN Registry of Space Objects. The act of registration carries liability for the registering country in the event that the satellite causes third-party damage. Administrations may place certain requirements on satellite licensees in order to procure the necessary launch or operational authorizations that accompany registration of the satellite. In some jurisdictions, these authorizations are separate and distinct, with unique requirements, from the authorization to use a set of frequencies to provide satellite services. There is no guarantee that we will be able to procure such authorizations even if we already possess a frequency authorization.

Export Control Regulation

The delivery of satellites and related technical information for purposes of launch by foreign launch service providers is subject to export control and prior approval requirements. We are required to obtain import and export licenses from the United States government to receive and deliver certain components of direct-to-home satellite television systems. In addition, the delivery of satellites and the supply of certain related ground control equipment, technical services and data, and satellite communication/control services to destinations outside the United States are subject to export control and prior approval requirements from the United States government (including prohibitions on the sharing of certain satellite-related goods and services with China).

PATENTS AND OTHER INTELLECTUAL PROPERTY

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 that we offer or that we may offer in the future. In general, if a court determines that one or more of our products or services infringe 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 rights at a material cost, or to redesign those products or services in such a way as to avoid infringing any patent claims. If those intellectual property rights are held by a competitor, we may be unable to obtain the intellectual property rights at any price, which could adversely affect our competitive position.

We may not be aware of all intellectual property rights that our products or services may potentially infringe. In addition, patent applications in the United States are confidential until the Patent and Trademark Office 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 claim of infringement is valid 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 intellectual property licenses or 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 are currently defending multiple patent infringement actions. We cannot be certain the courts will conclude these companies do not own the rights they claim, that our products do not infringe on these rights and/or that these rights are not valid. Further, we cannot be certain that we would 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 to avoid infringement.

ENVIRONMENTAL REGULATIONS

We are subject to the requirements of federal, state, local and foreign environmental and occupational safety and health laws and regulations. These include laws regulating air emissions, water discharge and waste management. We attempt to maintain compliance with all such requirements. We do not expect capital or other expenditures for environmental compliance to be material in 2019 or 2020. Environmental requirements are complex, change frequently and have become more stringent over time. Accordingly, we cannot provide assurance that these requirements will not change or become more stringent in the future in a manner that could have a material adverse effect on our business.

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SEGMENT REPORTING DATA AND GEOGRAPHIC AREA DATA

For segment reporting data and principal geographic area data for 2018, 2017 and 2016, see Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K.

EMPLOYEES

We had approximately 16,000 employees at December 31, 2018, most of whom were located in the United States. We generally consider relations with our employees to be good. Approximately 60 employees in two of our field offices have voted to have a union represent them in their employment relations with DISH Network. While we are not currently a party to any collective bargaining agreements, we are presently in the negotiating phase with the union, which could result in a collective bargaining agreement with respect to these two sites.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act and accordingly file our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information with the SEC. As an electronic filer, our public filings are also maintained on the SEC's Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that website is http://www.sec.gov.

WEBSITE ACCESS

Our annual reports on 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 Exchange Act also may be accessed free of charge through our website as soon as reasonably practicable after we have electronically filed such material with, or furnished it to, the SEC. The address of that website is http://www.dish.com.

We have adopted a written code of ethics that applies to all of our directors, officers and employees, including our principal executive officer and senior financial officers, in accordance with Section 406 of the Sarbanes-Oxley Act of 2002 and the rules of the SEC promulgated thereunder. Our code of ethics is available on our corporate website at http://www.dish.com. In the event that we make changes in, or provide waivers of, the provisions of this code of ethics that the SEC requires us to disclose, we intend to disclose these events on our website.

EXECUTIVE OFFICERS OF THE REGISTRANT

(furnished in accordance with Item 401(b) of Regulation S-K, pursuant to General Instruction G(3) of Form 10-K)

The following table and information below sets forth the name, age and position with DISH Network of each of our executive officers, the period during which each executive officer has served as such, and each executive officer's business experience during the past five years:

Name	Age	Position
Charles W. Ergen	65	Chairman and Director
W. Erik Carlson	49	President and Chief Executive Officer
Thomas A. Cullen	59	Executive Vice President, Corporate Development
James DeFranco	65	Executive Vice President and Director
Timothy A. Messner	44	Executive Vice President and General Counsel
Jeffrey L. McSchooler	52	Executive Vice President, Wireless Operations
Brian V. Neylon	53	Executive Vice President, Group President, DISH TV
Paul W. Orban	50	Senior Vice President, Chief Accounting Officer and Principal Financial Officer
Warren W. Schlichting	57	Executive Vice President, Group President, Sling TV
David A. Scott	45	Executive Vice President and Chief Human Resources Officer
John W. Swieringa	41	Executive Vice President, Chief Operating Officer

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Charles W. Ergen. Mr. Ergen is our executive Chairman and has been Chairman of the Board of Directors of DISH Network since its formation and, during the past five years, has held executive officer and director positions with DISH Network and its subsidiaries. Mr. Ergen also serves as executive Chairman and Chairman of the Board of Directors of EchoStar. Mr. Ergen co-founded DISH Network with his future spouse, Cantey Ergen, and James DeFranco, in 1980.

W. Erik Carlson. Mr. Carlson has served as DISH Network's President and Chief Executive Officer since December 2017 and oversees all aspects of the company's DISH TV and Sling TV businesses. Mr. Carlson is a DISH Network veteran of more than two decades, and has held numerous roles throughout the company. Most recently, Mr. Carlson served as President and Chief Operating Officer. In this role, Mr. Carlson oversaw the company's day-to-day operations including Human Resources, Operations and Information Technology, Media Sales, Marketing, Programming, Product Management, Acquisition and Retention, and Finance and Accounting organizations. Prior to that, Mr. Carlson managed DISH Network's In-Home Services, Customer Service Centers, Customer Billing, and Information Technology organizations, as well as Manufacturing, which consists of equipment retrieval and refurbishment operations. Mr. Carlson also served as Senior Vice President of Retail Services and Sales where he managed the company's indirect sales operations.

Thomas A. Cullen. Mr. Cullen has served as Executive Vice President, Corporate Development for DISH Network since July 2011. Mr. Cullen previously served as our Executive Vice President, Sales, Marketing and Programming from April 2009 to July 2011 and as our Executive Vice President, Corporate Development from December 2006 to April 2009. Before joining DISH Network, Mr. Cullen held various executive positions in the telecommunications, cable and wireless industries.

James DeFranco. Mr. DeFranco is one of our Executive Vice Presidents and has been one of our vice presidents and a member of the Board of Directors of DISH Network since our formation. During the past five years he has held various executive officer and director positions with our subsidiaries. Mr. DeFranco co-founded DISH Network with Charles W. Ergen and Cantey Ergen, in 1980.

Jeffrey L. McSchooler. Mr. McSchooler has served as Executive Vice President, Wireless Operations since October 2018 and is responsible for the physical construction and operation of the DISH Network wireless network. Mr. McSchooler previously served as our Executive Vice President, Engineering and Broadcast from March 2017 to October 2018 and Senior Vice President of Engineering and Operations for EchoStar from May 2010 to February 2017. Mr. McSchooler joined DISH Network in 1994 and has held various roles of increasing responsibility at DISH Network and EchoStar. Before joining DISH Network, Mr. McSchooler held various positions at GTE Spacenet Corporation, ElectroSpace Systems Inc. and the United States Air Force.

Timothy A. Messner. Mr. Messner has served as Executive Vice President, General Counsel since November 2017 and is responsible for all legal affairs for DISH Network and its subsidiaries. Since joining DISH Network in August 2004, Mr. Messner has held various positions of increasing responsibility in DISH Network's legal

department. Most recently, Mr. Messner served as Senior Vice President and Deputy General Counsel for DISH Network.

Brian V. Neylon. Mr. Neylon has served as Executive Vice President, Group President, DISH TV since December 2017 and oversees all aspects of the DISH TV services. Mr. Neylon served as Executive Vice President, Customer Acquisition and Retention from December 2015 to December 2017 and as our Senior Vice President of Sales from June 2011 to December 2015. Since first joining DISH Network in September 1991, he has held various positions of increasing responsibility within various sales and distribution teams from time to time.

Paul W. Orban. Mr. Orban has served as Senior Vice President and Chief Accounting Officer since December 2015 and Principal Financial Officer since August 2018 and is responsible for all aspects of our accounting and tax departments including external financial reporting, technical accounting policy, income tax accounting and compliance and internal controls for DISH Network. Mr. Orban served as our Senior Vice President and Corporate Controller from September 2006 to December 2015 and as our Vice President and Corporate Controller from September 2003 to September 2006. He also served as EchoStar's Senior Vice President and Corporate Controller from 2008 to 2012 pursuant to a management services agreement between DISH Network and EchoStar. Since joining DISH Network in 1996, Mr. Orban has held various positions of increasing responsibility in our accounting department. Prior to DISH Network, Mr. Orban was an auditor with Arthur Andersen LLP.

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Warren W. Schlichting. Mr. Schlichting has served as Executive Vice President, Group President, Sling TV since December 2017 and oversees all aspects of the Sling TV services. Mr. Schlichting served as Executive Vice President, Marketing, Programming, and Media Sales for DISH Network from December 2015 to December 2017 and was responsible for the acquisition and renewal of all programming content, marketing for our DISH TV business and the advertising sales division. Mr. Schlichting previously served as our Senior Vice President of Programming and Media Sales from October 2014 to December 2015. Mr. Schlichting joined DISH Network in September 2011 as Senior Vice President of Media Sales. Prior to DISH Network, Mr. Schlichting served as Senior Vice President of New Business Development for Comcast from August 2002 to September 2011, leading advanced advertising efforts on multiple media and ad delivery platforms including broadband, interactive television and video-on-demand.

David A. Scott. Mr. Scott has served as Executive Vice President and Chief Human Resources Officer of DISH Network since February 2018 and is responsible for the recruiting, benefits administration, compensation, and leadership and organizational development for DISH Network and its subsidiaries. Prior to DISH Network, Mr. Scott held various positions at Walmart Inc. from 1997 to 2018, including, among others, Senior Vice President, Talent and Organizational Effectiveness from 2016 to 2018, Senior Vice President, Human Resources from 2014 to 2016, and Vice President, Human Resources from 2011 to 2014.

John W. Swieringa. Mr. Swieringa has served as DISH Network's Executive Vice President and Chief Operating Officer since December 2017. Mr. Swieringa previously served as Executive Vice President, Operations since December 2015 and has had responsibility for the in-home services operations, customer service and billing, information technology, manufacturing and distribution for DISH Network. Mr. Swieringa previously served as Senior Vice President and Chief Information Officer from March 2014 to December 2015 and as Vice President of Information Technology Customer Applications from March 2010 to March 2014. Mr. Swieringa joined DISH Network in December 2007 serving in our finance department.

There are no arrangements or understandings between any executive officer and any other person pursuant to which any executive officer was selected as such. Pursuant to the Bylaws of DISH Network, executive officers serve at the discretion of the Board of Directors.

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 or results of operations could be materially and adversely affected.

Competition and Economic Risks

As the pay-TV industry has matured and bundled offers combining video, broadband and/or wireless services have become more prevalent and competitive, we face intense and increasing competition from providers of video, broadband and/or wireless services, which may require us to further increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn.

Our business has historically focused on providing pay-TV services and we have traditionally competed against satellite television providers and cable companies, many of whom have greater financial, marketing and other resources than we do. In recent years, industries have been converging as providers of video, broadband and wireless services compete to deliver the next generation of service offerings. The pay-TV industry has matured and bundled offers combining video, broadband and/or wireless services have become more prevalent and competitive. In some cases, certain competitors have been able to potentially subsidize the price of video services with the price of broadband and/or wireless services. These developments, among others, have contributed to intense and increasing competition, which we expect to continue.

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With respect to our DISH TV services, we and our competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of pay-TV services. In addition, because other pay-TV providers may be seeking to attract a greater proportion of their new subscribers from our existing subscriber base, we are required to increase retention spending and/or provide greater discounts or credits to acquire and retain subscribers who may spend less on our services. If our Pay-TV average monthly revenue per subscriber ("Pay-TV ARPU") decreases or does not increase commensurate with increases in programming or other costs, our margins may be reduced and the long-term value of a subscriber would then decrease. In addition, our Sling TV subscribers on average purchase lower priced programming services than DISH TV subscribers. Accordingly, an increase in Sling TV subscribers has a negative impact on our Pay-TV ARPU.

This increasingly competitive environment may require us to increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn. Further, as a result of this increased competitive environment and the maturation of the pay-TV industry, future growth opportunities of our DISH TV business may be limited and our margins may be reduced, which could have a material adverse effect on our business, results of operations, financial condition and cash flow. Our gross new DISH TV subscriber activations continue to be negatively impacted by stricter customer acquisition policies (including a focus on attaining higher quality subscribers) and increased competitive pressures, including aggressive marketing, more aggressive retention efforts, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers.

In addition, MVPDs and other companies such as programmers are offering smaller packages of programming channels directly to customers, at prices lower than our video service package offerings. These offerings could adversely affect demand for our Pay-TV services or cause us to modify our programming packages, which may reduce our margins.

Moreover, mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others may result in, among other things, greater scale and financial leverage and increase the availability of offerings from providers capable of bundling video, broadband and/or wireless services in competition with our services, and may exacerbate the risks described above. For example, in May 2016, Charter completed its acquisition of Time Warner Cable and Bright House Networks (collectively "New Charter"), which created the second largest cable television provider and third largest MPVD in the United States. This transaction created a duopoly, resulting in two broadband providers, New Charter and Comcast, controlling the geographic areas covering the vast majority of the high-speed broadband homes in the country. In addition, a significant proportion of New Charter's high-speed broadband subscribers may lack access to alternative high-speed broadband options. Further, New Charter may be able to, among other things, foreclose or degrade our online video offerings at various points in the broadband pipe; impose data caps on consumers who access our online video offerings; and pressure third-party content owners and programmers to withhold online rights from us and raise our and other MVPDs' third-party programming costs.

As a result of AT&T's 2015 acquisition of DirecTV, our direct competitor and the largest satellite TV provider in the United States now has increased access to capital, access to AT&T's nationwide platform for wireless mobile video, and the ability to more seamlessly bundle its video services with AT&T's broadband Internet access and wireless

services. AT&T also has an OTT service, DirecTV Now, that distributes video directly to consumers over the Internet. The combined company may also be able to, among other things, utilize its increased leverage over third-party content owners and programmers to withhold online rights from us and reduce the price it pays for programming at the expense of other MVPDs, including us; thwart our entry into the wireless market, by, among other things, refusing to enter into data roaming agreements with us; underutilize key orbital spectrum resources that could be more efficiently used by us; foreclose or degrade our online video offerings at various points in the broadband pipe; and impose data caps on consumers who access our online video offerings.

In October 2016, AT&T announced its acquisition of Time Warner (which owns certain Turner, HBO and Cinemax channels), which was completed in June 2018. With the completion of this transaction, the risks discussed above posed by the AT&T and DirecTV merger will be further exacerbated, as the addition of Time Warner's media holdings, which include content, such as HBO, TBS, TNT, CNN, and movies, would, among other things, provide the combined company increased scale and leverage in the converging video, mobile, and broadband industries and may make it more difficult for us to obtain access to Time Warner's programming networks on nondiscriminatory and fair terms, or at all.

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For example, in October 2018, AT&T removed its HBO and Cinemax channels from our DISH TV and Sling TV programming lineup, as we and AT&T have been unable to negotiate the terms and conditions of a new programming carriage contract. Furthermore, AT&T offers its programming, including its HBO and Cinemax channels, directly to consumers over the Internet and provides HBO for free to subscribers of its streaming service AT&T's "Watch TV." In addition, AT&T's current practice of offering wireless subscribers access to owned video content over the Internet without counting against a subscriber's monthly data caps ("zero rating") may give an unfair advantage to AT&T's own video content, which currently includes, among others, DirecTV services, including "DirecTV Now," and AT&T's "Watch TV" on mobile devices.

In December 2018, Nexstar Media Group ("Nexstar") announced plans to acquire Tribune Media Company ("Tribune"), subject to approval by the Department of Justice and the FCC. We cannot predict the timing or outcome of government review of the proposed transaction. If the proposed transaction is completed, the combined company ("New Nexstar") would become the nation's largest broadcast conglomerate. New Nexstar may be able to use its scale to increase the leverage that it holds in retransmission consent negotiations which could, among other things, raise our programming costs and/or cause us to modify our programming packages as a result of programming interruptions.

As the pay-TV industry is mature, our strategy has included an emphasis on acquiring and retaining higher quality subscribers, even if it means that we will acquire and retain fewer overall subscribers. We evaluate the quality of subscribers based upon a number of factors, including, among others, profitability. Our DISH TV subscriber base has been declining due to, among other things, this strategy and the factors described above. There can be no assurance that our DISH TV subscriber base will not continue to decline. In the event that our DISH TV subscriber base continues to decline, it could have a material adverse long-term effect on our business, results of operations, financial condition and cash flow.

Changing consumer behavior and competition from digital media companies that provide or facilitate the delivery of video content via the Internet may reduce our subscriber activations and may cause our subscribers to purchase fewer services from us or to cancel our services altogether, resulting in less revenue to us.

Our business has historically focused on providing pay-TV services, including our DISH TV and Sling TV services. We face competition from providers of digital media, including, among others, Netflix, Hulu, Apple, Amazon, Alphabet, Verizon, DirecTV, Sony, YouTube, Fubo, Philo and Pluto that offer online services distributing movies, television shows and other video programming as well as programmers, such as HBO, CBS, STARZ, SHOWTIME and Univision that began selling content directly to consumers over the Internet. Some of these companies have larger customer bases, stronger brand recognition and greater financial, marketing and other resources than we do. In addition, traditional providers of video entertainment, including broadcasters, cable channels and MVPDs, are increasing their Internet-based video offerings. Some of these services charge nominal or no fees for access to their content, which could adversely affect demand for our Pay-TV services. Moreover, new technologies have been, and will likely continue to be, developed that further increase the number of competitors we face with respect to video services, including competition from piracy-based video offerings.

These products and services are also driving rapid changes in consumer behavior as consumers seek more control over when, where and how they consume content and access communications services. In particular, through technological advancements and with the large increase in the number of consumers with broadband service, a significant amount of video content has become available through online content providers for users to stream and view on their personal computers, televisions, phones, tablets, videogame consoles, and other devices, some without charging a fee to access the content. Similarly, while our customers can use their traditional video subscription to access mobile programming, an increasing number of customers are also using mobile devices as the sole means of viewing video, and an increasing number of non-traditional video providers are developing content and technologies to satisfy that demand. These technological advancements, changes in consumer behavior, and the increasing number of choices available to consumers with regard to the means by which consumers obtain video content may cause DISH TV subscribers to disconnect our services ("cord cutting"), downgrade to smaller, less expensive programming packages ("cord shaving") or elect to purchase through online content providers a certain portion of the services that they would have historically purchased from us, such as pay per view movies, resulting in less revenue to us. There can be no assurance that our DISH TV services will be able to compete with these other providers of digital media. Therefore, these technological advancements and changes in consumer behavior could reduce our gross new DISH TV subscriber activations and could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

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Our failure to effectively anticipate or adapt to competition or changes in consumer behavior, including with respect to younger consumers, could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

Economic weakness and uncertainty may adversely affect our ability to grow or maintain our business.

A substantial majority of our revenue comes from residential customers whose spending patterns may be affected by economic weakness and uncertainty. Our ability to grow or maintain our business may be adversely affected by economic weakness and uncertainty and other factors that may adversely affect the pay-TV industry. In particular, economic weakness and uncertainty could result in the following:

- Fewer subscriber activations and increased subscriber churn rate. We could face fewer subscriber activations and increased subscriber churn rate due to, among other things: (i) certain economic factors that impact consumers, including, among others, rising interest rates, a potential downturn in the housing market in the United States (including a decline in housing starts) and higher unemployment, which could lead to a lack of consumer confidence and lower discretionary spending; (ii) increased price competition for our products and services; and (iii) the potential loss of independent third-party retailers, who generate a meaningful percentage of our gross new DISH TV subscriber activations, because many of them are small businesses that are more susceptible to the negative effects of economic weakness. In particular, our DISH TV churn rate may increase with respect to subscribers who purchase our lower tier programming packages and who may be more sensitive to economic weakness, including, among others, our pay-in-advance subscribers.

- Lower Pay-TV ARPU. Our subscribers may disconnect our services and a growing share of pay-TV customers are cord shaving to downgrade to smaller, less expensive programming packages or electing to purchase through online content providers a certain portion of the services that they would have historically purchased from us, such as pay per view movies. Cord cutting and/or cord shaving by our subscribers could negatively impact our Pay-TV ARPU. In addition, Sling TV subscribers on average purchase lower priced programming services than DISH TV subscribers, and therefore, as Sling TV subscribers increase, it will have a negative impact on Pay-TV ARPU.

- Higher subscriber acquisition and retention costs. Our profits may be adversely affected by increased subscriber acquisition and retention costs necessary to attract and retain subscribers during a period of economic weakness.

Our competitors may be able to leverage their relationships with programmers to reduce their programming costs and/or offer exclusive content that will place them at a competitive advantage to us.

The cost of programming represents the largest percentage of our overall costs. Certain of our competitors own directly or are affiliated with companies that own programming content that may enable them to obtain lower programming costs or offer exclusive programming that may be attractive to prospective subscribers. Unlike our larger cable and satellite competitors, some of which also provide IPTV services, we have not made significant investments in programming providers. For example, in January 2011, the FCC and the Department of Justice approved a transaction between Comcast and General Electric pursuant to which they joined their programming properties, including NBC, Bravo and many others that are available in the majority of our programming packages, in a venture, NBCUniversal, controlled by Comcast. In March 2013, Comcast completed the acquisition of substantially all of General Electric's remaining interest in NBCUniversal. This transaction may affect us adversely by, among other things, making it more difficult for us to obtain access to NBCUniversal's programming networks on nondiscriminatory and fair terms, or at all. The FCC conditioned its approval on, among other things, Comcast complying with the terms of the FCC's order on network neutrality, even if that order is vacated by judicial or legislative action, and Comcast licensing its affiliated content to us, other traditional pay-TV providers and certain providers of video services over the Internet on fair and nondiscriminatory terms and conditions, including, among others, price. However, in January 2018, the prohibition on exclusivity expired, and we can no longer rely on these protections.

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In October 2016, AT&T announced its acquisition of Time Warner (which owns certain Turner, HBO and Cinemax channels), which was completed in June 2018. This transaction joined DirecTV, which was acquired by AT&T in 2015, with Time Warner's media holdings, which include content such as HBO, TBS, TNT, CNN, and movies. This transaction may affect us adversely by, among other things, making it more difficult for us to obtain access to Time Warner programming networks on nondiscriminatory and fair terms, or at all. For example, in October 2018, AT&T removed its HBO and Cinemax channels from our DISH TV and Sling TV programming lineup, as we and AT&T have been unable to negotiate the terms and conditions of a new programming carriage contract. Furthermore, AT&T offers its programming, including its HBO and Cinemax channels, directly to consumers over the Internet and provides HBO for free to subscribers of its streaming service AT&T's "Watch TV."

Our OTT Sling TV Internet-based services face certain risks, including, among others, significant competition.

Our Sling TV services face a number of risks, including, among others, the following, which may have a material adverse effect on our Sling TV services offerings:

- We face significant competition from programmers such as DirecTV Now, Sony PlayStation Vue, YouTube, Fubo, Philo and Pluto which distribute live-linear television programming over the Internet, from content providers such as HBO, CBS, STARZ, SHOWTIME and Univision, which have begun selling content directly to consumers over the Internet, and other companies including, among others, Netflix, Hulu, Apple, Amazon, Alphabet and Verizon, some of which have original content, larger customer bases, stronger brand recognition, and significant financial, marketing and other resources. We also face competition from piracy based video offerings;

- We offer a limited amount of programming content, and there can be no assurances that we will be able to maintain or increase the amount or type of programming content that we may offer to keep pace with, or to differentiate our Sling TV services from, other providers of online video content;

- We rely on streaming-capable devices to deliver our Sling TV services, and if we are not successful in maintaining existing, and creating new, relationships, or if we encounter technological, content licensing or other impediments to our streaming content, we may not be able to grow and maintain our Sling TV services, we may incur additional expense or our business could otherwise be adversely impacted;

- We may incur significant expenses to market our Sling TV services and build brand awareness, which could have a negative impact on the profitability of our Sling TV services;

- We may not be able to timely scale our technology, systems and operational practices related to our Sling TV services to effectively and reliably handle growth in subscribers and features related to our services;

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Our Sling Orange service has limitations that may not be applicable to our competitors, such as not being able to view content on more than one device simultaneously, and with respect to certain programming, not being able to provide a feature to record content for future viewing. If we are unable to remove those limitations and add such features to the Sling Orange service in the future, our ability to compete with other offerings could be adversely impacted; and

- The adoption or modification of laws and regulations relating to the Internet could limit or otherwise adversely affect the manner in which we conduct our Sling TV services and could cause us to incur additional expenses or alter our business model.

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If government regulations relating to the Internet change, we may need to alter the manner in which we conduct our Sling TV business, and/or incur greater operating expenses to comply with those regulations.

The adoption or modification of laws or regulations relating to the Internet could limit or otherwise adversely affect the manner in which we currently conduct our Sling TV business. Changes in laws or regulations that adversely affect the growth, popularity or use of the Internet, including Open Internet rules, could decrease the demand for our Sling TV services and increase our cost of providing our Sling TV services. Given the lack of laws in the United States to prevent network operators from discriminating against the legal traffic that crosses their networks, coupled with potentially significant political and economic power of local network operators, we could experience discriminatory or anti-competitive practices that could impede our growth, cause us to incur additional expense or otherwise negatively affect our business.

We cannot predict with any certainty the impact to our Sling TV business that may result from changes in laws or regulations that adversely affect the growth, popularity or use of the Internet, including Open Internet rules.

Changes in how network operators handle and charge for access to data that travels across their networks could adversely impact our business.

We rely upon the ability of consumers to access our Sling TV services through the Internet. If network operators block, restrict or otherwise impair access to our Sling TV services over their networks, our Sling TV business could be negatively affected. To the extent that network operators implement usage based pricing, including meaningful bandwidth caps, or otherwise try to monetize access to their networks by data providers, we could incur greater operating expenses and our Sling TV subscriber count could be negatively impacted. Furthermore, to the extent network operators create tiers of Internet access service and either charge us for or prohibit us from being available through these tiers, our Sling TV business could be negatively impacted.

In addition, many network operators that provide consumers with broadband service also provide these consumers with video programming, and these network operators may have an incentive to use their network infrastructure in a manner adverse to our continued growth and success. For example, as a result of AT&T's acquisition of DirecTV and the completion of the New Charter merger, these risks may be exacerbated to the extent these and other network operators are able to provide preferential treatment to their data. Furthermore, AT&T's current zero rating practice may give an unfair advantage to AT&T's own video services, which currently include, among others, DirecTV services, including "DirecTV Now" and AT&T's "Watch TV."

We cannot predict with any certainty the impact to our Sling TV business that may result from changes in how network operators handle and charge for access to data that travels across their networks.

We face increasing competition from other distributors of unique programming services such as foreign language, sports programming and original content that may limit our ability to maintain subscribers that desire these unique programming services.

We face increasing competition from other distributors of unique programming services such as foreign language, sports programming and original content including programming distributed over the Internet. There can be no assurance that we will maintain subscribers that desire these unique programming services. For example, the increasing availability of foreign language programming from our competitors, which in certain cases has resulted from our inability to renew programming agreements on an exclusive basis or at all, as well as competition from piracy-based video offerings, could contribute to an increase in our subscriber churn rate. Our agreements with distributors of foreign language programming have varying expiration dates, and some agreements are on a month-to-month basis. There can be no assurance that we will be able to grow or maintain subscribers that desire these unique programming services such as foreign language and sports programming.

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Operational and Service Delivery Risks

If our operational performance and customer satisfaction were to deteriorate, our subscriber activations and our subscriber churn rate may be negatively impacted, which could in turn adversely affect our revenue.

If our operational performance and customer satisfaction were to deteriorate, we may experience a decrease in subscriber activations and an increase our subscriber churn rate, which could have a material adverse effect on our business, financial condition and results of operations. To improve our operational performance, we continue to make investments in staffing, training, information systems, and other initiatives, primarily in our call center and in-home service operations. These investments are intended to help combat inefficiencies introduced by the increasing complexity of our business, improve customer satisfaction, reduce subscriber churn, increase productivity, and allow us to scale better over the long run. We cannot, however, be certain that our spending will ultimately be successful in improving our operational performance, and if unsuccessful, we may have to incur higher costs to improve our operational performance. While we believe that such costs will be outweighed by longer-term benefits, there can be no assurance when or if we will realize these benefits at all. If we are unable to combat the deterioration of our operational performance, our future subscriber activations and existing subscriber churn rate may be negatively impacted, which could in turn adversely affect our revenue growth and results of operations.

If our subscriber activations continue to decrease, or if our subscriber churn rate, subscriber acquisition costs or retention costs increase, our financial performance will be adversely affected.

We may incur increased costs to acquire new subscribers and retain existing subscribers. Our gross new DISH TV subscriber activations, net DISH TV subscriber additions, and DISH TV churn rate continue to be negatively impacted by stricter customer acquisition and retention policies for our DISH TV subscribers, including an emphasis on acquiring and retaining higher quality subscribers. In addition, our subscriber acquisition costs could increase as a result of increased spending for advertising and, with respect to our DISH TV services, the installation of more DVR receivers, which are generally more expensive than other receivers. Retention costs with respect to our DISH TV services may be driven higher by increased upgrades of existing subscribers' equipment to HD and DVR receivers. Although we expect to continue to incur expenses, such as providing retention credits and other subscriber acquisition and retention expenses, to attract and retain subscribers, there can be no assurance that our efforts will generate new subscribers or result in a lower churn rate. Additionally, certain of our promotions, including, among others, pay-in-advance, continue to allow consumers with relatively lower credit scores to become subscribers. These subscribers typically churn at a higher rate.

Our subscriber acquisition costs and our subscriber retention costs can vary significantly from period to period and can cause material variability to our net income (loss) and free cash flow. Any material increase in subscriber acquisition or retention costs from current levels could have a material adverse effect on our business, financial condition and results of operations.

Programming expenses are increasing and may adversely affect our future financial condition and results of operations.

Our programming costs currently represent the largest component of our total expense and we expect these costs to continue to increase on a per subscriber basis. The pay-TV industry has continued to experience an increase in the cost of programming, especially local broadcast channels and sports programming. In addition, certain programming costs are rising at a much faster rate than wages or inflation. These factors may be exacerbated by the increasing trend of consolidation in the media industry, which may further increase our programming expenses. Our ability to compete successfully will depend, among other things, on our ability to continue to obtain desirable programming and deliver it to our subscribers at competitive prices.

When offering new programming, or upon expiration of existing contracts, programming suppliers have historically attempted to increase the rates that they charge us for programming. We expect this practice to continue, which, if successful, would increase our programming costs. In addition, our programming expenses may also increase as we add programming to our video services or distribute existing programming to our customers through additional delivery services, such as Sling TV. As a result, our margins may face further pressure if we are unable to renew our long-term programming contracts on acceptable pricing and other economic terms. Alternatively, to attempt to mitigate the effect of price increases or for other reasons, we may elect not to carry or may be unable to carry certain channels, which could adversely affect our subscriber growth or result in higher churn.

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In addition, increases in programming costs cause us to increase the rates that we charge our Pay-TV subscribers, which could in turn cause our existing Pay-TV subscribers to disconnect our service or cause potential new Pay-TV subscribers to choose not to subscribe to our service. Therefore, we may be unable to pass increased programming costs on to our customers, which could have a material adverse effect on our business, financial condition and results of operations.

We depend on others to provide the programming that we offer to our subscribers and, if we fail to obtain or lose access to certain programming, our subscriber activations and our subscriber churn rate may be negatively impacted.

We depend on third parties to provide us with programming services. Our programming agreements have remaining terms ranging from less than one to up to several years and contain various renewal, expiration and/or termination provisions. We may not be able to renew these agreements on acceptable terms or at all, and these agreements may be terminated prior to expiration of their original term. In recent years, negotiations over programming carriage contracts generally remain contentious, and certain programmers have, in the past, limited our access to their programming in connection with those negotiations and the scheduled expiration of their programming carriage contracts with us. As national and local programming interruptions and threatened programming interruptions have become more frequent in recent years, our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate have been negatively impacted as a result of programming interruptions and threatened programming interruptions in connection with the scheduled expiration of programming carriage contracts with content providers. We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate resulting from programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

We typically have a few programming contracts with major content providers up for renewal each year and if we are unable to renew any of these agreements or the other parties terminate the agreements, there can be no assurance that we would be able to obtain substitute programming, or that such substitute programming would be comparable in quality or cost to our existing programming. In addition, failure to obtain access to certain programming or loss of access to programming, particularly programming provided by major content providers and/or programming popular with our subscribers, could have a material adverse effect on our business, financial condition and results of operations, including, among other things, our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate.

We may not be able to obtain necessary retransmission consent agreements at acceptable rates, or at all, from local network stations.

The Copyright Act generally gives satellite companies a statutory copyright license to retransmit local broadcast channels by satellite back into the market from which they originated, subject to obtaining the retransmission consent of local network stations that do not elect “must carry” status, as required by the Communications Act. If we fail to reach retransmission consent agreements with such broadcasters, we cannot carry their signals. This could have an adverse effect on our strategy to compete with cable and other satellite companies that provide local signals. While we have been able to reach retransmission consent agreements with most of these local network stations, from time to time there are stations with which we have not been able to reach an agreement. We cannot be sure that we will secure these agreements or that we will secure new agreements on acceptable terms, or at all, upon the expiration of our current retransmission consent agreements, some of which are short-term. In recent years, national broadcasters have used their ownership of certain local broadcast stations to require us to carry additional cable programming in exchange for retransmission consent of their local broadcast stations. These requirements may place constraints on available capacity on our satellites for other programming. Furthermore, the rates we are charged for retransmitting local channels have been increasing substantially and may exceed our ability to increase our prices to our customers, which could have a material adverse effect on our business, financial condition and results of operations.

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We may be required to make substantial additional investments to maintain competitive programming offerings.

We believe that the availability and extent of programming and other value-added services such as access to video via mobile devices continue to be significant factors in consumers' choice among pay-TV providers. Other pay-TV providers may have more successfully marketed and promoted their programming packages and value-added services and may also be better equipped and have greater resources to increase their programming offerings and value-added services to respond to increasing consumer demand. We may be required to make substantial additional investments in infrastructure to respond to competitive pressure to deliver enhanced programming, and other value-added services, and there can be no assurance that we will be able to compete effectively with offerings from other pay-TV providers.

Any failure or inadequacy of our information technology infrastructure and communications systems or those of third parties that we use in our operations, including, without limitation, those caused by cyber-attacks or other malicious activities, could disrupt or harm our business.

The capacity, reliability and security of our information technology hardware and software infrastructure (including our billing systems) and communications systems, or those of third parties that we use in our operations, are important to the operation of our current business, which would suffer in the event of system failures or cyber-attacks. Likewise, our ability to expand and update our information technology infrastructure in response to our growth and changing needs is important to the continued implementation of our new service offering initiatives. Our inability to expand or upgrade our technology infrastructure could have adverse consequences, which could include, among other things, the delayed implementation of new service offerings, service or billing interruptions, and the diversion of development resources. We rely on third parties for developing key components of our information technology and communications systems and ongoing service. Some of our key systems and operations, including those supplied by third-party providers, are not fully redundant, and our disaster recovery planning cannot account for all eventualities. Interruption and/or failure of any of these systems could disrupt our operations, interrupt our services, result in significant financial expenditures and damage our reputation, thus adversely impacting our ability to provide our services, retain our current subscribers and attract new subscribers.

In addition, although we take protective measures designed to secure our information technology systems and endeavor to modify such protective measures as circumstances warrant, our information technology hardware and software infrastructure and communications systems, or those of third parties that we use in our operations, may be vulnerable to a variety of interruptions, including, without limitation, natural disasters, terrorist attacks, telecommunications failures, cyber-attacks and other malicious activities such as unauthorized access, physical or electronic break-ins, misuse, computer viruses or other malicious code, computer denial of service attacks and other events that could disrupt or harm our business. These protective measures may not be sufficient for all eventualities and may themselves be vulnerable to hacking, malfeasance, system error or other irregularities. For example, certain parties may attempt to fraudulently induce employees or customers into disclosing usernames, passwords or other sensitive information, which may in turn be used to access our information technology systems. In addition, third-party providers of some of our key systems may also experience interruptions to their information technology

hardware and software infrastructure and communications systems that could adversely impact us and over which we may have limited or no control. We may obtain certain confidential, proprietary and personal information about our customers, personnel and vendors, and may provide this information to third parties in connection with our business. If one or more of such interruptions or failures occur to us or our third-party providers, it potentially could jeopardize such information and other information processed and stored in, and transmitted through, our or our third-party providers' information technology hardware and software infrastructure and communications systems, or otherwise cause interruptions or malfunctions in our operations, which could result in lawsuits, government claims, investigations or proceedings, significant losses or reputational damage. Due to the fast-moving pace of technology, it may be difficult to detect, contain and remediate every such event. We may be required to expend significant additional resources to modify our protective measures or to investigate and remediate vulnerabilities or other exposures, and we may be subject to financial losses. Furthermore, the amount and scope of insurance we maintain may not cover all expenses related to such activities or all types of claims that may arise.

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As a result of the increasing awareness concerning the importance of safeguarding personal information, the potential misuse of such information and legislation that has been adopted or is being considered regarding the protection, privacy and security of personal information, the potential liability associated with information-related risks is increasing, particularly for businesses like ours that handle personal customer data. The occurrence of any such network or information system related events or security breaches could have a material adverse effect on our reputation, business, financial condition and results of operations. Significant incidents could result in a disruption of our operations, customer dissatisfaction, damage to our reputation or a loss of customers and revenues.

We currently depend on EchoStar to provide the vast majority of our satellite transponder capacity and other related services to us. Our business would be adversely affected if EchoStar ceases to provide these services to us and we are unable to obtain suitable replacement services from third parties.

We lease the vast majority of our satellite transponder capacity from EchoStar and EchoStar is a key supplier of other related services to us. Satellite transponder leasing costs may increase beyond our current expectations. Our inability to obtain satellite transponder capacity and other related services from third parties could adversely affect our subscriber activations and subscriber churn rate and cause related revenue to decline.

See Note 18 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our Related Party Transactions with EchoStar.

Technology in the pay-TV industry changes rapidly, and our success may depend in part on our timely introduction and implementation of, and effective investment in, new competitive products and services, and our failure to do so could cause our products and services to become obsolete and could negatively impact our business.

Technology in the pay-TV industry changes rapidly as new technologies are developed, which could cause our products and services to become obsolete. We and our suppliers may not be able to keep pace with technological developments. Our operating results are dependent to a significant extent upon our ability to continue to introduce new products and services, to upgrade existing products and services on a timely basis, and to reduce costs of our existing products and services. We may not be able to successfully identify new product or service opportunities or develop and market these opportunities in a timely or cost-effective manner. The research and development of new, technologically advanced products is a complex and uncertain process requiring high levels of innovation and investment. The success of new product and service development depends on many factors, including among others, the following:

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difficulties and delays in the development, production, timely completion, testing and marketing of products and services;
- the cost of the products and services;
- proper identification of customer need and customer acceptance of products and services;
- the development of, approval of and compliance with industry standards;
- the amount of resources we must devote to the development of new technologies; and
- the ability to differentiate our products and services and compete with other companies in the same markets.

If the new technologies on which we focus our research and development investments fail to achieve acceptance in the marketplace, our competitive position could be negatively impacted, causing a reduction in our revenues and earnings. For example, our competitors could use proprietary technologies that are perceived by the market as being superior. Further, after we have incurred substantial costs, one or more of the products or services under our development, or under development by one or more of our strategic partners, could become obsolete prior to it being widely adopted.

In addition, our competitive position depends in part on our ability to offer new DISH TV subscribers and upgrade existing subscribers receivers with DVR and streaming capabilities and by otherwise making additional infrastructure investments, such as those related to our information technology and call centers. We may also be at a competitive disadvantage in developing and introducing complex new products and services for our DISH TV services because of the substantial costs we may incur in making these products or services available across our installed base of subscribers. We may not be able to pass on to our subscribers the entire cost of these upgrades and infrastructure investments.

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New technologies could also create new competitors for us. For instance, we face increasing consumer demand for the delivery of digital video services via the Internet. We expect to continue to face increased competition from companies who use the Internet to deliver digital video services as the speed and quality of broadband and wireless networks continues to improve.

Technological innovation is important to our success and depends, to a significant degree, on the work of technically skilled employees. If we are unable to attract and retain appropriately technically skilled employees, our competitive position could be materially and adversely affected. In addition, delays in the delivery of components or other unforeseen problems associated with our technology may occur that could materially and adversely affect our ability to generate revenue, offer new products and services and remain competitive.

If our products and services, including, without limitation, our DISH TV and Sling TV products and services, are not competitive, our business could suffer and our financial performance could be negatively impacted. Our products and services may also experience quality problems, including outages and service slowdowns, from time to time. If the quality of our products and services do not meet our customers' expectations, then our business, and ultimately our reputation, could be negatively impacted.

We rely on a single vendor or a limited number of vendors to provide certain key products or services to us such as information technology support, billing systems, and security access devices, and the inability of these key vendors to meet our needs could have a material adverse effect on our business.

Historically, we have contracted with and rely on a single vendor or a limited number of vendors to provide certain key products or services to us such as information technology support, billing systems, and security access devices. If these vendors are unable to meet our needs because they fail to perform adequately, are no longer in business, are experiencing shortages or discontinue a certain product or service we need, our business, financial condition and results of operations may be adversely affected. While alternative sources for these products and services exist, we may not be able to develop these alternative sources quickly and cost-effectively, which could materially impair our ability to timely deliver our products to our subscribers or operate our business. Furthermore, our vendors may request changes in pricing, payment terms or other contractual obligations between the parties, which could cause us to make substantial additional investments.

We rely on a few suppliers and in some cases a single supplier for many components of our new set-top boxes, and any reduction or interruption in supplies or significant increase in the price of supplies could have a negative impact on our business.

We rely on a few suppliers and in some cases a single supplier, for many components of our new set-top boxes that we provide to subscribers in order to deliver our digital television services. Our ability to meet customer demand depends, in part, on our ability to obtain timely and adequate delivery of quality materials, parts and components from suppliers. In the event of an interruption of supply or a significant price increase from these suppliers, we may not be able to diversify sources of supply in a timely manner, which could have a negative impact on our business. Further, due to increased demand for products, electronic manufacturers may experience shortages for certain components, from time to time. Additionally, supply of and/or costs of raw materials may be negatively impacted by trade protection policies, such as tariffs and or/escalating trade tensions, particularly with countries in Asia. We have experienced in the past and may continue to experience shortages driven by raw material availability, manufacturing capacity, labor shortages, industry allocations, natural disasters, logistical delays and significant changes in the financial or business conditions of its suppliers that negatively impact our operations. Any such delays or constraints could have a material adverse effect on our business, financial condition and results of operations, including, among other things, our subscriber activations.

Our programming signals are subject to theft, and we are vulnerable to other forms of fraud that could require us to make significant expenditures to remedy.

Increases in theft of our signal or our competitors' signals could, in addition to reducing subscriber activations, also cause our subscriber churn rate to increase. For our DISH TV services, in order to combat signal theft and improve the security of our broadcast system, we use microchips embedded in credit card sized access cards, called "smart cards," or security chips in our DBS receiver systems to control access to authorized programming content ("Security Access Devices"). Furthermore, for our Sling TV services, we encrypt programming content and use digital rights management software to, among other things, prevent unauthorized access to our programming content.

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Our signal encryption 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 Security Access Device replacement programs and updates in security software, that are intended to make signal 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 and that we remain susceptible to additional signal theft. We expect that future replacements of these Security Access Devices may be necessary to keep our system secure. We cannot ensure that we will be successful in reducing or controlling theft of our programming content and we may incur additional costs in the future if our system's security is compromised.

We are also vulnerable to other forms of fraud. While we are addressing certain fraud through a number of actions, including terminating independent third-party retailers that we believe violated our business rules, there can be no assurance that we will not continue to experience fraud, which could impact our subscriber activations and subscriber churn rate. Economic weakness may create greater incentive for signal theft, piracy and other forms of fraud, which could lead to higher subscriber churn rate and reduced revenue.

We depend on independent third parties to solicit orders for our DISH TV services that represent a meaningful percentage of our total gross new DISH TV subscriber activations.

While we offer products and services through direct sales channels, a meaningful percentage of our total gross new DISH TV subscriber activations are generated through independent third parties such as small satellite retailers, direct marketing groups, local and regional consumer electronics stores, nationwide retailers, and telecommunications companies. Most of our independent third-party retailers are not exclusive to us and some of our independent third-party retailers may favor our competitors' products and services over ours based on the relative financial arrangements associated with marketing our products and services and those of our competitors. Furthermore, most of these independent third-party retailers are significantly smaller than we are and may be more susceptible to economic weaknesses that make it more difficult for them to operate profitably. Because our independent third-party retailers receive most of their incentive value at activation and not over an extended period of time, our interests may not always be aligned with our independent third-party retailers. It may be difficult to better align our interests with our independent third-party retailers because of their capital and liquidity constraints. Loss of these relationships could have an adverse effect on our subscriber base and certain of our other key operating metrics because we may not be able to develop comparable alternative distribution channels.

We have limited satellite capacity and failures or reduced capacity could adversely affect our DISH TV services.

Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming we offer. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited. We lease substantially all of our satellite capacity from third parties, including the vast majority of our

satellite transponder capacity from EchoStar, and we do not carry commercial insurance on any of the satellites that we lease from them.

Our ability to earn revenue from our DISH TV services depends on the usefulness of our owned and leased satellites, each of which has a limited useful life. A number of factors affect the useful lives of the satellites, including, among other things, the quality of their 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. Generally, the minimum design life of each of our owned and leased satellites ranges from 12 to 15 years. We can provide no assurance, however, as to the actual useful lives of any of these satellites. Our operating results could be adversely affected if the useful life of any of our owned or leased satellites were significantly shorter than the minimum design life.

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In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite, any of which could have a material adverse effect on our business, financial condition and results of operations. Such a failure could result in a prolonged loss of critical programming. A relocation would require FCC approval and, among other things, may require a showing to the FCC that the replacement satellite would not cause additional interference compared to the failed or lost satellite. We cannot be certain that we could obtain such FCC approval. If we choose to use a satellite in this manner, this use could adversely affect our ability to satisfy certain operational conditions associated with our authorizations. Failure to satisfy those conditions could result in the loss of such authorizations, which would have an adverse effect on our ability to generate revenues.

Our owned and leased satellites are subject to construction, launch, operational and environmental risks that could limit our ability to utilize these satellites.

Construction and launch risks. Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming we offer. To accomplish this goal, from time to time, new satellites need to be built and launched. Satellite construction and launch is subject to significant risks, including construction and launch delays, launch failure and incorrect orbital placement. Certain launch vehicles that may be used by us have either unproven track records or have experienced launch failures in the recent past. The risks of launch delay and failure are usually greater when the launch vehicle does not have a track record of previous successful flights. Launch failures result in significant delays in the deployment of satellites because of the need both to construct replacement satellites, which can take more than three years, and to obtain other launch opportunities. Significant construction or launch delays could materially and adversely affect our ability to generate revenues. If we were unable to obtain launch insurance, or obtain launch insurance at rates we deem commercially reasonable, and a significant launch failure were to occur, it could impact our ability to fund future satellite procurement and launch opportunities.

In addition, the occurrence of future launch failures for other operators may delay the deployment of our satellites and materially and adversely affect our ability to insure the launch of our satellites at commercially reasonable premiums, if at all. See “We generally do not carry commercial launch or in-orbit insurance on any of the satellites that we use, other than certain satellites leased from third parties, and could face significant impairment charges if any of our owned satellites fail” below for further information.

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

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 experience anomalies in the future, whether of the types described above or arising from the failure of other systems or components.

Any single anomaly or series of anomalies could materially and adversely affect our operations and revenues and our relationship with current customers, as well as our ability to attract new customers for our DISH TV services. In particular, future anomalies may result in the loss of individual transponders on a satellite, a group of transponders on that satellite or the entire satellite, depending on the nature of the anomaly. Anomalies may also reduce the expected useful life of a satellite, thereby reducing the channels that could be offered using that satellite, or create additional expenses due to the need to provide replacement or back-up satellites. See the disclosures relating to satellite anomalies set forth under Note 8 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Environmental risks. 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.

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Some decommissioned satellites are in uncontrolled orbits that 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 commercial launch or in-orbit insurance on any of the satellites that we use, other than certain satellites leased from third parties, and could face significant impairment charges if any of our owned satellites fail.

Generally, we do not carry commercial launch or in-orbit insurance on any of the satellites we use, other than certain satellites leased from third parties, and generally do not use commercial insurance to mitigate the potential financial impact of launch or in-orbit failures because we believe that the cost of insurance premiums is uneconomical relative to the risk of such failures. We lease substantially all of our satellite capacity from third parties, including the vast majority of our satellite transponder capacity from EchoStar, and we do not carry commercial insurance on any of the satellites we lease from them. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited. In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite. If one or more of our owned in-orbit satellites fail, we could be required to record significant impairment charges.

We may have potential conflicts of interest with EchoStar due to our common ownership and management.

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

· Cross officerships, directorships and stock ownership. We have certain overlap in directors and executive officers with EchoStar. These individuals may have actual or apparent conflicts of interest with respect to matters involving or affecting each company. Our Board of Directors and executive officers include persons who are members of the Board of Directors of EchoStar, including Charles W. Ergen, who serves as the Chairman of EchoStar and our Chairman. The executive officers and the members of our Board of Directors who are members of the Board of Directors of EchoStar have fiduciary duties to EchoStar's shareholders. For example, there is the potential for a conflict of interest when we or EchoStar look at acquisitions and other business opportunities that may be suitable for both companies. In addition, certain of our directors and officers own EchoStar stock and options to purchase EchoStar stock. Mr. Ergen beneficially owns approximately 50.8% of EchoStar's total equity securities (assuming conversion of all Class B Common Stock into Class A Common Stock) and controls approximately 88.3% of the

voting power of EchoStar. 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 us and EchoStar. Furthermore, Mr. Ergen is employed by both us and EchoStar.

· Intercompany agreements with EchoStar. In connection with and following the Spin-off and Share Exchange Agreement, we and EchoStar have entered into certain agreements pursuant to which we obtain certain products, services and rights from EchoStar, EchoStar obtains certain products, services and rights from us, and we and EchoStar have indemnified each other against certain liabilities arising from our respective businesses. See Note 18 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our Related Party Transactions with EchoStar. The terms of certain of these agreements were established while EchoStar was a wholly-owned subsidiary of us and were not the result of arm's length negotiations. The allocation of assets, liabilities, rights, indemnifications and other obligations between EchoStar and us under the separation and other intercompany agreements we entered into with EchoStar, in connection with the Spin-off, may have been different if agreed to by two unaffiliated parties. Had these agreements been negotiated with unaffiliated third parties, their terms may have been more favorable, or less favorable, to us. In addition, conflicts could arise between us and EchoStar in the interpretation or any extension or renegotiation of these existing agreements.

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- Additional intercompany transactions. EchoStar and its subsidiaries have and will continue to enter into transactions with us and our subsidiaries. Although the terms of any such transactions will be established based upon negotiations between EchoStar and us and, when appropriate, subject to the approval of a committee of the 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 us or our subsidiaries or affiliates as may otherwise be obtained between unaffiliated parties.

- Business opportunities. We have historically retained, and in the future may acquire, 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 EchoStar. We may also compete with EchoStar when we participate in auctions for spectrum or orbital slots for our satellites.

We may not be able to resolve any potential conflicts of interest with EchoStar, 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 agreements with EchoStar that would prevent either company from competing with the other.

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

We believe that our future success will depend to a significant extent upon the performance of Charles W. Ergen, our Chairman, and certain other executives. The loss of Mr. Ergen or of certain other key executives could have a material adverse effect on our business, financial condition and results of operations. Although all of our executives have executed agreements limiting their ability to work for or consult with competitors if they leave us, we do not have employment agreements with any of them. Mr. Ergen also serves as the Chairman of EchoStar. To the extent our officers are performing services for EchoStar, this may divert their time and attention away from our business and may therefore adversely affect our business.

Acquisition and Capital Structure Risks

We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses.

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as

described further below.

DISH Network Spectrum

We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets.

700 MHz Licenses. In 2008, we paid $712 million to acquire certain 700 MHz E Block ("700 MHz") wireless spectrum licenses, which were granted to us by the FCC in February 2009. These licenses are subject to certain build-out requirements. By March 2020, we must provide signal coverage and offer service to at least 70% of the population in each of our E Block license areas (the "700 MHz Build-Out Requirement"). If the 700 MHz Build-Out Requirement is not met with respect to any particular E Block license area, our authorization may terminate for the geographic portion of that license area in which we are not providing service. In addition to the 700 MHz Build-Out Requirement deadline in March 2020, these wireless spectrum licenses also expire in March 2020 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

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AWS-4 Licenses. On March 2, 2012, the FCC approved the transfer of 40 MHz of wireless spectrum licenses held by DBSD North America and TerreStar to us. On March 9, 2012, we completed the DBSD Transaction and the TerreStar Transaction, pursuant to which we acquired, among other things, certain satellite assets and wireless spectrum licenses held by DBSD North America and TerreStar. The total consideration to acquire the DBSD North America and TerreStar assets was approximately $2.860 billion.

On February 15, 2013, the FCC issued an order, which became effective on March 7, 2013, modifying our licenses to expand our terrestrial operating authority with AWS-4 authority ("AWS-4"). These licenses are subject to certain build-out requirements. By March 2020, we are required to provide terrestrial signal coverage and offer terrestrial service to at least 70% of the population in each area covered by an individual license (the "AWS-4 Build-Out Requirement"). If the AWS-4 Build-Out Requirement is not met with respect to any particular individual license, our terrestrial authorization for that license area may terminate. The FCC's December 20, 2013 order also conditionally waived certain FCC rules for our AWS-4 licenses to allow us to repurpose all 20 MHz of our uplink spectrum (2000-2020 MHz) for terrestrial downlink operations. On June 1, 2016, we notified the FCC that we had elected to use our AWS-4 uplink spectrum for terrestrial downlink operations, and effective June 7, 2016, the FCC modified our AWS-4 licenses, resulting in all 40 MHz of our AWS-4 spectrum being designated for terrestrial downlink operations. These wireless spectrum licenses expire in March 2023 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

H Block Licenses. On April 29, 2014, the FCC issued an order granting our application to acquire all 176 wireless spectrum licenses in the H Block auction. We paid approximately $1.672 billion to acquire these H Block licenses, including clearance costs associated with the lower H Block spectrum. The H Block licenses are subject to certain build-out requirements. By April 2022, we must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual H Block license (the "H Block Build-Out Requirement"). If the H Block Build-Out Requirement is not met, our authorization for each H Block license area in which we do not meet the requirement may terminate. These wireless spectrum licenses expire in April 2024 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

600 MHz Licenses. The broadcast incentive auction in the 600 MHz frequency range ("Auction 1000") began on March 29, 2016 and concluded on March 30, 2017. On April 13, 2017, the FCC announced that ParkerB.com Wireless L.L.C. ("ParkerB.com"), a wholly-owned subsidiary of DISH Network, was the winning bidder for 486 wireless spectrum licenses (the "600 MHz Licenses") with aggregate winning bids totaling approximately $6.211 billion. On April 27, 2017, ParkerB.com filed an application with the FCC to acquire the 600 MHz Licenses. On July 1, 2016, we paid $1.5 billion to the FCC as a deposit for Auction 1000. On May 11, 2017, we paid the remaining balance of our winning bids of approximately $4.711 billion. On June 14, 2017, the FCC issued an order granting ParkerB.com's application to acquire the 600 MHz Licenses.

The 600 MHz Licenses are subject to certain interim and final build-out requirements. By June 2023, we must provide reliable signal coverage and offer wireless service to at least 40% of the population in each area covered by an individual 600 MHz License (the "600 MHz Interim Build-Out Requirement"). By June 2029, we must provide reliable signal coverage and offer wireless service to at least 75% of the population in each area covered by an individual 600

MHz License (the "600 MHz Final Build-Out Requirement"). If the 600 MHz Interim Build-Out Requirement is not met, the 600 MHz License term and the 600 MHz Final Build-Out Requirement may be accelerated by two years (from June 2029 to June 2027) for each 600 MHz License area in which we do not meet the requirement. If the 600 MHz Final Build-Out Requirement is not met, our authorization for each 600 MHz License area in which we do not meet the requirement may terminate. In addition, certain broadcasters will have up to 39 months (ending July 13, 2020) to relinquish their 600 MHz spectrum, which may impact the timing for our ability to commence operations using certain 600 MHz Licenses. The FCC has issued the 600 MHz Licenses prior to the clearance of the spectrum, and the build-out deadlines are based on the date that the 600 MHz Licenses were issued to us, not the date that the spectrum is cleared. These wireless spectrum licenses expire in June 2029 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

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MVDDS Licenses. We have MVDDS licenses in 82 out of 214 geographical license areas, including Los Angeles, New York City, Chicago and several other major metropolitan areas. By August 2014, we were required to meet certain FCC build-out requirements related to our MVDDS licenses, and we are subject to certain FCC service rules applicable to these licenses. In January 2015, the FCC granted our application to extend the build-out requirements related to our MVDDS licenses. We now have until the third quarter 2019 to provide "substantial service" on our MVDDS licenses. Our MVDDS licenses may be terminated if we do not provide substantial service in accordance with the new build-out requirements. These wireless spectrum licenses expire in August 2024 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

In 2016, the MVDDS 5G Coalition, of which we are a member, filed a petition for rulemaking requesting the FCC to consider updating the rules to allow us to provide two-way 5G services using our MVDDS licenses. We cannot predict when or if the FCC will grant the petition and proceed with a rulemaking. If the FCC adopts rules that would allow us to provide two-way 5G services using our MVDDS licenses, the requests of OneWeb and others for authority to use the band for service from NGSO satellite systems may hinder our ability to provide 5G services using our MVDDS licenses.

LMDS Licenses. As a result of the completion of the Share Exchange on February 28, 2017, we acquired from EchoStar certain Local Multipoint Distribution Service ("LMDS") licenses in four markets: Cheyenne, Kansas City, Phoenix, and San Diego. The "substantial service" milestone has been met with respect to each of the licenses. In addition, through the FCC's Spectrum Frontiers proceeding, a portion of each of our LMDS licenses were reassigned to the Upper Microwave Flexible Use Service band (27.5-28.35 GHz), which will allow for a more flexible use of the licenses, including, among other things, 5G mobile operations. These wireless spectrum licenses have been renewed by the FCC through September 2028. There can be no assurances that the FCC will renew these wireless spectrum licenses.

Commercialization of Our Wireless Spectrum Licenses and Related Assets. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We expect to complete the First Phase by March 2020, with subsequent phases to be completed thereafter. As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, RF design, and deployment services for the First Phase. Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion through 2020. We expect the Second Phase to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion.

We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization,

build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers. For example, on September 18, 2018, we filed an application with the FCC to participate as a bidder in the FCC's auction of Upper Microwave Flexible Use Service licenses in the 27.5–28.35 GHz bands ("Auction 101") and 24.25–24.45 and 24.75–25.25 GHz bands ("Auction 102" and collectively with Auction 101, "Auctions 101 & 102"). On October 10, 2018, the FCC announced that a subsidiary of DISH Network and 25 other applicants were qualified to participate in Auction 101 and that a subsidiary of DISH Network and 33 other applicants were qualified to participate in Auction 102. Auction 101 commence on November 14, 2018 and concluded January 24, 2019. Auction 102 is scheduled to commence March 14, 2019.

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The FCC determined that bidding in these auctions will be "anonymous," which means that prior to and during the course of the auctions, the FCC will not make public any information about a specific applicant's upfront deposit or its bids. In addition, FCC rules restrict information that bidders may disclose about their participation in the auctions.

On July 9, 2018, the FCC sent us a letter inquiring about our progress toward meeting certain build-out milestones by March 2020, which is publicly available on the FCC's website. On September 21, 2018, we filed a response letter with the FCC regarding our progress toward meeting certain build-out milestones. We will continue to update the FCC about our progress on the First Phase. There is no assurance that the FCC will find our build-out, including the First Phase, sufficient to meet the build-out requirements to which our wireless spectrum licenses are subject.

We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on acceptable terms or at all. There can be no assurance that we will be able to develop and implement a business model that will realize a return on these wireless spectrum licenses or that we will be able to profitably deploy the assets represented by these wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations.

DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

Non-Controlling Investments

During 2015, through our wholly-owned subsidiaries American II and American III, we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, the parent company of Northstar Wireless, and in SNR HoldCo, the parent company of SNR Wireless, respectively. Under the applicable accounting guidance in ASC 810, Northstar Spectrum and SNR HoldCo are considered variable interest entities and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Northstar Investment. Through American II, we own a non-controlling interest in Northstar Spectrum, which is comprised of 85% of the Class B Common Interests and 100% of the Class A Preferred Interests of Northstar Spectrum. Northstar Manager is the sole manager of Northstar Spectrum and owns a controlling interest in Northstar Spectrum, which is comprised of 15% of the Class B Common Interests of Northstar Spectrum. As of March 31, 2018, the total equity contributions from American II and Northstar Manager to Northstar Spectrum were approximately $7.621 billion and $133 million, respectively. As of March 31, 2018, the total loans from American II to Northstar Wireless under the Northstar Credit Agreement (as defined below) for payments to the FCC related to the Northstar Licenses (as defined below) were approximately $500 million. See below for further information.

SNR Investment. Through American III, we own a non-controlling interest in SNR HoldCo, which is comprised of 85% of the Class B Common Interests and 100% of the Class A Preferred Interests of SNR HoldCo. SNR Management is the sole manager of SNR HoldCo and owns a controlling interest in SNR HoldCo, which is comprised of 15% of the Class B Common Interests of SNR HoldCo. As of March 31, 2018, the total equity contributions from American III and SNR Management to SNR HoldCo were approximately $5.590 billion and $93 million, respectively. As of March 31, 2018, the total loans from American III to SNR Wireless under the SNR Credit Agreement (as defined below) for payments to the FCC related to the SNR Licenses (as defined below) were approximately $500 million. See below for further information.

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AWS-3 Auction

Northstar Wireless and SNR Wireless each filed applications with the FCC to participate in Auction 97 (the "AWS-3 Auction") for the purpose of acquiring certain AWS-3 Licenses. Each of Northstar Wireless and SNR Wireless applied to receive bidding credits of 25% as designated entities under applicable FCC rules.

Northstar Wireless was the winning bidder for AWS-3 Licenses with gross winning bid amounts totaling approximately $7.845 billion, which after taking into account a 25% bidding credit, was approximately $5.884 billion. SNR Wireless was the winning bidder for AWS-3 Licenses with gross winning bid amounts totaling approximately $5.482 billion, which after taking into account a 25% bidding credit, was approximately $4.112 billion. In addition to the net winning bids, SNR Wireless made a bid withdrawal payment of approximately $8 million.

FCC Order and October 2015 Arrangements. On August 18, 2015, the FCC released a Memorandum Opinion and Order, FCC 15-104 (the "Order") in which the FCC determined, among other things, that DISH Network has a controlling interest in, and is an affiliate of, Northstar Wireless and SNR Wireless, and therefore DISH Network's revenues should be attributed to them, which in turn makes Northstar Wireless and SNR Wireless ineligible to receive the 25% bidding credits (approximately $1.961 billion for Northstar Wireless and $1.370 billion for SNR Wireless).

Letters Exchanged between Northstar Wireless and the FCC Wireless Bureau. As outlined in letters exchanged between Northstar Wireless and the Wireless Telecommunications Bureau of the FCC (the "FCC Wireless Bureau"), Northstar Wireless paid the gross winning bid amounts for 261 AWS-3 Licenses (the "Northstar Licenses") totaling approximately $5.619 billion through the application of funds already on deposit with the FCC. Northstar Wireless also notified the FCC that it would not be paying the gross winning bid amounts for 84 AWS-3 Licenses totaling approximately $2.226 billion.

As a result of the nonpayment of those gross winning bid amounts, the FCC retained those licenses and Northstar Wireless owed the FCC an additional interim payment of approximately $334 million (the "Northstar Interim Payment"), which is equal to 15% of $2.226 billion. The Northstar Interim Payment was recorded as an expense during the fourth quarter 2015. Northstar Wireless immediately satisfied the Northstar Interim Payment through the application of funds already on deposit with the FCC and an additional loan from American II of approximately $69 million. As a result, the FCC will not deem Northstar Wireless to be a "current defaulter" under applicable FCC rules.

In addition, the FCC Wireless Bureau acknowledged that Northstar Wireless' nonpayment of those gross winning bid amounts does not constitute action involving gross misconduct, misrepresentation or bad faith. Therefore, the FCC concluded that such nonpayment will not affect the eligibility of Northstar Wireless, its investors (including DISH

Network) or their respective affiliates to participate in future spectrum auctions (including Auction 1000 and any re-auction of the AWS-3 licenses retained by the FCC). At this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction of those AWS-3 licenses.

If the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are greater than or equal to the winning bids of Northstar Wireless, no additional amounts will be owed to the FCC. However, if those winning bids are less than the winning bids of Northstar Wireless, then Northstar Wireless will be responsible for the difference less any overpayment of the Northstar Interim Payment (which will be recalculated as 15% of the winning bids from re-auction or other award) (the "Northstar Re-Auction Payment"). For example, if the winning bids in a re-auction are $1, the Northstar Re-Auction Payment would be approximately $1.892 billion, which is calculated as the difference between $2.226 billion (the Northstar winning bid amounts) and $1 (the winning bids from re-auction) less the resulting $334 million overpayment of the Northstar Interim Payment. As discussed above, at this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction. We cannot predict with any degree of certainty the timing or outcome of any re-auction or the amount of any Northstar Re-Auction Payment.

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DISH Network Guaranty in Favor of the FCC for Certain Northstar Wireless Obligations. On October 1, 2015, DISH Network entered into a guaranty in favor of the FCC (the "FCC Northstar Guaranty") with respect to the Northstar Interim Payment (which was satisfied on October 1, 2015) and any Northstar Re-Auction Payment.

The FCC Northstar Guaranty provides, among other things, that during the period between the due date for the payments guaranteed under the FCC Northstar Guaranty and the date such guaranteed payments are paid: (i) Northstar Wireless' payment obligations to American II under the Northstar Credit Agreement will be subordinated to such guaranteed payments; and (ii) DISH Network or American II will withhold exercising certain rights as a creditor of Northstar Wireless.

Letters Exchanged between SNR Wireless and the FCC Wireless Bureau. As outlined in letters exchanged between SNR Wireless and the FCC Wireless Bureau, SNR Wireless paid the gross winning bid amounts for 244 AWS-3 Licenses (the "SNR Licenses") totaling approximately $4.271 billion through the application of funds already on deposit with the FCC and a portion of an additional loan from American III in an aggregate amount of approximately $344 million (which included an additional bid withdrawal payment of approximately $3 million). SNR Wireless also notified the FCC that it would not be paying the gross winning bid amounts for 113 AWS-3 Licenses totaling approximately $1.211 billion.

As a result of the nonpayment of those gross winning bid amounts, the FCC retained those licenses and SNR Wireless owed the FCC an additional interim payment of approximately $182 million (the "SNR Interim Payment"), which is equal to 15% of $1.211 billion. The SNR Interim Payment was recorded as an expense during the fourth quarter 2015. SNR Wireless immediately satisfied the SNR Interim Payment through a portion of an additional loan from American III in an aggregate amount of approximately $344 million. As a result, the FCC will not deem SNR Wireless to be a "current defaulter" under applicable FCC rules. In addition, the FCC Wireless Bureau acknowledged that SNR Wireless' nonpayment of those gross winning bid amounts does not constitute action involving gross misconduct, misrepresentation or bad faith. Therefore, the FCC concluded that such nonpayment will not affect the eligibility of SNR Wireless, its investors (including DISH Network) or their respective affiliates to participate in future spectrum auctions (including Auction 1000 and any re-auction of the AWS-3 licenses retained by the FCC). At this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction of those AWS-3 licenses.

If the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are greater than or equal to the winning bids of SNR Wireless, no additional amounts will be owed to the FCC. However, if those winning bids are less than the winning bids of SNR Wireless, then SNR Wireless will be responsible for the difference less any overpayment of the SNR Interim Payment (which will be recalculated as 15% of the winning bids from re-auction or other award) (the "SNR Re-Auction Payment"). For example, if the winning bids in a re-auction are $1, the SNR Re-Auction Payment would be approximately $1.029 billion, which is calculated as the difference between $1.211 billion (the SNR winning bid amounts) and $1 (the winning bids from re-auction) less the resulting $182 million overpayment of the SNR Interim Payment. As discussed above, at this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction. We cannot predict with any degree of certainty the timing or outcome of any re-auction or the amount of any SNR Re-Auction Payment.

DISH Network Guaranty in Favor of the FCC for Certain SNR Wireless Obligations. On October 1, 2015, DISH Network entered into a guaranty in favor of the FCC (the "FCC SNR Guaranty") with respect to the SNR Interim Payment (which was satisfied on October 1, 2015) and any SNR Re-Auction Payment. The FCC SNR Guaranty provides, among other things, that during the period between the due date for the payments guaranteed under the FCC SNR Guaranty and the date such guaranteed payments are paid: (i) SNR Wireless' payment obligations to American III under the SNR Credit Agreement will be subordinated to such guaranteed payments; and (ii) DISH Network or American III will withhold exercising certain rights as a creditor of SNR Wireless.

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FCC Licenses. On October 27, 2015, the FCC granted the Northstar Licenses to Northstar Wireless and the SNR Licenses to SNR Wireless, respectively, which are recorded in "FCC authorizations" on our Consolidated Balance Sheets. The AWS-3 Licenses are subject to certain interim and final build-out requirements. By October 2021, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 40% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Interim Build-Out Requirement"). By October 2027, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Final Build-Out Requirement").

If the AWS-3 Interim Build-Out Requirement is not met, the AWS-3 License term and the AWS-3 Final Build-Out Requirement may be accelerated by two years (from October 2027 to October 2025) for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement. If the AWS-3 Final Build-Out Requirement is not met, the authorization for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement may terminate. These wireless spectrum licenses expire in October 2027 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

Qui Tam. On September 23, 2016, the United States District Court for the District of Columbia unsealed a qui tam complaint that was filed by Vermont National Telephone Company ("Vermont National") against us; our wholly-owned subsidiaries, American AWS-3 Wireless I L.L.C., American II, American III, and DISH Wireless Holding L.L.C.; Charles W. Ergen (our Chairman) and Cantey M. Ergen (a member of our board of directors); Northstar Wireless; Northstar Spectrum; Northstar Manager; SNR Wireless; SNR HoldCo; SNR Management; and certain other parties. See "Contingencies – Litigation – Vermont National Telephone Company" in Note 14 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

D.C. Circuit Court Opinion. On August 29, 2017, the United States Court of Appeals for the District of Columbia Circuit (the "D.C. Circuit") in SNR Wireless LicenseCo, LLC, et al. v. Federal Communications Commission, 868 F.3d 1021 (D.C. Cir. 2017) (the "Appellate Decision") affirmed the Order in part, and remanded the matter to the FCC to give Northstar Wireless and SNR Wireless an opportunity to seek to negotiate a cure of the issues identified by the FCC in the Order (a "Cure"). On January 26, 2018, SNR Wireless and Northstar Wireless filed a petition for a writ of certiorari, asking the United States Supreme Court to hear an appeal from the Appellate Decision, which the United States Supreme Court denied on June 25, 2018.

Order on Remand. On January 24, 2018, the FCC released an Order on Remand, DA 18-70 (the "Order on Remand") purporting to establish a procedure to afford Northstar Wireless and SNR Wireless the opportunity to implement a Cure pursuant to the Appellate Decision. The Order on Remand provided that Northstar Wireless and SNR Wireless each had until April 24, 2018 to file the necessary documentation to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualifies for the very small business bidding credit that it sought in the AWS-3 Auction. Additionally, the Order on Remand provides that if either Northstar Wireless or SNR Wireless needs additional time to negotiate new or amended agreements, it may request to extend the deadline for such negotiations for an additional 45 days (extending the deadline to June 8, 2018). On April 16, 2018, the FCC approved Northstar Wireless' and SNR Wireless' requests to extend the deadline for such negotiations for an additional 45 days to June 8, 2018. On June 8, 2018, Northstar Wireless and SNR Wireless each filed amended agreements to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualifies for the very small business bidding

credit that it sought in the AWS-3 Auction. The Order on Remand also provided, among other things, until July 23, 2018 for certain third-parties to file comments about any changes to the agreements proposed by Northstar Wireless and SNR Wireless and several third-parties filed comments (with one opposition). On October 22, 2018, Northstar Wireless and SNR Wireless filed a response to the third-party comments.

Northstar Wireless and SNR Wireless have submitted eleven separate requests for meetings with the FCC regarding a Cure. To date, with the lone exception of the Office of former Commissioner Mignon Clyburn, the parties have been refused an audience with the Commissioners and staff of the FCC. Northstar Wireless and SNR Wireless have filed a Joint Application for Review of the Order on Remand requesting, among other things, an iterative negotiation process with the FCC regarding a Cure, which was denied on July 12, 2018. We cannot predict with any degree of certainty the timing or outcome of these proceedings.

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Northstar Operative Agreements

Northstar LLC Agreement. Northstar Spectrum is governed by a limited liability company agreement by and between American II and Northstar Manager (the "Northstar Spectrum LLC Agreement"). Pursuant to the Northstar Spectrum LLC Agreement, American II and Northstar Manager made pro-rata equity contributions in Northstar Spectrum.

On March 31, 2018, American II, Northstar Spectrum, and Northstar Manager amended and restated the Northstar Spectrum LLC Agreement, to, among other things: (i) exchange $6.870 billion of the amounts outstanding and owed by Northstar Wireless to American II pursuant to the Northstar Credit Agreement (as defined below) for 6,870,493 Class A Preferred Interests in Northstar Spectrum (the "Northstar Preferred Interests"); (ii) replace the existing investor protection provisions with the investor protections described by the FCC in Baker Creek Communications, LLC, Memorandum Opinion and Order, 13 FCC Rcd 18709, 18715 (1998); (iii) delete the obligation of Northstar Manager to consult with American II regarding budgets and business plans; and (iv) remove the requirement that Northstar Spectrum's systems be interoperable with ours.

The Northstar Preferred Interests: (a) are non-voting; (b) have a 12 percent mandatory quarterly distribution, which can be paid in cash or additional face amount of Northstar Preferred Interests at the sole discretion of Northstar Manager; and (c) have a liquidation preference equal to the then-current face amount of the Northstar Preferred Interests plus accrued and unpaid mandatory quarterly distributions in the event of certain liquidation events or deemed liquidation events (e.g., a merger or dissolution of Northstar Spectrum, or a sale of substantially all of Northstar Spectrum's assets). As a result of the exchange noted in (i) above, a principal amount of $500 million of debt remains under the Northstar Credit Agreement, as described below.

On June 7, 2018, American II, Northstar Spectrum, and Northstar Manager amended and restated the Second Amended and Restated Limited Liability Company Agreement, dated March 31, 2018, by and among American II, Northstar Spectrum, and Northstar Manager, to, among other things: (i) reduce the mandatory quarterly distribution for the Northstar Preferred Interests from 12 percent to eight percent from and after June 7, 2018; (ii) increase the window for Northstar Manager to "put" its interest in Northstar Spectrum to Northstar Spectrum after October 27, 2020 from 30 days to 90 days; (iii) provide an additional 90-day window for Northstar Manager to put its interest in Northstar Spectrum to Northstar Spectrum commencing on October 27, 2021; (iv) provide a right for Northstar Manager to require an appraisal of the fair market value of its interest in Northstar Spectrum at any time from October 27, 2022 through October 27, 2024, coupled with American II having the right to accept the offer to sell from Northstar Manager; (v) allow Northstar Manager to sell its interest in Northstar Spectrum without American II's consent any time after October 27, 2020 (previously October 27, 2025); (vi) allow Northstar Spectrum to conduct an initial public offering without American II's consent any time after October 27, 2022 (previously October 27, 2029); (vii) remove American II's rights of first refusal with respect to Northstar Manager's sale of its interest in Northstar Spectrum or Northstar Spectrum's sale of any AWS-3 Licenses; and (viii) remove American II's tag along rights with respect to Northstar Manager's sale of its interest in Northstar Spectrum.

Northstar Wireless Credit Agreement. On October 1, 2015, American II, Northstar Wireless and Northstar Spectrum amended the First Amended and Restated Credit Agreement dated October 13, 2014, by and among American II, as Lender, Northstar Wireless, as Borrower, and Northstar Spectrum, as Guarantor (as amended, the "Northstar Credit Agreement"), to provide, among other things, that: (i) the Northstar Interim Payment and any Northstar Re-Auction Payment will be made by American II directly to the FCC and will be deemed as loans under the Northstar Credit Agreement; (ii) the FCC is a third-party beneficiary with respect to American II's obligation to pay the Northstar Interim Payment and any Northstar Re-Auction Payment; (iii) in the event that the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are less than the winning bids of Northstar Wireless, the purchaser, assignee or transferee of any AWS-3 Licenses from Northstar Wireless is obligated to pay its pro-rata share of the difference (and Northstar Wireless remains jointly and severally liable for such pro-rata share); and (iv) during the period between the due date for the payments guaranteed under the FCC Northstar Guaranty (as discussed below) and the date such guaranteed payments are paid, Northstar Wireless' payment obligations to American II under the Northstar Credit Agreement will be subordinated to such guaranteed payments.

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On March 31, 2018, American II, Northstar Wireless, and Northstar Spectrum amended and restated the Northstar Credit Agreement, to, among other things: (i) lower the interest rate on the remaining $500 million principal balance under the Northstar Credit Agreement from 12 percent per annum to six percent per annum; (ii) eliminate the higher interest rate that would apply in the case of an event of default; and (iii) modify and/or remove certain obligations of Northstar Wireless to prepay the outstanding loan amounts.

On June 7, 2018, American II, Northstar Wireless, and Northstar Spectrum amended and restated the Northstar Credit Agreement to, among other things: (i) extend the maturity date on the remaining loan balance from seven years to 10 years; and (ii) remove the obligation of Northstar Wireless to obtain American II's consent for unsecured financing and equipment financing in excess of $25 million.

SNR Operative Agreements

SNR LLC Agreement. SNR HoldCo is governed by a limited liability company agreement by and between American III and SNR Management (the "SNR HoldCo LLC Agreement"). Pursuant to the SNR HoldCo LLC Agreement, American III and SNR Management made pro-rata equity contributions in SNR HoldCo.

On March 31, 2018, American III, SNR Holdco, SNR Wireless Management, and John Muleta amended and restated the SNR HoldCo LLC Agreement, to, among other things: (i) exchange $5.065 billion of the amounts outstanding and owed by SNR Wireless to American III pursuant to the SNR Credit Agreement (as defined below) for 5,065,415 Class A Preferred Interests in SNR Holdco (the "SNR Preferred Interests"); (ii) replace the existing investor protection provisions with the investor protections described by the FCC in Baker Creek Communications, LLC, Memorandum Opinion and Order, 13 FCC Rcd 18709, 18715 (1998); (iii) delete the obligation of SNR Management to consult with American III regarding budgets and business plans; and (iv) remove the requirement that SNR Management's systems be interoperable with ours. The SNR Preferred Interests: (a) are non-voting; (b) have a 12 percent mandatory quarterly distribution, which can be paid in cash or additional face amount of SNR Preferred Interests at the sole discretion of SNR Management; and (c) have a liquidation preference equal to the then-current face amount of the SNR Preferred Interests plus accrued and unpaid mandatory quarterly distributions in the event of certain liquidation events or deemed liquidation events (e.g., a merger or dissolution of SNR Holdco, or a sale of substantially all of SNR Holdco's assets). As a result of the exchange noted in (i) above, a principal amount of $500 million of debt remains under the SNR Credit Agreement, as described below.

On June 7, 2018, American III, SNR Holdco, SNR Management, and John Muleta amended and restated the Second Amended and Restated Limited Liability Company Agreement, dated March 31, 2018, by and among American III, SNR Holdco, SNR Management and John Muleta, to, among other things: (i) reduce the mandatory quarterly distribution for the SNR Preferred Interests from 12 percent to eight percent from and after June 7, 2018; (ii) increase the window for SNR Management to "put" its interest in SNR Holdco to SNR Holdco after October 27, 2020 from 30 days to 90 days; (iii) provide an additional 90-day window for SNR Management to put its interest in SNR Holdco to SNR Holdco commencing on October 27, 2021; (iv) provide a right for SNR Management to require an appraisal of

the fair market value of its interest in SNR Holdco at any time from October 27, 2022 through October 27, 2024, coupled with American III having the right to accept the offer to sell from SNR Management; (v) allow SNR Management to sell its interest in SNR Holdco without American III's consent any time after October 27, 2020 (previously October 27, 2025); (vi) allow SNR Holdco to conduct an initial public offering without American III's consent any time after October 27, 2022 (previously October 27, 2029); (vii) remove American III's rights of first refusal with respect to SNR Management's sale of its interest in SNR Holdco or SNR Holdco's sale of any AWS-3 Licenses; and (viii) remove American III's tag along rights with respect to SNR Management's sale of its interest in SNR Holdco.

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SNR Credit Agreement. On October 1, 2015, American III, SNR Wireless and SNR HoldCo amended the First Amended and Restated Credit Agreement dated October 13, 2014, by and among American III, as Lender, SNR Wireless, as Borrower, and SNR HoldCo, as Guarantor (as amended, the "SNR Credit Agreement"), to provide, among other things, that: (i) the SNR Interim Payment and any SNR Re-Auction Payment will be made by American III directly to the FCC and will be deemed as loans under the SNR Credit Agreement; (ii) the FCC is a third-party beneficiary with respect to American III's obligation to pay the SNR Interim Payment and any SNR Re-Auction Payment; (iii) in the event that the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are less than the winning bids of SNR Wireless, the purchaser, assignee or transferee of any AWS-3 Licenses from SNR Wireless is obligated to pay its pro-rata share of the difference (and SNR Wireless remains jointly and severally liable for such pro-rata share); and (iv) during the period between the due date for the payments guaranteed under the FCC SNR Guaranty (as discussed below) and the date such guaranteed payments are paid, SNR Wireless' payment obligations to American III under the SNR Credit Agreement will be subordinated to such guaranteed payments.

On March 31, 2018, American III, SNR Wireless, and SNR Holdco amended and restated the SNR Credit Agreement, to, among other things: (i) lower the interest rate on the remaining $500 million principal balance under the SNR Credit Agreement from 12 percent per annum to six percent per annum; (ii) eliminate the higher interest rate that would apply in the case of an event of default; and (iii) modify and/or remove certain obligations of SNR Wireless to prepay the outstanding loan amounts.

On June 7, 2018, American III, SNR Wireless, and SNR Holdco amended and restated the SNR Credit Agreement to, among other things: (i) extend the maturity date on the remaining loan balance from seven years to 10 years; and (ii) remove the obligation of SNR Wireless to obtain American III's consent for unsecured financing and equipment financing in excess of $25 million.

The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate the Northstar Licenses and the SNR Licenses, comply with regulations applicable to the Northstar Licenses and the SNR Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. There can be no assurance that we will be able to obtain a profitable return on our non-controlling investments in the Northstar Entities and the SNR Entities. See "We face certain risks related to our non-controlling investments in the Northstar Entities and the SNR Entities, which may have a material adverse effect on our business, results of operations and financial condition" below for further information.

Impairment of Assets

Furthermore, the fair values of wireless spectrum licenses and related assets may vary significantly in the future. In particular, valuation swings could occur if:

- consolidation in the wireless industry allows or requires wireless carriers to sell significant portions of their wireless spectrum holdings, which could in turn reduce the value of our spectrum holdings;
- a sale of spectrum by one or more wireless providers occurs;
- the FCC pursues certain policies designed to increase the number of wireless spectrum licenses available in each of our markets; or
- the FCC conducts additional wireless spectrum auctions.

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If the fair value of our wireless spectrum licenses were to decline significantly, the value of these licenses could be subject to impairment charges. We assess potential impairments to our indefinite-lived intangible assets annually or more often if indicators of impairment arise to determine whether there is evidence that indicate an impairment condition may exist.

We capitalize our interest expense associated with the acquisition or construction of certain assets, including, among other things, our wireless spectrum licenses. As the carrying amount of these licenses exceeds the carrying value of our long-term debt, materially all of our interest expense is being capitalized, and has been since June 14, 2017. This capitalized interest increases the carrying amount of these licenses for purposes of impairment testing, under which we consider whether it is more likely than not that the fair value of these licenses exceeds the carrying amount of these licenses. An increase in the carrying amount of these licenses combined with other changes in circumstances and/or market conditions could result in an increased risk of an impairment of these licenses in the future and an impairment of these assets may have a material adverse effect on our business, results of operations and financial condition.

We face certain risks related to our non-controlling investments in the Northstar Entities and the SNR Entities, which may have a material adverse effect on our business, results of operations and financial condition.

In addition to the risks described in “Item 1A. Risk Factors – Acquisition and Capital Structure Risks – We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses” in this Annual Report on Form 10-K, we face certain other risks related to our non-controlling investments in the Northstar Entities and the SNR Entities, including, among others, the risks described below. Any of the following risks, among others, may have a material adverse effect on our business, results of operations and financial condition.

On October 27, 2015, the FCC granted the Northstar Licenses to Northstar Wireless and the SNR Licenses to SNR Wireless, respectively. We do not own or control the Northstar Licenses or the SNR Licenses nor do we control the Northstar Entities or the SNR Entities. We do not have a right to require Northstar Manager or SNR Management to sell their respective ownership interests in Northstar Spectrum and SNR Holdco to us. Northstar Manager, as the sole manager of Northstar Spectrum, and SNR Management, as the sole manager of SNR Holdco, will have the exclusive right and power to manage, operate and control Northstar Spectrum and SNR Holdco, respectively, subject to certain limited protective provisions for the benefit of American II and American III, respectively. Northstar Manager and SNR Management will have the ability, but not the obligation, to require Northstar Spectrum and SNR Holdco, respectively, to purchase Northstar Manager’s and SNR Management’s ownership interests in those respective entities after the fifth and sixth anniversaries of the grant date of the Northstar Licenses and the SNR Licenses (and in certain circumstances prior to the fifth anniversary of the grant date of the Northstar Licenses and the SNR Licenses). Thus, we cannot be certain that the Northstar Licenses or the SNR Licenses will be developed in a manner fully consistent with our current or future business plans.

Each of Northstar Wireless and SNR Wireless applied to receive bidding credits of 25% as designated entities under applicable FCC rules. The FCC implemented rules and policies governing the designated entity program that are intended to ensure that qualifying designated entities are not controlled by operators or investors that do not meet certain qualification tests. Qualification is also subject to challenge in qui tam lawsuits filed by private parties alleging that participants have defrauded the government in which the person bringing the suit may share in any recovery by the government. Furthermore, litigation surrounding designated entity structures, increased regulatory scrutiny or third party or government lawsuits with respect to our non-controlling investments in the Northstar Entities and the SNR Entities could result in fines, and in certain cases, license revocation and/or criminal penalties, which could have a material adverse effect on our business, financial condition or results of operations.

On August 18, 2015, the FCC released the Order in which the FCC determined, among other things, that DISH Network has a controlling interest in, and is an affiliate of, Northstar Wireless and SNR Wireless, and therefore DISH Network's revenues should be attributed to them, which in turn makes Northstar Wireless and SNR Wireless ineligible to receive the Bidding Credit Amounts (approximately $1.961 billion for Northstar Wireless and $1.370 billion for SNR Wireless).

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Each of Northstar Wireless and SNR Wireless has filed a notice of appeal and petition for review of the Order with the D.C. Circuit, challenging, among other things, the FCC's determination that they are ineligible to receive the Bidding Credit Amounts. Oral arguments were presented to the Court on September 26, 2016. On August 29, 2017, the D.C. Circuit issued its opinion, holding that: (i) the FCC reasonably applied its precedent to determine that DISH Network exercised a disqualifying degree of de facto control over Northstar Wireless and SNR Wireless (rendering them ineligible to claim the Bidding Credit Amounts), but (ii) the FCC did not give Northstar Wireless and SNR Wireless adequate notice that, if their relationships with DISH Network cost them the Bidding Credit Amounts, the FCC would also deny them an opportunity to cure. The case was remanded to the FCC to give Northstar Wireless and SNR Wireless an opportunity to seek to negotiate a cure for the de facto control the FCC found that DISH Network exercises over them. On January 24, 2018, the FCC released an Order on Remand, DA 18-70 (the "Order on Remand") purporting to establish a procedure to afford Northstar Wireless and SNR Wireless the opportunity to implement a Cure pursuant to the Appellate Decision. The Order on Remand provided that Northstar Wireless and SNR Wireless each had until April 24, 2018 to file the necessary documentation to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualifies for the very small business bidding credit that it sought in the AWS-3 Auction. Additionally, the Order on Remand provides that if either Northstar Wireless or SNR Wireless needs additional time to negotiate new or amended agreements, it may request to extend the deadline for such negotiations for an additional 45 days (extending the deadline to June 8, 2018). On April 16, 2018, the FCC approved Northstar Wireless' and SNR Wireless' requests to extend the deadline for such negotiations for an additional 45 days to June 8, 2018.

On June 8, 2018, Northstar Wireless and SNR Wireless each filed amended agreements to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualifies for the very small business bidding credit that it sought in the AWS-3 Auction. The Order on Remand also provided, among other things, until July 23, 2018 for certain third-parties to file comments about any changes to the agreements proposed by Northstar Wireless and SNR Wireless and several third-parties filed comments (with one opposition). On October 22, 2018, Northstar Wireless and SNR Wireless filed a response to the third-party comments. We cannot predict with any degree of certainty the timing or outcome of these proceedings.

See "We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses" above for further information.

In addition, on September 23, 2016, the United States District Court for the District of Columbia unsealed a qui tam complaint that was filed by Vermont National against us; our wholly-owned subsidiaries, American AWS-3 Wireless I L.L.C., American II, American III, and DISH Wireless Holding L.L.C.; Charles W. Ergen (our Chairman) and Cantey M. Ergen (a member of our board of directors); Northstar Wireless; Northstar Spectrum; Northstar Manager; SNR Wireless; SNR HoldCo; SNR Management; and certain other parties. See "Commitments and Contingencies – Contingencies – Litigation – Vermont National Telephone Company" in Note 14 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

We may need to make significant additional loans to the Northstar Entities and the SNR Entities, or they may need to partner with others, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate the Northstar Licenses and the SNR Licenses, comply with regulations applicable to the Northstar Licenses and the SNR Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. We may need to raise significant additional capital in the future, which may not be available on acceptable terms or at all, to make further investments in the Northstar Entities and the SNR Entities. There can be no assurance that we will be able to obtain a profitable return on our non-controlling investments in the Northstar Entities and the SNR Entities.

To the extent that we commercialize our wireless spectrum licenses, we will face certain risks entering and competing in the wireless services industry and operating a wireless services business.

We have made substantial investments to acquire certain wireless spectrum licenses and related assets. These wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements.

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We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers. See "We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses" above for further information. We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on acceptable terms or at all. There can be no assurance that we will be able to develop and implement a business model that will realize a return on these wireless spectrum licenses or that we will be able to profitably deploy the assets represented by these wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations.

To the extent we commercialize our wireless spectrum licenses and enter the wireless services industry, a wireless services business presents certain risks. Any of the following risks, among others, may have a material adverse effect on our future business, results of operations and financial condition.

- The wireless services industry is competitive. We have limited experience in the wireless services industry, which is a competitive industry, with increasing customer demands for data services that require increasing capital resources to maintain a robust network. The wireless services industry has incumbent and established competitors such as Verizon, AT&T, T-Mobile USA Inc. ("T-Mobile") and Sprint Corporation ("Sprint"), with substantial market share. Some of these companies have greater financial, marketing and other resources than us, and have existing cost and operational advantages that we lack. Market saturation is expected to continue to cause the wireless services industry's customer growth rate to moderate in comparison to historical growth rates, leading to increased competition for customers. As the industry matures, competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of wireless services. Furthermore, the cost of attracting a new customer is generally higher than the cost associated with retaining an existing customer. In addition, we may face increasing competition from wireless telecommunications providers who offer mobile video offerings. Wireless mobile video offerings have become more prevalent in the marketplace as wireless telecommunications providers have expanded the fourth generation of wireless communications. In July 2015, AT&T completed its acquisition of DirecTV, our direct competitor and the largest satellite TV provider in the United States, which has an OTT service, DirecTV Now, that competes directly with our Sling TV services. As a result of this acquisition, DirecTV, among other things, has increased access to capital, access to AT&T's nationwide platform for wireless mobile video and the ability to more seamlessly bundle its video services with AT&T's broadband Internet access and wireless services. The combined company may be able to, among other things, pressure third-party content owners and programmers to withhold online rights from us; utilize its increased leverage over third-party content owners and programmers to reduce the price it pays for programming at the expense of other MVPDs, including us; thwart our entry into the wireless market, by, among other things, refusing to enter into data roaming agreements with us; foreclose or degrade our online video offerings at various points in the broadband pipe; and impose data caps on consumers who access our online video offerings. In addition, in October 2016, AT&T announced its acquisition of Time Warner (which owns certain Turner, HBO and Cinemax channels), which was completed in June 2018. The addition of Time Warner's media holdings, which include content, such as HBO, TBS, TNT, CNN, and movies, would, among other things, provide the combined company increased scale and leverage in the converging video, mobile, and broadband industries.

Also, in December 2017, Walt Disney Company announced its acquisition of certain assets of Twenty-First Century Fox, Inc. These transactions may affect us adversely by, among other things, making it more difficult for us to obtain access to certain programming networks on nondiscriminatory and fair terms, or at all. For example, in connection with AT&T's acquisition of Time Warner, Turner sent all of its distributors written, irrevocable offers to submit disputes over the price and other terms of Turner programming to binding arbitration and to guarantee continued access to that programming while any arbitration is pending.

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However, in October 2018, AT&T removed its HBO and Cinemax channels, which are not part of Turner, from our DISH TV and Sling TV programming lineup, as we and AT&T have been unable to negotiate the terms and conditions of a new programming carriage contract. Furthermore, AT&T offers its programming, including its HBO and Cinemax channels, directly to consumers over the Internet and provides HBO for free to subscribers of its streaming service AT&T's "Watch TV." In addition, AT&T's current zero rating practice may give an unfair advantage to AT&T's own video content, which currently includes, among others, DirecTV services, including "DirecTV Now," and AT&T's "Watch TV" on mobile devices.

- Our ability to compete effectively would be dependent on a number of factors. Our ability to compete effectively would depend on, among other things, our network quality, capacity and coverage; the pricing of our products and services; the quality of customer service; our development of new and enhanced products and services; the reach and quality of our sales and distribution channels; our ability to predict and adapt to future changes in technologies and changes in consumer demands; and capital resources. It would also depend on how successfully we anticipate and respond to various competitive factors affecting the industry, including, among others, new technologies and business models, products and services that may be introduced by competitors, changes in consumer preferences, the demand for and usage of data, video and other voice and non-voice services, demographic trends, economic conditions, and discount pricing and other strategies that may be implemented by competitors. It may be difficult for us to differentiate our products and services from other competitors in the industry, which may limit our ability to attract customers. Our success also may depend on our ability to access and deploy adequate spectrum, deploy new technologies and offer attractive services to customers. For example, we may not be able to obtain and offer certain technologies or features that are subject to competitor patents or other exclusive arrangements.

- We would depend on third parties to provide us with infrastructure and products and services. We would depend on various key suppliers and vendors to provide us, directly or through other suppliers, with infrastructure, equipment and services, such as switch and network equipment, handsets and other devices and equipment that we would need in order to operate a wireless services business and provide products and services to our customers. For example, handset and other device suppliers often rely on one vendor for the manufacture and supply of critical components, such as chipsets, used in their devices. If these suppliers or vendors fail to provide equipment or services on a timely basis or fail to meet performance expectations, we may be unable to provide products and services as and when expected by our customers. Any difficulties experienced with these suppliers and vendors could result in additional expense and/or delays in introducing our wireless services. Our efforts would involve significant expense and require strategic management decisions on, and timely implementation of, equipment choices, network deployment and management, and service offerings. In addition, these suppliers and vendors may also be subject to litigation with respect to technology on which we would depend, including litigation involving claims of patent infringement.

- Wireless services and our wireless spectrum licenses are subject to government regulation. Wireless services and our wireless spectrum licenses are subject to regulation by the FCC and other federal, state and local, as well as international, governmental authorities. These governmental authorities could adopt regulations or take other actions that would adversely affect our business prospects, making it more difficult and/or expensive to commercialize our wireless spectrum licenses or acquire additional licenses. The licensing, construction, operation, sale and interconnection arrangements of wireless telecommunications systems are regulated by the FCC and, depending on the jurisdiction, other federal and international, state and local regulatory agencies. In particular, the FCC imposes significant regulation on licensees of wireless spectrum with respect to how radio spectrum is used by licensees, the nature of the services that licensees may offer and how the services may be offered, and resolution of issues of interference between spectrum bands. The FCC grants wireless licenses for terms of generally ten years that are

subject to renewal or revocation based on certain factors depending on the license including, among others, public interest considerations, level and quality of services and/or operations provided by the licensee, frequency and duration of any interruptions or outages of services and/or operations provided by the licensee, and the extent to which service is provided to, and/or operation is provided in, rural areas and tribal lands. There can be no assurances that our wireless spectrum licenses will be renewed or that we will be able to obtain additional licenses. Failure to comply with FCC requirements in a given license area could result in revocation of the license for that license area. In addition, the FCC uses its transactional "spectrum screen" to identify prospective wireless transactions that may require additional competitive scrutiny.

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If a proposed transaction would exceed the spectrum screen threshold, the FCC undertakes a more detailed analysis of relevant market conditions in the impacted geographic areas to determine whether the transaction would reduce competition without offsetting public benefits. If a proposed spectrum acquisition exceeds the spectrum screen trigger such additional review could extend the duration of the regulatory review process and there can be no assurance that such proposed spectrum acquisition would ultimately be completed in whole or in part. For further information related to our wireless spectrum licenses, including build-out requirements, see other Risk Factors above.

Our wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The failure to meet such build-out and/or renewal requirements may have a material adverse effect on our business, results of operations and financial condition.

Our wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements, and there is no guarantee that the FCC will find our build-out sufficient to meet the build-out requirements. Failure to comply with FCC build-out requirements and/or renewal requirements in a given license area could result in revocation of the license for that license area. The revocation of our wireless spectrum licenses may have a material adverse effect on our future business, results of operations and financial condition. For further information related to our wireless spectrum licenses, including build-out requirements, see other Risk Factors above.

We rely on highly skilled personnel for our wireless business, including without limitation our ability to meet build-out requirements, and if we are unable to hire and retain key personnel or hire qualified personnel then our wireless business may be adversely affected.

We believe that our wireless business, including our ability to meet build-out requirements, is dependent on our ability to identify, hire, develop, motivate, and retain a new team of highly skilled personnel with knowledge of the wireless industry. Our wireless business will be adversely affected if we fail to effectively identify, hire, develop, motivate, and retain highly skilled personnel with knowledge of the wireless industry.

We may pursue acquisitions and other strategic transactions to complement or expand our business that may not be successful, and we may lose up to the entire value of our investment in these acquisitions and transactions.

Our future success may depend on opportunities to buy other businesses or technologies that could complement, enhance or expand our current businesses or products or that might otherwise offer us growth opportunities. To pursue this strategy successfully, we must identify attractive acquisition or investment opportunities and successfully complete transactions, some of which may be large and complex. We may not be able to identify or complete attractive acquisition or investment opportunities due to, among other things, the intense competition for these transactions. If we are not able to identify and complete such acquisition or investment opportunities, our future results of operations and financial condition may be adversely affected.

We may be unable to obtain in the anticipated timeframe, or at all, any regulatory approvals required to complete proposed acquisitions and other strategic transactions. Furthermore, the conditions imposed for obtaining any necessary approvals could delay the completion of such transactions for a significant period of time or prevent them from occurring at all. We may not be able to complete such transactions and such transactions, if executed, pose significant risks and could have a negative effect on our operations. Any transactions that we are able to identify and complete may involve a number of risks, including:

- the diversion of our management's attention from our existing businesses to integrate the operations and personnel of the acquired or combined business or joint venture;

- possible adverse effects on our operating results during the integration process;

- a high degree of risk inherent in these transactions, which could become substantial over time, and higher exposure to significant financial losses if the underlying ventures are not successful;

- our possible inability to achieve the intended objectives of the transaction; and

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- the risks associated with complying with regulations applicable to the acquired business, which may cause us to incur substantial expenses.

In addition, we may not be able to successfully or profitably integrate, operate, maintain and manage our newly acquired operations or employees. We may not be able to maintain uniform standards, controls, procedures and policies, and this may lead to operational inefficiencies. In addition, the integration process may strain our financial and managerial controls and reporting systems and procedures.

New acquisitions, joint ventures and other transactions may require the commitment of significant capital that would otherwise be directed to investments in our existing business. To pursue acquisitions and other strategic transactions, we may need to raise additional capital in the future, which may not be available on acceptable terms or at all.

In addition to committing capital to complete the acquisitions, substantial capital may be required to operate the acquired businesses following their acquisition. These acquisitions may result in significant financial losses if the intended objectives of the transactions are not achieved. Some of the businesses acquired by us have experienced significant operating and financial challenges in their recent history, which in some cases resulted in these businesses commencing bankruptcy proceedings prior to our acquisition. We may acquire similar businesses in the future.

There is no assurance that we will be able to successfully address the challenges and risks encountered by these businesses following their acquisition. If we are unable to successfully address these challenges and risks, our business, financial condition and/or results of operations may suffer.

We may need additional capital, which may not be available on acceptable terms or at all, to continue investing in our business and to finance acquisitions and other strategic transactions.

We may need to raise significant additional capital in the future, which may not be available on acceptable terms or at all, to among other things, continue investing in our business, construct and launch new satellites, deploy our wireless network and to pursue acquisitions and other strategic transactions (including significant investments in wireless). Weakness in the equity markets could make it difficult for us to raise equity financing without incurring substantial dilution to our existing shareholders. Adverse changes in the credit markets, including rising interest rates, could increase our borrowing costs and/or make it more difficult for us to obtain financing for our operations or refinance existing indebtedness. In addition, economic weakness or weak results of operations may limit our ability to generate sufficient internal cash to fund investments, capital expenditures, acquisitions and other strategic transactions, as well as to fund ongoing operations and service our debt. We may be unable to generate cash flows from operating activities sufficient to pay the principal, premium, if any, and interest on our debt and other obligations. If we are unable to service our debt and other obligations from cash flows from operating activities, we may need to refinance or restructure all or a portion of such obligations prior to maturity. Any refinancing or restructuring could have a material adverse effect on our business, results of operations and/or financial condition. In addition, we cannot guarantee that

any refinancing or restructuring would sufficiently meet any debt or other obligations then due. Furthermore, our borrowing costs can be affected by short and long-term debt ratings assigned by independent rating agencies, which are based, in significant part, on our performance as measured by their credit metrics. A decrease in these ratings would likely increase our cost of borrowing and/or make it more difficult for us to obtain financing. A severe disruption in the global financial markets could impact some of the financial institutions with which we do business, and such instability could also affect our access to financing. 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.

See “We have made substantial investments to acquire certain wireless spectrum licenses and other related assets. In addition, we have made substantial non-controlling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses” above for further information.

We have substantial debt outstanding and may incur additional debt.

As of December 31, 2018, our total long-term debt and capital lease obligations, including the debt of our subsidiaries, was $15.153 billion. Our debt levels could have significant consequences, including:

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- making it more difficult to satisfy our obligations;
- a dilutive effect on our outstanding equity capital or future earnings;
- increasing our vulnerability to general adverse economic conditions, including changes in interest rates;
- requiring us to devote a substantial portion of our cash to make interest and principal payments on our debt, thereby reducing the amount of cash available for other purposes. As a result, we would have limited financial and operating flexibility in responding to changing economic and competitive conditions;
- limiting our ability to raise additional debt because it may be more difficult for us to obtain debt financing on attractive terms; and
- placing us at a disadvantage compared to our competitors that are less leveraged.

In addition, we may incur substantial additional debt in the future. The terms of the indentures relating to our senior notes permit us to incur additional debt. If new debt is added to our current debt levels, the risks we now face could intensify.

The conditional conversion features of our 3 3/8% Convertible Notes due 2026 (the "Convertible Notes due 2026") and our 2 3/8% Convertible Notes due 2024 (the "Convertible Notes due 2024," and collectively with the Convertible Notes due 2026, the "Convertible Notes"), if triggered, may adversely affect our financial condition.

In the event the conditional conversion features of the Convertible Notes are triggered, holders of the Convertible Notes will be entitled to convert the Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our Class A common stock, we would be required to make cash payments to satisfy all or a portion of our conversion obligation based on the conversion rate, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which could result in a material reduction of our net working capital.

The convertible note hedge and warrant transactions that we entered into in connection with the offering of the Convertible Notes due 2026 may affect the value of the Convertible Notes due 2026 and our Class A common stock.

In connection with the offering of the Convertible Notes due 2026, we entered into convertible note hedge transactions with certain option counterparties (each an "option counterparty"). The convertible note hedge transactions are expected generally to reduce the potential dilution upon conversion of the Convertible Notes due 2026 and/or offset any cash payments we are required to make in excess of the principal amount of converted Convertible Notes due 2026, as the case may be. We also entered into warrant transactions with each option counterparty. The warrant transactions could separately have a dilutive effect on our Class A common stock to the extent that the market price per share of our Class A common stock exceeds the strike price of the warrants, unless we elect to settle the warrants in cash. In connection with establishing its initial hedge of the convertible note hedge and warrant transactions, each

option counterparty or an affiliate thereof may have entered into various derivative transactions with respect to our Class A common stock concurrently with or shortly after the pricing of the Convertible Notes due 2026. This activity could increase (or reduce the size of any decrease in) the market price of our Class A common stock or the Convertible Notes due 2026 at that time. In addition, each option counterparty or an affiliate thereof may modify its hedge position by entering into or unwinding various derivatives with respect to our Class A common stock and/or purchasing or selling our Class A common stock or other securities of ours in secondary market transactions prior to the maturity of the Convertible Notes due 2026 (and is likely to do so during any observation period related to a conversion of the Convertible Notes due 2026). This activity could also cause or avoid an increase or a decrease in the market price of our Class A common stock or the Convertible Notes due 2026. In addition, if any such convertible note hedge and warrant transactions fail to become effective, each option counterparty may unwind its hedge position with respect to our Class A common stock, which could adversely affect the value of our Class A common stock and the value of the Convertible Notes due 2026.

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We are subject to counterparty risk with respect to the convertible note hedge transactions.

Each option counterparty to the convertible note hedge transactions is a financial institution, and we will be subject to the risk that it might default under the convertible note hedge transaction. Our exposure to the credit risk of an option counterparty will not be secured by any collateral. Global economic conditions have from time to time resulted in the actual or perceived failure or financial difficulties of many financial institutions, including the bankruptcy filing by Lehman Brothers Holdings Inc. and its various affiliates. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under our transactions with the option counterparty. Our exposure will depend on many factors but, generally, the increase in our exposure will be correlated to the increase in the market price and in the volatility of our Class A common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our Class A common stock. We can provide no assurances as to the financial stability or viability of any option counterparty.

From time to time a portion of our investment portfolio may be invested in securities that have limited liquidity and may not be immediately accessible to support our financing needs, including investments in public companies that are highly speculative and have experienced and continue to experience volatility.

From time to time a portion of our investment portfolio may be invested in strategic investments, and as a result, a portion of our portfolio may have restricted liquidity. If the credit ratings of these securities deteriorate or there is a lack of liquidity in the marketplace, we may be required to record impairment charges. Moreover, the uncertainty of domestic and global financial markets can greatly affect the volatility and value of our marketable investment securities. In addition, a portion of our investment portfolio may include strategic and financial investments in debt and equity securities of public companies that are highly speculative and experience volatility. Typically, these investments are concentrated in a small number of companies. The fair value of these investments can be significantly impacted by the risk of adverse changes in securities markets generally, as well as risks related to the performance of the companies whose securities we have invested in, risks associated with specific industries, and other factors. These investments are subject to significant fluctuations in fair value due to the volatility of the securities markets and of the underlying businesses. The concentration of these investments as a percentage of our overall investment portfolio fluctuates from time to time based on, among other things, the size of our investment portfolio and our ability to liquidate these investments. In addition, because our portfolio may be concentrated in a limited number of companies, we may experience a significant loss if any of these companies, among other things, defaults on its obligations, performs poorly, does not generate adequate cash flow to fund its operations, is unable to obtain necessary financing on acceptable terms, or at all, or files for bankruptcy, or if the sectors in which these companies operate experience a market downturn. To the extent we require access to funds, we may need to sell these securities under unfavorable market conditions, record impairment charges and fall short of our financing needs.

It may be difficult for a third party to acquire us, even if doing so may be beneficial to our shareholders, because of our ownership structure.

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

- a capital structure with multiple classes of common stock: a Class A that entitles the holders to one vote per share, a Class B that entitles the holders to ten votes per share, a Class C that entitles the holders to one vote per share, except upon a change in control of our company in which case the holders of Class C are entitled to ten votes per share;

- a provision that authorizes the issuance of "blank check" preferred stock, which could be issued by our Board of Directors to increase the number of outstanding shares and thwart a takeover attempt;

- a provision limiting who may call special meetings of shareholders; and

- a provision establishing advance notice requirements for nominations of candidates for election to our Board of Directors or for proposing matters that can be acted upon by shareholders at shareholder meetings.

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As discussed below, Charles W. Ergen, our Chairman, controls approximately 91.3% of the total voting power of our company. Such control by Mr. Ergen may make it impractical for any third party to effect a change in control of our company. In addition, pursuant to our articles of incorporation we have a significant amount of authorized and unissued stock which would allow our Board of Directors to issue shares to persons friendly to current management, thereby protecting the continuity of its management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us.

We are controlled by one principal stockholder who is also our Chairman.

Charles W. Ergen, our Chairman, beneficially owns approximately 51.7% of our total equity securities (assuming conversion of all Class B Common Stock into Class A Common Stock) and controls approximately 91.3% of the total voting power. Through his voting power, Mr. Ergen has the ability to elect a majority of our directors and to control all other matters requiring the approval of our stockholders. As a result, DISH Network is a “controlled company” as defined in the Nasdaq listing rules and is, therefore, not subject to Nasdaq requirements that would otherwise require us to have: (i) a majority of independent directors; (ii) a nominating committee composed solely of independent directors; (iii) compensation of our executive officers determined by a majority of the independent directors or a compensation committee composed solely of independent directors; and (iv) director nominees selected, or recommended for the Board’s selection, either by a majority of the independent directors or a nominating committee composed solely of independent directors. Mr. Ergen is also the principal stockholder and Chairman of EchoStar.

Legal and Regulatory Risks

The rulings in the Telemarketing litigation requiring us to pay up to an aggregate amount of $341 million and imposing certain injunctive relief against us, if upheld, would have a material adverse effect on our cash, cash equivalents and marketable investment securities balances and our business operations.

On March 25, 2009, our wholly-owned subsidiary DISH Network L.L.C. was sued in a civil action by the United States Attorney General and several states in the United States District Court for the Central District of Illinois (the “FTC Action”), alleging violations of the Telephone Consumer Protection Act (“TCPA”) and the Telemarketing Sales Rule (“TSR”), as well as analogous state statutes and state consumer protection laws. The plaintiffs alleged that we, directly and through certain independent third-party retailers and their affiliates, committed certain telemarketing violations. On December 23, 2013, the plaintiffs filed a motion for summary judgment, which indicated for the first time that the state plaintiffs were seeking civil penalties and damages of approximately $270 million and that the federal plaintiff was seeking an unspecified amount of civil penalties (which could substantially exceed the civil penalties and damages being sought by the state plaintiffs). The plaintiffs were also seeking injunctive relief that if granted would, among other things, enjoin DISH Network L.L.C., whether acting directly or indirectly through authorized telemarketers or independent third-party retailers, from placing any outbound telemarketing calls to market or promote its goods or services for five years, and enjoin DISH Network L.L.C. from accepting activations or sales from certain existing independent third-party retailers and from certain new independent third-party retailers, except

under certain circumstances. We also filed a motion for summary judgment, seeking dismissal of all claims. On December 12, 2014, the Court issued its opinion with respect to the parties' summary judgment motions. The Court found that DISH Network L.L.C. was entitled to partial summary judgment with respect to one claim in the action. In addition, the Court found that the plaintiffs were entitled to partial summary judgment with respect to ten claims in the action, which included, among other things, findings by the Court establishing DISH Network L.L.C.'s liability for a substantial amount of the alleged outbound telemarketing calls by DISH Network L.L.C. and certain of its independent third-party retailers that were the subject of the plaintiffs' motion. The Court did not issue any injunctive relief and did not make any determination on civil penalties or damages, ruling instead that the scope of any injunctive relief and the amount of any civil penalties or damages were questions for trial.

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In pre-trial disclosures, the federal plaintiff indicated that it intended to seek up to $900 million in alleged civil penalties, and the state plaintiffs indicated that they intended to seek as much as $23.5 billion in alleged civil penalties and damages. The plaintiffs also modified their request for injunctive relief. Their requested injunction, if granted, would have enjoined DISH Network L.L.C. from placing outbound telemarketing calls unless and until: (i) DISH Network L.L.C. hired a third-party consulting organization to perform a review of its call center operations; (ii) such third-party consulting organization submitted a telemarketing compliance plan to the Court and the federal plaintiff; (iii) the Court held a hearing on the adequacy of the plan; (iv) if the Court approved the plan, DISH Network L.L.C. implemented the plan and verified to the Court that it had implemented the plan; and (v) the Court issued an order permitting DISH Network L.L.C. to resume placing outbound telemarketing calls. The plaintiffs' modified request for injunctive relief, if granted, would have also enjoined DISH Network L.L.C. from accepting customer orders solicited by certain independent third-party retailers unless and until a similar third-party review and Court approval process was followed with respect to the telemarketing activities of its independent third-party retailer base to ensure compliance with the TSR.

The first phase of the bench trial took place January 19, 2016 through February 11, 2016. In closing briefs, the federal plaintiff indicated that it still was seeking $900 million in alleged civil penalties; the California state plaintiff indicated that it was seeking $100 million in alleged civil penalties and damages for its state law claims (in addition to any amounts sought on its federal law claims); the Ohio state plaintiff indicated that it was seeking approximately $10 million in alleged civil penalties and damages for its state law claims (in addition to any amounts sought on its federal law claims); and the Illinois and North Carolina state plaintiffs did not state the specific alleged civil penalties and damages that they were seeking; but the state plaintiffs took the general position that any damages award less than $1.0 billion (presumably for both federal and state law claims) would not raise constitutional concerns. Under the Eighth Amendment of the United States Constitution, excessive fines may not be imposed.

On October 3, 2016, the plaintiffs further modified their request for injunctive relief and were seeking, among other things, to enjoin DISH Network L.L.C., whether acting directly or indirectly through authorized telemarketers or independent third-party retailers, from placing any outbound telemarketing calls to market or promote its goods or services for five years, and enjoin DISH Network L.L.C. from accepting activations or sales from some or all existing independent third-party retailers. The second phase of the bench trial, which commenced on October 25, 2016 and concluded on November 2, 2016, covered the plaintiffs' requested injunctive relief, as well as certain evidence related to the state plaintiffs' claims.

On June 5, 2017, the Court issued Findings of Fact and Conclusions of Law and entered Judgment ordering DISH Network L.L.C. to pay an aggregate amount of $280 million to the federal and state plaintiffs. The Court also issued a Permanent Injunction (the "Injunction") against DISH Network L.L.C. that imposes certain ongoing compliance requirements on DISH Network L.L.C., which include, among other things: (i) the retention of a telemarketing-compliance expert to prepare a plan to ensure that DISH Network L.L.C. and certain independent third-party retailers will continue to comply with telemarketing laws and the Injunction; (ii) certain telemarketing records retention and production requirements; and (iii) certain compliance reporting and monitoring requirements. In addition to the compliance requirements under the Injunction, within ninety (90) days after the effective date of the Injunction, DISH Network L.L.C. is required to demonstrate that it and certain independent third-party retailers are in compliance with the Safe Harbor Provisions of the TSR and TCPA and have made no prerecorded telemarketing calls during the five (5) years prior to the effective date of the Injunction (collectively, the "Demonstration

Requirements"). If DISH Network L.L.C. fails to prove that it meets the Demonstration Requirements, it will be barred from conducting any outbound telemarketing for two (2) years. If DISH Network L.L.C. fails to prove that a particular independent third-party retailer meets the Demonstration Requirements, DISH Network L.L.C. will be barred from accepting orders from that independent third-party retailer for two (2) years. On July 3, 2017, DISH Network L.L.C. filed two motions with the Court: (1) to alter or amend the Judgment or in the alternative to amend the Findings of Fact and Conclusions of Law; and (2) to clarify, alter and amend the Injunction. On August 10, 2017, the Court: (a) denied the motion to alter or amend the Judgment or in the alternative to amend the Findings of Fact and Conclusions of Law; and (b) allowed, in part, the motion to clarify, alter and amend the Injunction, and entered an Amended Permanent Injunction (the "Amended Injunction").

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Among other things, the Amended Injunction provided DISH Network L.L.C a thirty (30) day extension to meet the Demonstration Requirements, expanded the exclusion of certain independent third-party retailers from the Demonstration Requirements, and clarified that, with regard to independent third-party retailers, the Amended Injunction only applied to their telemarketing of DISH TV goods and services. On October 10, 2017, DISH Network L.L.C. filed a notice of appeal to the United States Court of Appeals for the Seventh Circuit, which heard oral argument on September 17, 2018.

During the second quarter 2017, we recorded $255 million of "Litigation expense" related to the FTC Action on our Consolidated Statements of Operations and Comprehensive Income (Loss). We recorded $25 million of "Litigation expense" related to the FTC Action during periods prior to 2017. Our total accrual at December 31, 2018 and 2017 related to the FTC Action was $280 million and is included in "Other accrued expenses" on our Consolidated Balance Sheets. Any eventual payments made with respect to the FTC Action may not be deductible for tax purposes, which had a negative impact on our effective tax rate for the year ended December 31, 2017. The tax deductibility of any eventual payments made with respect to the FTC Action may change, based upon, among other things, further developments in the FTC Action, including final adjudication of the FTC Action.

We may also from time to time be subject to private civil litigation alleging telemarketing violations. For example, a portion of the alleged telemarketing violations by an independent third-party retailer at issue in the FTC Action are also the subject of a certified class action filed against DISH Network L.L.C. in the United States District Court for the Middle District of North Carolina (the "Krakauer Action"). Following a five-day trial, on January 19, 2017, a jury in that case found that the independent third-party retailer was acting as DISH Network L.L.C.'s agent when it made the 51,119 calls at issue in that case, and that class members are eligible to recover $400 in damages for each call made in violation of the TCPA. On March 7, 2017, DISH Network L.L.C. filed motions with the Court for judgment as a matter of law and, in the alternative, for a new trial, which the Court denied on May 16, 2017. On May 22, 2017, the Court ruled that the violations were willful and knowing, and trebled the damages award to $1,200 for each call made in violation of TCPA. On April 5, 2018, the Court entered a $61 million judgment in favor of the class. On May 4, 2018, DISH Network L.L.C. filed a notice of appeal to the United States Court of Appeals for the Fourth Circuit. During the second quarter 2017, we recorded $41 million of "Litigation expense" related to the Krakauer Action on our Consolidated Statements of Operations and Comprehensive Income (Loss). We recorded $20 million of "Litigation expense" related to the Krakauer Action during the fourth quarter 2016. Our total accrual related to the Krakauer Action at December 31, 2018 and 2017 was $61 million and is included in "Other accrued expenses" on our Consolidated Balance Sheets.

The rulings in the Telemarketing litigation requiring us to pay up to an aggregate amount of $341 million and imposing certain injunctive relief against us, if upheld, would have a material adverse effect on our cash, cash equivalents and marketable investment securities balances and our business operations.

Our business may be materially affected by the Tax Reform Act. Negative or unexpected tax consequences could adversely affect our business, financial condition and results of operations.

On December 22, 2017, the Tax Reform Act was enacted making significant changes to the Internal Revenue Code. Such changes include, but are not limited to, a reduction in the corporate tax rate and certain limitations on corporate deductions (e.g., a limitation on the interest expense deduction available to companies). These changes could have an adverse effect on our business, financial condition and results of operations. However, we are still assessing the full impact of the Tax Reform Act and cannot predict the manner in which regulations or legislation in these areas may be interpreted and enforced or the impact that such interpretations and enforcement could have on our business, financial condition and results of operations.

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Our business depends on certain intellectual property rights and on not infringing the intellectual property rights of others.

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 of intellectual property infringement by third parties 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 business as currently conducted, which could require us to change our business practices or limit our ability to compete effectively or could have an adverse effect on our results of operations. Even if we believe any such challenges or claims are without merit, they can be time-consuming and costly to defend and divert management's attention and resources away from our business. Moreover, because of the rapid pace of technological change, we rely on technologies developed or TableOfContentslicensed by third parties, and if we are unable to obtain or continue to obtain licenses from these third parties on reasonable terms, our business, financial condition and results of operations could be adversely affected.

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 services, and our products and services may contain technologies provided to us by these third parties or other third parties. We may have little or no ability to determine in advance whether any such technology infringes the intellectual property rights of others. Our vendors, contractors and suppliers may not be required to indemnify us if 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, services 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. Furthermore, our digital content offerings depend in part on effective digital rights management technology to control access to digital content. If the digital rights management technology that we use is compromised or otherwise malfunctions, content providers may be unwilling to provide access to their content. Changes in the copyright laws or how such laws may be interpreted could impact our ability to deliver content and provide certain features and functionality, particularly over the Internet.

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 in the ordinary course of business, including among other things, disputes with programmers regarding fees. Many entities, including some of our competitors, have or may in the future obtain patents and other intellectual property rights that may 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 on intellectual property 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, or to redesign

those products or services in such a way as to avoid infringing the intellectual property. If those intellectual property rights are held by a competitor, we may be unable to obtain the intellectual property at any price, which could adversely affect our competitive position. See “Item 1. Business – Patents and Other Intellectual Property” of this Annual Report on Form 10-K for further information.

We may not be aware of all intellectual property rights that our services or the products used in connection with our services may potentially infringe. In addition, patent applications in the United States are confidential until the Patent and Trademark Office either publishes the application or issues a patent (whichever arises first). Therefore, it is difficult to evaluate the extent to which our services or the products used in connection with our services may infringe claims contained in pending patent applications. Further, it is sometimes not possible to determine definitively whether a claim of infringement is valid.

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Our ability to distribute video content via the Internet, including our Sling TV services, involves regulatory risk.

Certain of our programming agreements allow us to, among other things, deliver certain authenticated content via the Internet and/or deliver certain content through our Sling TV services, and we are increasingly distributing video content to our subscribers via the Internet and through our Sling TV services. The ability to continue this strategy may depend in part on the FCC's success in implementing rules prohibiting fixed and mobile broadband access providers, among other things, from blocking or throttling traffic, from paid privatization, and from unreasonably interfering with, or disadvantaging, consumers' or content providers' access to the Internet.

See "Item 1. Business – Government Regulations – FCC Regulations Governing our Pay-TV Operations – Open Internet" of this Annual Report on Form 10-K for further information.

Changes in the Cable Act, and/or the rules of the FCC that implement the Cable Act, may limit our ability to access programming from cable-affiliated programmers at nondiscriminatory rates.

We purchase a large percentage of our programming from cable-affiliated programmers. Pursuant to the Cable Act, cable providers had been prohibited from entering into exclusive contracts with cable-affiliated programmers. The Cable Act directed that this prohibition expire after a certain period of time unless the FCC determined that the prohibition continued to be necessary. In October 2012, the FCC allowed this prohibition to expire. While the FCC has issued a Further Notice of Proposed Rulemaking aimed at serving some of the same objectives as the prohibition, there can be no assurances that such protections will be adopted or be as effective as the prohibition if they are adopted. In the event that this decision is reconsidered by the FCC or reviewed by a court of appeals, we cannot predict the timing or outcome of any subsequent FCC decision.

As a result of the expiration of this prohibition on exclusivity, we may be limited in our ability to obtain access at all, or on nondiscriminatory terms, to programming from programmers that are affiliated with cable system operators. In addition, any other changes in the Cable Act, and/or the FCC's rules that implement the Cable Act, that currently limit the ability of cable-affiliated programmers to discriminate against competing businesses such as ours, could adversely affect our ability to acquire cable-affiliated programming at all or to acquire programming on nondiscriminatory terms.

Furthermore, the FCC had imposed program access conditions on certain cable companies as a result of mergers, consolidations or affiliations with programmers. The expiration of the exclusivity prohibition in the Cable Act triggered the termination of certain program access conditions that the FCC had imposed on Liberty. In July 2012, similar program access conditions that had applied to Time Warner Cable, which was acquired by Charter in 2016,

expired as previously scheduled. These developments may adversely affect our ability to obtain Liberty's and Charter's programming, or to obtain it on nondiscriminatory terms. In the case of certain types of programming affiliated with Comcast through its control of NBCUniversal, the prohibition on exclusivity expired in January 2018, and we can no longer rely on these protections.

In addition, affiliates of certain cable providers have denied us access to sports programming that they distribute to their cable systems terrestrially, rather than by satellite. The FCC has held that new denials of such service are unfair if they have the purpose or effect of significantly hindering us from providing programming to consumers. However, we cannot be certain that we can prevail in a complaint related to such programming and gain access to it. Our continuing failure to access such programming could materially and adversely affect our ability to compete in regions serviced by these cable providers.

The injunction against our retransmission of distant networks, which is currently waived, may be reinstated.

Pursuant to STELA, we obtained a waiver of a court injunction that previously prevented us from retransmitting certain distant network signals under a statutory copyright license. Because of that waiver, we may provide distant network signals to eligible subscribers. To qualify for that waiver, we are required to provide local service in all 210 local markets in the United States on an ongoing basis. This condition poses a significant strain on our capacity. Moreover, we may lose that waiver if we are found to have failed to provide local service in any of the 210 local markets. If we lose the waiver, the injunction could be reinstated. Furthermore, depending on the severity of the failure, we may also be subject to other sanctions, which may include, among other things, damages.

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We are subject to significant regulatory oversight, and changes in applicable regulatory requirements, including any adoption or modification of laws or regulations relating to the Internet, could adversely affect our business.

Our operations, particularly our DBS operations and our wireless spectrum licenses, are subject to significant government regulation and oversight, primarily by the FCC and, to a certain extent, by Congress, other federal agencies and foreign, state and local authorities. Depending upon the circumstances, noncompliance with legislation or regulations promulgated by these authorities could result in the limitations on, or suspension or revocation of, our licenses or registrations, the termination or loss of contracts or the imposition of contractual damages, civil fines or criminal penalties, any of which could have a material adverse effect on our business, financial condition and results of operations. Furthermore, the change in the Administration and any government policy changes it may institute, which may be substantial, could increase regulatory uncertainty. The adoption or modification of laws or regulations relating to video programming, satellite services, wireless telecommunications, broadband, the Internet or other areas of our business could limit or otherwise adversely affect the manner in which we currently conduct our business, including our Sling TV services. In addition, the manner in which regulations or legislation in these areas may be interpreted and enforced cannot be precisely determined, which in turn could have an adverse effect on our business, financial condition and results of operations. See regulatory disclosures under the caption "Item 1. Business – Government Regulations" of this Annual Report on Form 10-K for additional information.

Our DISH TV services depend on FCC licenses that can expire or be revoked or modified and applications for FCC licenses that may not be granted.

If the FCC were to cancel, revoke, suspend, restrict, significantly condition, or fail to renew any of our licenses or authorizations, or fail to grant our applications for FCC licenses that we may file from time to time, it could have a material adverse effect on our business, financial condition and results of operations. Specifically, loss of a frequency authorization would reduce the amount of spectrum available to us, potentially reducing the amount of DISH TV services available to our DISH TV subscribers. The materiality of such a loss of authorizations would vary based upon, among other things, the location of the frequency used or the availability of replacement spectrum. In addition, Congress often considers and enacts legislation that affects us and FCC proceedings to implement the Communications Act and enforce its regulations are ongoing. We cannot predict the outcomes of these legislative or regulatory proceedings or their effect on our business.

We are subject to digital HD "carry-one, carry-all" requirements that cause capacity constraints.

To provide any full-power local broadcast signal in any market, we are required to retransmit all qualifying broadcast signals in that market ("carry-one, carry-all"), including the carriage of full-power broadcasters' HD signals in markets in which we elect to provide local channels in HD. The carriage of additional HD signals on our DISH TV services could cause us to experience significant capacity constraints and prevent us from carrying additional popular national

channels and/or carrying those national channels in HD.

Our business, investor confidence in our financial results and stock price may be adversely affected if our internal controls are not effective.

We periodically evaluate and test our internal control over financial reporting to satisfy the requirements of Section 404 of the Sarbanes-Oxley Act. Our management has concluded that our internal control over financial reporting was effective as of December 31, 2018. If in the future we are unable to report that our internal control over financial reporting is effective (or if our auditors do not agree with our assessment of the effectiveness of, or are unable to express an opinion on, our internal control over financial reporting), investors, customers and business partners could lose confidence in the accuracy of our financial reports, which could in turn have a material adverse effect on our business, investor confidence in our financial results may weaken, and our stock price may suffer.

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

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Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

The following table sets forth certain information concerning our principal properties related to our business segments.

Description/Use/Location	Segment(s) Using Property	Owned	Leased From EchoStar (1)	Leased From Other Third Party
Corporate headquarters, Englewood, Colorado	Pay-TV / Wireless		X	
Customer call center and general offices, Roseland, New Jersey	Pay-TV			X
Customer call center, Bluefield, West Virginia	Pay-TV	X		
Customer call center, Long Island City, New York	Pay-TV			X
Customer call center, Harlingen, Texas	Pay-TV	X		
Customer call center, Hilliard, Ohio	Pay-TV			X
Customer call center, Littleton, Colorado	Pay-TV		X	
Customer call center, Phoenix, Arizona	Pay-TV			X
Customer call center, Thornton, Colorado	Pay-TV	X		
Customer call center, Tulsa, Oklahoma	Pay-TV			X
Customer call center, warehouse, service, and remanufacturing center, El Paso, Texas	Pay-TV	X		
Data Center, Cheyenne, Wyoming	Pay-TV		X	
Digital broadcast operations center, Cheyenne, Wyoming (2)	Pay-TV	X		
Digital broadcast operations center, Gilbert, Arizona (2)	Pay-TV	X		
Engineering offices and service center, Englewood, Colorado (2)	Pay-TV / Wireless	X		
Engineering office, American Fork, Utah (2)	Pay-TV			X
Engineering office, Bangalore, India (2)	Pay-TV			X
Engineering office, Foster City, California (2)	Pay-TV			X
Engineering office, Kharkov, Ukraine (2)	Pay-TV			X
Engineering office, Superior, Colorado (2)	Pay-TV			X
IT development center, Denver, Colorado	Pay-TV			X
	Pay-TV	X		

Micro digital broadcast operations center, Mustang Ridge, Texas (2)				
Regional digital broadcast operations center, Monee, Illinois (2)	Pay-TV	X		
Regional digital broadcast operations center, New Braunfels, Texas (2)	Pay-TV	X		
Regional digital broadcast operations center, Quicksburg, Virginia (2)	Pay-TV	X		
Regional digital broadcast operations center, Spokane, Washington (2)	Pay-TV	X		
Service and remanufacturing center, Spartanburg, South Carolina	Pay-TV			X
Warehouse and distribution center, Denver, Colorado	Pay-TV			X
Warehouse and distribution center, Atlanta, Georgia	Pay-TV			X
Warehouse, Denver, Colorado	Pay-TV	X		

(1) See Note 18 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our Related Party Transactions with EchoStar.
(2) These properties were transferred to us in connection with the completion of the Share Exchange.

In addition to the principal properties listed above, we operate numerous facilities for, among other things, our in-home service operations strategically located in regions throughout the United States. Furthermore, we own or lease capacity on 11 satellites, which are a major component of our DISH TV services. See further information under "Item 1. Business – Satellites" in this Annual Report on Form 10-K.

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Item 3. LEGAL PROCEEDINGS

See Note 14 “Commitments and Contingencies – Contingencies – Litigation” in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for information regarding certain legal proceedings in which we are involved.

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

Our Class A common stock is quoted on the Nasdaq Global Select Market under the symbol “DISH.”

As of February 8, 2019, there were approximately 6,384 holders of record of our Class A common stock, not including stockholders who beneficially own Class A common stock held in nominee or street name. As of February 7, 2019, all of the 238,435,208 outstanding shares of our Class B common stock were beneficially held by Charles W. Ergen, our Chairman. There is currently no trading market for our Class B common stock.

Securities Authorized for Issuance Under Equity Compensation Plans

See “Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” in this Annual Report on Form 10-K.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

The following table provides information regarding purchases of our Class A common stock made by us for the period from October 1, 2018 through December 31, 2018.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Maximum Approximate Dollar Value of Shares that May Yet be Purchased Under the Programs (1)
	(In thousands, except share data)			
October 1, 2018 - October 31, 2018	—	$ —	—	$ 1,000,000
November 1, 2018 - November 30, 2018	—	$ —	—	$ 1,000,000
December 1, 2018 - December 31, 2018	—	$ —	—	$ 1,000,000
Total	—	$ —	—	$ 1,000,000

(1) Our Board of Directors previously authorized stock repurchases of up to $1.0 billion of our outstanding Class A common stock through and including December 31, 2018. On October 29, 2018, our Board of Directors extended this authorization such that we are currently authorized to repurchase up to $1.0 billion of our outstanding Class A common stock through and including December 31, 2019. Purchases under our repurchase program may be made through open market purchases, privately negotiated transactions, or Rule 10b5-1 trading plans, subject to market conditions and other factors. We may elect not to purchase the maximum amount of shares allowable under this program and we may also enter into additional share repurchase programs authorized by our Board of Directors.

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Item 6. SELECTED FINANCIAL DATA

The selected consolidated financial data as of and for each of the five years ended December 31, 2018 have been derived from our consolidated financial statements. On February 28, 2017, we and EchoStar and certain of our respective subsidiaries completed the Share Exchange. As the Share Exchange was a transaction between entities that are under common control accounting rules require that our Consolidated Financial Statements include the results of the Transferred Businesses for all periods presented, including periods prior to the completion of the Share Exchange. We initially recorded the Transferred Businesses at EchoStar's historical cost basis. The difference between the historical cost basis of the Transferred Businesses and the net carrying value of the Tracking Stock was recorded in "Additional paid-in capital" on our Consolidated Balance Sheets. The results of the Transferred Businesses were prepared from separate records maintained by EchoStar for the periods prior to March 1, 2017, and may not necessarily be indicative of the conditions that would have existed, or the results of operations, if the Transferred Businesses had been operated on a combined basis with our subsidiaries. The selected consolidated financial data includes the results of the Transferred Businesses as described above for all periods presented, including periods prior to the completion of the Share Exchange. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Certain prior year amounts have been reclassified to conform to the current year presentation. See further information under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Explanation of Key Metrics and Other Items" in this Annual Report on Form 10-K.

This data should be read in conjunction with our consolidated financial statements and related notes thereto for the three years ended December 31, 2018, and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this Annual Report on Form 10-K.

Balance Sheet Data	As of December 31, 2018	2017	2016	2015	2014
	(In thousands)				
Cash, cash equivalents and current marketable investment securities	$ 2,068,817	$ 1,980,673	$ 5,360,119	$ 1,611,894	$ 9,236,888
Total assets	30,587,012	29,773,766	27,914,292	22,665,292	21,756,516
Long-term debt and capital lease obligations (including current portion)	15,152,777	16,202,965	16,483,639	13,763,018	14,430,009
Total stockholders' equity (deficit)	8,594,189	6,937,906	4,611,323	2,694,161	1,925,243

Statements of Operations Data	For the Years Ended December 31, 2018	2017	2016	2015	2014
	(In thousands, except per share amounts)				
Total revenue	$ 13,621,302	$ 14,391,375	$ 15,212,302	$ 15,225,493	$ 14,819,289
Total costs and expenses	11,473,681	12,823,610	12,893,041	13,797,121	12,915,803
Operating income (loss)	$ 2,147,621	$ 1,567,765	$ 2,319,261	$ 1,428,372	$ 1,903,486
Net income (loss) attributable to DISH Network	$ 1,575,091	$ 2,098,689	$ 1,497,939	$ 802,374	$ 996,648
Basic net income (loss) per share attributable to DISH Network	$ 3.37	$ 4.50	$ 3.22	$ 1.73	$ 2.17
Diluted net income (loss) per share attributable to DISH Network	$ 3.00	$ 4.07	$ 3.15	$ 1.73	$ 2.15

Statement of Cash Flows Data	For the Years Ended December 31, 2018	2017	2016	2015	2014
Net cash flows from:	(In thousands)				
Operating activities	$ 2,517,841	$ 2,779,507	$ 2,854,247	$ 2,459,123	$ 2,420,575
Investing activities	$ (1,975,273)	$ (6,521,553)	$ (1,737,070)	$ (8,072,004)	$ (938,488)
Financing activities	$ (1,134,545)	$ (103,237)	$ 3,153,930	$ (448,200)	$ 919,382

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Other Data (Unaudited)	For the Years Ended December 31, 2018	2017	2016	2015	2014
Pay-TV subscribers, as of period end (in millions)	12.322	13.242	13.671 *	13.897	13.978
DISH TV subscribers, as of period end (in millions)	9.905	11.030	12.170	13.274	13.881
Sling TV subscribers, as of period end (in millions)	2.417	2.212	1.501	0.623	0.097
Pay-TV subscriber additions (losses), net (in millions)	(0.920)	(0.284)	(0.392)	(0.081)	(0.079)
DISH TV subscriber additions (losses), net (in millions)	(1.125)	(0.995)	(1.270)	(0.607)	(0.122)
Sling TV subscriber additions (losses), net (in millions)	0.205	0.711	0.878	0.526	0.043
Pay-TV ARPU	$ 85.46	$ 86.43	$ 88.66	$ 86.79	$ 83.77
DISH TV subscriber additions, gross (in millions)	1.114	1.477	1.736	2.247	2.558
DISH TV churn rate	1.78 %	1.78 %	1.97 %	1.75 %	1.60 %
DISH TV SAC	$ 759	$ 751	$ 832	$ 822	$ 824

* Our ending Pay-TV subscriber count increased by approximately 166,000 subscribers during the third quarter 2016 as a result of the change in our calculation for our commercial accounts.

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Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following management's discussion and analysis of our financial condition and results of operations together with the audited consolidated financial statements and notes to our financial statements included elsewhere in this Annual Report on Form 10-K. This management's discussion and analysis is intended to help provide an understanding of our financial condition, changes in financial condition and results of our operations and contains forward-looking statements that involve risks and uncertainties. The forward-looking statements are not historical facts, but rather are based on current expectations, estimates, assumptions and projections about our industry, business and future financial results. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of factors, including those discussed under the caption "Item 1A. Risk Factors" and elsewhere in this Annual Report on Form 10-K. Furthermore, such forward-looking statements speak only as of the date of this Annual Report on Form 10-K and we expressly disclaim any obligation to update any forward-looking statements.

Overview

Our business strategy is to be the best provider of video services in the United States by providing products with the best technology, outstanding customer service, and great value. We promote our Pay-TV services as providing our subscribers with a better "price-to-value" relationship than those available from other subscription television service providers. In connection with the growth in OTT industry, we promote our Sling TV services primarily to consumers who do not subscribe to traditional satellite and cable pay-TV services.

As the pay-TV industry is mature, our DISH TV strategy has included an emphasis on acquiring and retaining higher quality subscribers, including subscribers in markets underserved by pay-TV services, even if it means that we will acquire and retain fewer overall subscribers. We evaluate the quality of subscribers based upon a number of factors, including, among others, profitability. Our DISH TV subscriber base has been declining due to, among other things, this strategy. There can be no assurance that our DISH TV subscriber base will not continue to decline and that the pace of such decline will not accelerate.

Our revenue and profit is primarily derived from Pay-TV programming services that we provide to our subscribers. We also generate revenue from equipment rental fees and other hardware related fees, including DVRs and fees from subscribers with multiple receivers; advertising services; fees earned from our Smart Home service operations; broadband services; warranty services; and sales of digital receivers and related equipment to third-party pay-TV providers. Our subscriber-related revenue has been declining due to, among other things, the continuing decline in our DISH TV subscriber base. We expect this trend to continue. Our most significant expenses are subscriber-related expenses, which are primarily related to programming, subscriber acquisition costs and depreciation

and amortization.

Financial Highlights

2018 Consolidated Results of Operations and Key Operating Metrics

- Revenue of $13.621 billion
- Net income attributable to DISH Network of $1.575 billion and basic and diluted earnings per share of common stock of $3.37 and $3.00, respectively
- Loss of approximately 920,000 net Pay-TV subscribers
- Loss of approximately 1.125 million net DISH TV subscribers
- Addition of approximately 205,000 net Sling TV subscribers
- Pay-TV ARPU of $85.46
- Gross new DISH TV subscriber activations of approximately 1.114 million
- DISH TV churn rate of 1.78%
- DISH TV SAC of $759

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Consolidated Financial Condition as of December 31, 2018

- Cash, cash equivalents and current marketable investment securities of $2.069 billion
- Total assets of $30.587 billion
- Total long-term debt and capital lease obligations of $15.153 billion

Business Segments

We currently operate two primary business segments: (1) Pay-TV; and (2) Wireless.

Pay-TV

We are the nation's fourth largest pay-TV provider and offer Pay-TV services under the DISH brand, and the Sling brand. As of December 31, 2018, we had 12.322 million Pay-TV subscribers in the United States, including 9.905 million DISH TV subscribers and 2.417 million Sling TV subscribers.

Competition has intensified in recent years as the pay-TV industry has matured. To differentiate our DISH TV services from our competitors, we offer the Hopper whole-home DVR and have continued to add functionality and simplicity for a more intuitive user experience. Our Hopper and Joey® whole-home DVR promotes a suite of integrated features and functionality designed to maximize the convenience and ease of watching TV anytime and anywhere. It also has several innovative features that a consumer can use, at his or her option, to watch and record television programming, through their televisions, tablets, phones and computers. The Hopper 3, among other things, features 16 tuners, delivers an enhanced 4K Ultra HD experience, and supports up to seven TVs simultaneously.

We market our Sling TV services primarily to consumers who do not subscribe to traditional satellite and cable pay-TV services. Our Sling TV services require an Internet connection and are available on multiple streaming-capable devices including streaming media devices, TVs, tablets, computers, game consoles and phones. We offer Sling International, Sling Latino and Sling domestic video programming services. Our domestic Sling TV services have a single-stream service branded Sling Orange and a multi-stream service branded Sling Blue, which includes, among other things, the ability to stream on up to three devices simultaneously. We face competition from providers of digital media, including, among others, Netflix, Hulu, Apple, Amazon, Alphabet, Verizon, DirecTV, Sony, YouTube, Fubo, Philo and Pluto that offer online services distributing movies, television shows and other video programming as well as programmers, such as HBO, CBS, Univision, STARZ and SHOWTIME, that began selling content directly to consumers over the Internet. Some of these companies have larger customer bases, stronger brand recognition and greater financial, marketing and other resources than we do. In addition, traditional providers of video entertainment, including broadcasters, cable channels and MVPDs, are increasing their

Internet-based video offerings. Some of these services charge nominal or no fees for access to their content, which could adversely affect demand for our Pay-TV services. Moreover, new technologies have been, and will likely continue to be, developed that further increase the number of competitors we face with respect to video services, including competition from piracy-based video offerings. This competition, among other things, has caused the rate of growth in subscribers to our Sling TV services to decrease. In June 2018, we launched additional Sling TV services which include offering consumers a la carte channel subscriptions, access to pay-per-view events and movies, and access to free content. There can be no assurance that these additional services will positively affect our results of operations or our net Sling TV subscribers.

In addition, we historically offered broadband services under the dishNET™ brand, which includes satellite broadband services that utilize advanced technology and high-powered satellites launched by Hughes and ViaSat and wireline broadband services. However, as of the first quarter 2018, we have transitioned our broadband business focus from wholesale to authorized representative arrangements, and we are no longer marketing dishNET broadband services. Our existing broadband subscribers will decline through customer attrition. Generally, under these authorized representative arrangements, we will receive certain payments for each broadband service activation generated and installation performed, and we will not incur subscriber acquisition costs for these activations.

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As a result of the completion of the Share Exchange with EchoStar, described below, we also design, develop and distribute receiver systems and provide digital broadcast operations, including satellite uplinking/downlinking, transmission and other services to third-party pay-TV providers.

Share Exchange Agreement

On February 28, 2017, we and EchoStar and certain of our respective subsidiaries completed the Share Exchange pursuant to which EchoStar transferred to us the Transferred Businesses and in exchange, we transferred to EchoStar the Tracking Stock, that tracked the residential retail satellite broadband business of HNS. See Note 18 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K on our Related Party Transactions with EchoStar for further information.

As the Share Exchange was a transaction between entities that are under common control accounting rules require that our Consolidated Financial Statements include the results of the Transferred Businesses for all periods presented, including periods prior to the completion of the Share Exchange. We initially recorded the Transferred Businesses at EchoStar's historical cost basis. The difference between the historical cost basis of the Transferred Businesses and the net carrying value of the Tracking Stock was recorded in "Additional paid-in capital" on our Consolidated Balance Sheets. The results of the Transferred Businesses were prepared from separate records maintained by EchoStar for the periods prior to March 1, 2017, and may not necessarily be indicative of the conditions that would have existed, or the results of operations, if the Transferred Businesses had been operated on a combined basis with our subsidiaries. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Wireless

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below.

DISH Network Spectrum

We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets. These wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We expect to complete the First Phase by March 2020, with subsequent

phases to be completed thereafter. As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, RF design, and deployment services for the First Phase. Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion through 2020. We expect the Second Phase to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion. We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers.

See Note 14 “Commitments and Contingencies – Commitments – Wireless – DISH Network Spectrum” in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American II and American III, we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, the parent company of Northstar Wireless, and in SNR HoldCo, the parent company of SNR Wireless, respectively. On October 27, 2015, the FCC granted certain AWS-3 Licenses to Northstar Wireless and to SNR Wireless, respectively, which are recorded in "FCC authorizations" on our Consolidated Balance Sheets. Under the applicable accounting guidance in ASC 810, Northstar Spectrum and SNR HoldCo are considered variable interest entities and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. See Note 14 "Commitments and Contingencies – Commitments – Wireless – DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses" in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on acceptable terms or at all. There can be no assurance that we, the Northstar Entities and/or the SNR Entities will be able to develop and implement business models that will realize a return on these wireless spectrum licenses or that we, the Northstar Entities and/or the SNR Entities will be able to profitably deploy the assets represented by these wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations. See Note 14 "Commitments and Contingencies – Commitments – Wireless" in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Recent Developments

Mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others may result in, among other things, greater scale and financial leverage and increase the availability of offerings from providers capable of bundling video, broadband and/or wireless services in competition with our services, and may exacerbate the risks described in our public filings. In October 2016,

AT&T announced its acquisition of Time Warner, which was completed in June 2018. In December 2017, Walt Disney Company announced its acquisition of certain assets of Twenty-First Century Fox, Inc. These transactions may affect us adversely by, among other things, making it more difficult for us to obtain access to certain programming networks on nondiscriminatory and fair terms, or at all. For example, in connection with AT&T's acquisition of Time Warner, Turner sent all of its distributors written, irrevocable offers to submit disputes over the price and other terms of Turner programming to binding arbitration and to guarantee continued access to that programming while any arbitration is pending. However, in October 2018, AT&T removed its HBO and Cinemax channels, which are not part of Turner, from our DISH TV and Sling TV programming lineup, as we and AT&T have been unable to negotiate the terms and conditions of a new programming carriage contract.

Also, in April 2018, T-Mobile announced its acquisition of Sprint. We filed a petition to deny the transaction with the FCC. We cannot predict the practical effect of the impact on us of T-Mobile's acquisition of Sprint (if approved), including without limitation, the impact of any conditions on us (if any conditions are imposed). However, it is possible that the outcomes resulting from this acquisition (if approved, with or without conditions) could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

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Trends in our Pay-TV Segment

Competition

Competition has intensified in recent years as the pay-TV industry has matured. With respect to our DISH TV services, we and our competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of pay-TV services. We incur significant costs to retain our existing DISH TV subscribers, mostly as a result of upgrading their equipment to next generation receivers, primarily including our Hopper receivers, and by providing retention credits. Our DISH TV subscriber retention costs may vary significantly from period to period.

Many of our competitors have been especially aggressive by offering discounted programming and services for both new and existing subscribers, including bundled offers combining broadband, video and/or wireless services and other promotional offers. Certain competitors have been able to subsidize the price of video services with the price of broadband and/or wireless services.

Our Pay-TV services also face increased competition from programmers and other companies who distribute video directly to consumers over the Internet. Our Sling TV services face increased competition from content providers and other companies, as well as traditional satellite television providers, cable companies and large telecommunications companies, that are increasing their Internet-based video offerings. Competition from video content distributed over the Internet includes services with live-linear television programming, single programmer offerings and offerings of large libraries of on-demand content, including in many cases original content. Furthermore, our DISH TV services face increased competition as programming offered over the Internet has become more prevalent and consumers are spending an increasing amount of time accessing video content via the Internet on their mobile devices. Significant changes in consumer behavior with regard to the means by which consumers obtain video entertainment and information in response to digital media competition could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business. In particular, consumers have shown increased interest in viewing certain video programming in any place, at any time and/or on any broadband-connected device they choose. Online content providers may cause our subscribers to disconnect our DISH TV services ("cord cutting"), downgrade to smaller, less expensive programming packages ("cord shaving") or elect to purchase through these online content providers a certain portion of the services that they would have historically purchased from us, such as pay per view movies, resulting in less revenue to us.

We implement new marketing promotions from time to time that are intended to increase our Pay-TV subscriber activations. For our DISH TV services, we have launched various marketing promotions offering certain DISH TV programming packages without a price increase for a commitment period. We also launched our Flex Pack skinny bundle with a core package of programming consisting of more than 50 channels and the choice of one of nine themed add-on channel packs, which include, among others, local broadcast networks and kids and general entertainment programming. Subscribers can also add or remove additional channel packs to best suit their entertainment

needs. During 2017, we launched “Tuned In To You” and the accompanying “Spokeslistener” campaign. While we plan to implement these and other new marketing efforts for our DISH TV services, there can be no assurance that we will ultimately be successful in increasing our gross new DISH TV subscriber activations. Additionally, in response to our efforts, we may face increased competitive pressures, including aggressive marketing and retention efforts, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers. For our Sling TV services, we offer a personalized TV experience with a customized channel line-up and two of the lowest priced multichannel live-linear online streaming services in the industry, our Sling Orange service and our Sling Blue service. During 2018, we launched our “We are Slingers” campaign. While we plan to implement these and other new marketing efforts for our Sling TV services, there can be no assurance that we will ultimately be successful in increasing our net Sling TV subscriber activations.

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Our DISH TV subscriber base has been declining due to, among other things, the factors described above. There can be no assurance that our DISH TV subscriber base will not continue to decline and that the pace of such decline will not accelerate. As our DISH TV subscriber base continues to decline, it could have a material adverse long-term effect on our business, results of operations, financial condition and cash flow.

Programming

Our ability to compete successfully will depend, among other things, on our ability to continue to obtain desirable programming and deliver it to our subscribers at competitive prices. Programming costs represent a large percentage of our "Subscriber-related expenses" and the largest component of our total expense. We expect these costs to continue to increase due to contractual price increases and the renewal of long-term programming contracts on less favorable pricing terms and certain programming costs are rising at a much faster rate than wages or inflation. In particular, the rates we are charged for retransmitting local broadcast channels have been increasing substantially and may exceed our ability to increase our prices to our customers. Going forward, our margins may face pressure if we are unable to renew our long-term programming contracts on acceptable pricing and other economic terms or if we are unable to pass these increased programming costs on to our customers.

Increases in programming costs have caused us to increase the rates that we charge to our subscribers, which could in turn cause our existing Pay-TV subscribers to disconnect our service or cause potential new Pay-TV subscribers to choose not to subscribe to our service. Additionally, even if our subscribers do not disconnect our services, they may purchase through new and existing online content providers a certain portion of the services that they would have historically purchased from us, such as pay-per-view movies, resulting in less revenue to us.

Furthermore, our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate may be negatively impacted if we are unable to renew our long-term programming carriage contracts before they expire. In the past, our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate have been negatively impacted as a result of programming interruptions and threatened programming interruptions in connection with the scheduled expiration of programming carriage contracts with content providers.

In June 2018 and November 2018, Univision Communications Inc. ("Univision") removed certain of its channels from our DISH TV and Sling TV programming lineup, as we and Univision have been unable to negotiate the terms and conditions of a new programming carriage contract. In light of, among other things, certain Univision programming being available to consumers through alternative methods including over the air antennas and directly from Univision over the Internet, the current state of our negotiations with Univision and the duration of the absence of these Univision channels from our programming lineups, this removal may be permanent. Univision's removal of certain of its channels from our programming lineup will continue to negatively impact our DISH TV churn rate, net DISH TV subscriber losses, gross new DISH TV subscriber activations and net Sling TV subscriber additions in the short-term. However, over the long term, we anticipate that we will be able to provide more compelling offers to our subscribers, particularly containing Latino programming because of, among other things, our ability to provide more

flexible and lower cost programming and because certain Univision programming is also available through alternative methods including over the air antennas and directly from Univision over the Internet. In addition, in October 2018, AT&T removed its HBO and Cinemax channels from our DISH TV and Sling TV programming lineup, as we and AT&T have been unable to negotiate the terms and conditions of a new programming carriage contract. AT&T offers its programming, including its HBO and Cinemax channels, directly to consumers over the Internet and provides HBO for free to subscribers of its streaming service AT&T's "Watch TV." We experienced a higher DISH TV churn rate, higher net Pay-TV subscriber losses and lower gross new DISH TV subscriber activations during the third and fourth quarter 2018 and continuing into the first quarter 2019, when Univision and AT&T removed certain of their channels from our DISH TV and Sling TV programming lineup. As a result, there can be no assurance that the removal of these channels will not have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate resulting from additional programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

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Operations and Customer Service

While competitive factors have impacted the entire pay-TV industry, our relative performance has also been driven by issues specific to us. In the past, our subscriber growth has been adversely affected by signal theft and other forms of fraud and by our operational inefficiencies. For our DISH TV services, in order to combat signal theft and improve the security of our broadcast system, we use microchips embedded in credit card sized access cards, called "smart cards," or security chips in our DBS receiver systems to control access to authorized programming content ("Security Access Devices"). We expect that future replacements of these devices may be necessary to keep our system secure. To combat other forms of fraud, among other things, we monitor our independent third-party distributors' and independent third-party retailers' adherence to our business rules. Furthermore, for our Sling TV services, we encrypt programming content and use digital rights management software to, among other things, prevent unauthorized access to our programming content.

While we have made improvements in responding to and dealing with customer service issues, we continue to focus on the prevention of these issues, which is critical to our business, financial condition and results of operations. To improve our operational performance, we continue to make investments in staffing, training, information systems, and other initiatives, primarily in our call center and in-home service operations. These investments are intended to help combat inefficiencies introduced by the increasing complexity of our business, improve customer satisfaction, reduce churn, increase productivity, and allow us to scale better over the long run. We cannot be certain, however, that our spending will ultimately be successful in improving our operational performance.

Changes in our Technology

We have been deploying DBS receivers for our DISH TV services that utilize 8PSK modulation technology with MPEG-4 compression technology for several years. These technologies, when fully deployed, will allow improved broadcast efficiency, and therefore allow increased programming capacity. Many of our customers today, however, do not have DBS receivers that use MPEG-4 compression technology. In addition, given that all of our HD content is broadcast in MPEG-4, any growth in HD penetration will naturally accelerate our transition to these newer technologies and may increase our retention costs. All new DBS receivers have MPEG-4 compression with 8PSK modulation technology.

In addition, from time to time, we change equipment for certain subscribers to make more efficient use of transponder capacity in support of HD and other initiatives. We believe that the benefit from the increase in available transponder capacity outweighs the short-term cost of these equipment changes.

EXPLANATION OF KEY METRICS AND OTHER ITEMS

Subscriber-related revenue. "Subscriber-related revenue" consists principally of revenue from basic, local, premium movie, pay-per-view, Latino and international subscriptions; equipment rental fees and other hardware related fees, including DVRs and fees from subscribers with multiple receivers; advertising services; fees earned from our Smart Home service operations; broadband services; warranty services; and other subscriber revenue. Certain of the amounts included in "Subscriber-related revenue" are not recurring on a monthly basis.

Equipment sales and other revenue. "Equipment sales and other revenue" principally includes the non-subsidized sales of DBS accessories to independent third-party retailers and other independent third-party distributors of our equipment, sales of digital receivers and related components to third-party pay-TV providers and revenue from services and other agreements with EchoStar.

Subscriber-related expenses. "Subscriber-related expenses" principally include programming expenses, which represent a substantial majority of these expenses. "Subscriber-related expenses" also include costs for Pay-TV and broadband services incurred in connection with our subscriber retention, Smart Home service and call center operations, billing costs, refurbishment and repair costs related to DBS receiver systems, other variable subscriber expenses and monthly wholesale fees paid to broadband providers.

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Satellite and transmission expenses. "Satellite and transmission expenses" includes the cost of leasing satellite and transponder capacity from EchoStar and the cost of telemetry, tracking and control and other professional services provided to us by EchoStar. "Satellite and transmission expenses" also includes the cost of digital broadcast operations, executory costs associated with capital leases and costs associated with transponder leases and other related services. In addition, "Satellite and transmission expenses" includes costs associated with our Sling TV services including, among other things, streaming delivery technology and infrastructure.

Cost of sales - equipment and other. "Cost of sales - equipment and other" primarily includes the cost of non-subsidized sales of DBS accessories to independent third-party retailers and other independent third-party distributors of our equipment, costs associated with sales of digital receivers and related components to third-party pay-TV providers and costs related to services and other agreements with EchoStar.

Subscriber acquisition costs. While we primarily lease DBS receiver systems, we also subsidize certain costs to attract new subscribers. Our "Subscriber acquisition costs" include the cost of subsidized sales of DBS receiver systems to independent third-party retailers and other independent third-party distributors of our equipment, the cost of subsidized sales of DBS receiver systems directly by us to subscribers, including net costs related to our promotional incentives, costs related to our direct sales efforts and costs related to installation and acquisition advertising. Our "Subscriber acquisition costs" also includes costs associated with acquiring Sling TV subscribers including, among other things, costs related to acquisition advertising and our direct sales efforts and commissions. Subsequent to the adoption of ASU 2014-09 on January 1, 2018, we capitalize payments made under certain sales incentive programs, including those with our independent third-party retailers and other independent third-party distributors, which were previously expensed as "Subscriber acquisition costs." These amounts are now initially capitalized in "Other current assets" and "Other noncurrent assets, net" on our Consolidated Balance Sheets, and then amortized in "Other subscriber acquisition costs" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH TV SAC. Subscriber acquisition cost measures are commonly used by those evaluating traditional companies in the pay-TV industry. We are not aware of any uniform standards for calculating the "average subscriber acquisition costs per new DISH TV subscriber activation," or DISH TV SAC, and we believe presentations of pay-TV SAC may not be calculated consistently by different companies in the same or similar businesses. Our DISH TV SAC has historically been calculated as "Subscriber acquisition costs," excluding "Subscriber acquisition costs" associated with our broadband services and Sling TV services, plus the value of equipment capitalized under our lease program for new DISH TV subscribers, divided by gross new DISH TV subscriber activations.

Subsequent to the adoption of ASU 2014-09 on January 1, 2018, we capitalize payments made under certain sales incentive programs, including those with our independent third-party retailers and other independent third-party distributors, which were previously expensed as "Subscriber acquisition costs." These amounts are now initially capitalized in "Other current assets" and "Other noncurrent assets, net" on our Consolidated Balance Sheets, and then amortized in "Other subscriber acquisition costs" on our Consolidated Statements of Operations and Comprehensive Income (Loss). As such, as of January 1, 2018 our DISH TV SAC is calculated as "Subscriber acquisition costs," excluding "Subscriber acquisition costs" associated with our broadband services and Sling TV services, plus capitalized

payments made under certain sales incentive programs, excluding amortization related to these payments, plus the value of equipment capitalized under our lease program for new DISH TV subscribers, divided by gross new DISH TV subscriber activations. We include all the costs of acquiring DISH TV subscribers (e.g., subsidized and capitalized equipment) as we believe it is a more comprehensive measure of how much we are spending to acquire subscribers. We also include all new DISH TV subscribers in our calculation, including DISH TV subscribers added with little or no subscriber acquisition costs.

General and administrative expenses. "General and administrative expenses" consists primarily of employee-related costs associated with administrative services such as legal, information systems, and accounting and finance. It also includes outside professional fees (e.g., legal, information systems and accounting services) and other items associated with facilities and administration.

Litigation expense. "Litigation expense" primarily consists of certain significant legal settlements, judgments and/or accruals.

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Interest expense, net of amounts capitalized. "Interest expense, net of amounts capitalized" primarily includes interest expense (net of capitalized interest), prepayment premiums, amortization of debt discounts and debt issuance costs associated with our long-term debt, and interest expense associated with our capital lease obligations. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information regarding our capitalized interest policy.

Other, net. The main components of "Other, net" are gains and losses realized on the sale and/or conversion of marketable and non-marketable investment securities and derivative financial instruments, impairment of marketable and non-marketable investment securities, unrealized gains and losses from changes in fair value of certain marketable investment securities and derivative financial instruments, and equity in earnings and losses of our affiliates.

Earnings before interest, taxes, depreciation and amortization ("EBITDA"). EBITDA is defined as "Net income (loss) attributable to DISH Network" plus "Interest expense, net of amounts capitalized" net of "Interest income," "Income tax (provision) benefit, net" and "Depreciation and amortization." This "non-GAAP measure" is reconciled to "Net income (loss) attributable to DISH Network" in our discussion of "Results of Operations" below.

DISH TV subscribers. We include customers obtained through direct sales, independent third-party retailers and other independent third-party distribution relationships in our DISH TV subscriber count. We also provide DISH TV services to hotels, motels and other commercial accounts. For certain of these commercial accounts, we divide our total revenue for these commercial accounts by an amount approximately equal to the retail price of our Flex Pack programming package, and include the resulting number, which is substantially smaller than the actual number of commercial units served, in our DISH TV subscriber count. The retail price of the Flex Pack programming package as of December 31, 2018 was $34.99, and we intend to continue to use this price as the denominator in our calculation.

Sling TV subscribers. We include customers obtained through direct sales and third-party marketing agreements in our Sling TV subscriber count. Sling TV subscribers are recorded net of disconnects. Sling TV customers receiving service for no charge, under certain new subscriber promotions, are excluded from our Sling TV subscriber count. For customers who subscribe to multiple Sling TV packages, including, among others, Sling TV Blue, Sling TV Orange and Sling Latino, each customer is only counted as one Sling TV subscriber.

Pay-TV subscribers. Our Pay-TV subscriber count includes all DISH TV and Sling TV subscribers discussed above. For customers who subscribe to both our DISH TV services and our Sling TV services, each subscription is counted as a separate Pay-TV subscriber.

Pay-TV average monthly revenue per subscriber ("Pay-TV ARPU"). We are not aware of any uniform standards for calculating ARPU and believe presentations of ARPU may not be calculated consistently by other companies in the

same or similar businesses. We calculate Pay-TV average monthly revenue per Pay-TV subscriber, or Pay-TV ARPU, by dividing average monthly "Subscriber-related revenue," excluding revenue from broadband services, for the period by our average number of Pay-TV subscribers for the period. The average number of Pay-TV subscribers is calculated for the period by adding the average number of Pay-TV subscribers for each month and dividing by the number of months in the period. The average number of Pay-TV subscribers for each month is calculated by adding the beginning and ending Pay-TV subscribers for the month and dividing by two. Sling TV subscribers on average purchase lower priced programming services than DISH TV subscribers, and therefore, as Sling TV subscribers increase, it has had a negative impact on Pay-TV ARPU.

DISH TV average monthly subscriber churn rate ("DISH TV churn rate"). We are not aware of any uniform standards for calculating subscriber churn rate and believe presentations of subscriber churn rates may not be calculated consistently by different companies in the same or similar businesses. We calculate DISH TV churn rate for any period by dividing the number of DISH TV subscribers who terminated service during the period by the average number of DISH TV subscribers for the same period, and further dividing by the number of months in the period. The average number of DISH TV subscribers is calculated for the period by adding the average number of DISH TV subscribers for each month and dividing by the number of months in the period. The average number of DISH TV subscribers for each month is calculated by adding the beginning and ending DISH TV subscribers for the month and dividing by two.

Free cash flow. We define free cash flow as "Net cash flows from operating activities" less "Purchases of property and equipment" and "Capitalized interest related to FCC authorizations," as shown on our Consolidated Statements of Cash Flows.

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RESULTS OF OPERATIONS

Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017.

Statements of Operations Data	For the Years Ended December 31, 2018 (In thousands)		2017		Variance Amount	%
Revenue:						
Subscriber-related revenue	$ 13,456,088		$ 14,260,412		$ (804,324)	(5.6)
Equipment sales and other revenue	165,214		130,963		34,251	26.2
Total revenue	13,621,302		14,391,375		(770,073)	(5.4)
Costs and Expenses:						
Subscriber-related expenses	8,544,577		8,919,985		(375,408)	(4.2)
% of Subscriber-related revenue	63.5	%	62.6	%		
Satellite and transmission expenses	576,568		658,017		(81,449)	(12.4)
% of Subscriber-related revenue	4.3	%	4.6	%		
Cost of sales - equipment and other	145,604		95,116		50,488	53.1
Subscriber acquisition costs	769,307		1,204,261		(434,954)	(36.1)
General and administrative expenses	725,601		687,054		38,547	5.6
% of Total revenue	5.3	%	4.8	%		
Litigation expense	—		295,695		(295,695)	*
Depreciation and amortization	712,024		817,564		(105,540)	(12.9)
Impairment of long-lived assets (Note 8)	—		145,918		(145,918)	*
Total costs and expenses	11,473,681		12,823,610		(1,349,929)	(10.5)
Operating income (loss)	2,147,621		1,567,765		579,856	37.0
Other Income (Expense):						
Interest income	44,759		41,006		3,753	9.2
Interest expense, net of amounts capitalized	(15,006)		(63,172)		48,166	76.2
Other, net	11,801		104,488		(92,687)	(88.7)
Total other income (expense)	41,554		82,322		(40,768)	(49.5)
Income (loss) before income taxes	2,189,175		1,650,087		539,088	32.7
Income tax (provision) benefit, net	(533,684)		515,320		(1,049,004)	*
Effective tax rate	24.4	%	(31.2)	%		
Net income (loss)	1,655,491		2,165,407		(509,916)	(23.5)
Less: Net income (loss) attributable to noncontrolling interests, net of tax	80,400		66,718		13,682	20.5
Net income (loss) attributable to DISH Network	$ 1,575,091		$ 2,098,689		$ (523,598)	(24.9)

Other Data:

Pay-TV subscribers, as of period end (in millions)	12.322	13.242	(0.920)	(6.9)
DISH TV subscribers, as of period end (in millions)	9.905	11.030	(1.125)	(10.2)
Sling TV subscribers, as of period end (in millions)	2.417	2.212	0.205	9.3
Pay-TV subscriber additions (losses), net (in millions)	(0.920)	(0.284)	(0.636)	*
DISH TV subscriber additions (losses), net (in millions)	(1.125)	(0.995)	(0.130)	(13.1)
Sling TV subscriber additions (losses), net (in millions)	0.205	0.711	(0.506)	(71.2)
Pay-TV ARPU	$ 85.46	$ 86.43	$ (0.97)	(1.1)
DISH TV subscriber additions, gross (in millions)	1.114	1.477	(0.363)	(24.6)
DISH TV churn rate	1.78 %	1.78 %	— %	*
DISH TV SAC	$ 759	$ 751	$ 8	1.1
EBITDA	$ 2,791,046	$ 2,423,099	$ 367,947	15.2

* Percentage is not meaningful.

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Pay-TV subscribers. We lost approximately 920,000 net Pay-TV subscribers during the year ended December 31, 2018 compared to the loss of approximately 284,000 net Pay-TV subscribers during the same period in 2017. The increase in net Pay-TV subscriber losses during the year ended December 31, 2018 resulted from higher net DISH TV subscriber losses and fewer net Sling TV subscriber additions. Our net Pay-TV subscriber losses during the year ended December 31, 2018 were negatively impacted by Univision and AT&T's removal of certain of their channels from our DISH TV and Sling TV programming lineup. As a result, we experienced higher net Pay-TV subscriber losses beginning in the third quarter 2018 and continuing into the fourth quarter 2018. With respect to the Univision removal, in light of, among other things, certain Univision programming being available to consumers through alternative methods including over the air antennas and directly from Univision over the Internet, the current state of our negotiations with Univision and the duration of the absence of these channels from our programming lineups, this removal may be permanent. We lost approximately 1.125 million net DISH TV subscribers during the year ended December 31, 2018 compared to the loss of approximately 995,000 net DISH TV subscribers during the same period in 2017. This increase in net DISH TV subscriber losses resulted from lower gross new DISH TV subscriber activations, partially offset by a lower number of customer disconnects. We added approximately 205,000 net Sling TV subscribers during the year ended December 31, 2018 compared to the addition of approximately 711,000 net Sling TV subscribers during the same period in 2017. This decrease in net Sling TV subscriber additions is primarily related to increased competition, including competition from other OTT service providers and to a higher number of customer disconnects on a larger Sling TV subscriber base, including the impact from Univision and AT&T's removal of certain of their channels from our programming lineup, discussed above.

Our DISH TV churn rate for both the years ended December 31, 2018 and 2017 was 1.78%. Our DISH TV churn rate for the year ended December 31, 2018 was negatively impacted by Univision and AT&T's removal of certain of their channels from our programming lineup, discussed above, offset by the positive impact from our emphasis on acquiring and retaining higher quality subscribers. Our DISH TV churn rate continues to be adversely impacted by external factors, such as, among other things, increased competitive pressures, including aggressive marketing, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers, as well as cord cutting. Our DISH TV churn rate is also impacted by internal factors, such as, among other things, our ability to consistently provide outstanding customer service, price increases, programming interruptions in connection with the scheduled expiration of certain programming carriage contracts, our ability to control piracy and other forms of fraud and the level of our retention efforts.

During the year ended December 31, 2018, we activated approximately 1.114 million gross new DISH TV subscribers compared to approximately 1.477 million gross new DISH TV subscribers during the same period in 2017, a decrease of 24.6%. This decrease in our gross new DISH TV subscriber activations was primarily impacted by stricter customer acquisition policies for our DISH TV subscribers, including an emphasis on acquiring higher quality subscribers; increased competitive pressures, including aggressive short term introductory pricing and bundled offers combining broadband, video and/or wireless services and other discounted promotional offers; and Univision and AT&T's removal of certain of their channels from our programming lineup, discussed above.

During September 2017, Hurricane Maria caused extraordinary damage in Puerto Rico and the U.S. Virgin Islands, resulting in a widespread loss of power and infrastructure. Given the devastation and loss of power, substantially all customers in those areas were unable to receive our service as of September 30, 2017. In an effort to ensure customers would not be charged for services they were unable to receive, we proactively paused service for those

customers. Accordingly, we removed approximately 145,000 subscribers, representing all of our subscribers in Puerto Rico and the U.S. Virgin Islands, from our ending Pay-TV subscriber count as of September 30, 2017. During the fourth quarter 2017, 75,000 of these customers reactivated. During the year ended December 31, 2018, 31,000 of these customers reactivated. We incurred certain costs in connection with the re-activation of these returning subscribers, and accordingly, these returning customers were recorded as gross new DISH TV subscriber activations with the corresponding costs recorded in “Subscriber acquisition costs” on our Consolidated Statements of Operations and Comprehensive Income (Loss) and/or in “Purchases of property and equipment” on our Consolidated Statements of Cash Flows.

We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV subscriber churn rate resulting from programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

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We have not always met our own standards for performing high-quality installations, effectively resolving subscriber issues when they arise, answering subscriber calls in an acceptable timeframe, effectively communicating with our subscriber base, reducing calls driven by the complexity of our business, improving the reliability of certain systems and subscriber equipment and aligning the interests of certain independent third-party retailers and installers to provide high-quality service. Most of these factors have affected both gross new DISH TV subscriber activations as well as DISH TV subscriber churn rate. Our future gross new DISH TV subscriber activations and our DISH TV subscriber churn rate may be negatively impacted by these factors, which could in turn adversely affect our revenue.

Subscriber-related revenue. "Subscriber-related revenue" totaled $13.456 billion for the year ended December 31, 2018, a decrease of $804 million or 5.6% compared to the same period in 2017. The decrease in "Subscriber-related revenue" from the same period in 2017 was primarily related to a lower average Pay-TV subscriber base and the decrease in Pay-TV ARPU discussed below. We expect these trends in "Subscriber-related revenue" to continue.

Pay-TV ARPU. Pay-TV ARPU was $85.46 during the year ended December 31, 2018 versus $86.43 during the same period in 2017. The $0.97 or 1.1% decrease in Pay-TV ARPU was primarily attributable to an increase in Sling TV subscribers as a percentage of our total Pay-TV subscriber base, a shift in DISH TV programming package mix to lower priced programming packages and a decrease in revenue related to premium channels and pay-per-view boxing events. Sling TV subscribers on average purchase lower priced programming services than DISH TV subscribers, and therefore, the increase in Sling TV subscribers had a negative impact on Pay-TV ARPU. We expect this trend to continue. These decreases were partially offset by DISH TV programming package price increases in the first quarter 2018 and 2017 and an increase in revenue per subscriber related to our Sling TV services.

Subscriber-related expenses. "Subscriber-related expenses" totaled $8.545 billion during the year ended December 31, 2018, a decrease of $375 million or 4.2% compared to the same period in 2017. The decrease in "Subscriber-related expenses" was primarily attributable to a lower average Pay-TV subscriber base and a decrease in variable costs per subscriber, partially offset by higher programming costs per subscriber. Programming costs per subscriber increased due to rate increases in certain of our programming contracts, including the renewal of certain contracts at higher rates, particularly for local broadcast channels. These programming rate increases were partially offset by the reduction in programming costs per subscriber related to Univision and AT&T's removal of certain of their channels from our programming lineup and lower costs related to pay-per-view boxing events. "Subscriber-related expenses" represented 63.5% and 62.6% of "Subscriber-related revenue" during the years ended December 31, 2018 and 2017, respectively. The increase in this expense to revenue ratio primarily resulted from lower subscriber-related revenue and higher programming costs per subscriber, discussed above.

In the normal course of business, we enter into contracts to purchase programming content in which our payment obligations are generally contingent on the number of Pay-TV subscribers to whom we provide the respective content. Our "Subscriber-related expenses" have and will continue to face further upward pressure from price increases and the renewal of long-term programming contracts on less favorable pricing terms. In addition, our programming expenses will increase to the extent we are successful in growing our Pay-TV subscriber base.

Satellite and transmission expenses. "Satellite and transmission expenses" totaled $577 million during the year ended December 31, 2018, a decrease of $81 million or 12.4% compared to the same period in 2017. The decrease in "Satellite and transmission expenses" was primarily related to a decrease in transponder capacity leased from EchoStar, related to our DISH TV service and decreased costs in our digital broadcast operations.

Subscriber acquisition costs. "Subscriber acquisition costs" totaled $769 million for the year ended December 31, 2018, a decrease of $435 million or 36.1% compared to the same period in 2017. This change was primarily attributable to fewer gross new DISH TV subscriber activations and a $158 million positive impact related to the adoption of ASU 2014-09. Subsequent to the adoption of ASU 2014-09 on January 1, 2018, we capitalize payments made under certain sales incentive programs, including those with our independent third-party retailers and other independent third-party distributors. These amounts were previously expensed as "Subscriber acquisition costs." See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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DISH TV SAC. DISH TV SAC was $759 during the year ended December 31, 2018 compared to $751 during the same period in 2017, an increase of $8 or 1.1%. This change was primarily attributable to an increase in hardware costs and commissions paid to independent third-party retailers per activation, partially offset by a decrease in advertising costs per activation. The increase in hardware costs and commissions paid to independent third-party retailers resulted from our emphasis on acquiring higher quality subscribers who activate with higher priced receivers, such as the Hopper 3, and a lower percentage of remanufactured receivers being activated on new subscriber accounts. In addition, we had more Puerto Rico subscribers reactivate in 2017 as compared to 2018 which increased our DISH TV SAC during 2018. The expenses we incurred for the reactivation of subscribers in Puerto Rico were lower on a per subscriber basis than those incurred for the remaining gross new DISH TV subscriber activations.

During the years ended December 31, 2018 and 2017, the amount of equipment capitalized under our lease program for new DISH TV subscribers totaled $120 million and $137 million, respectively. This decrease in capital expenditures under our lease program for new DISH TV subscribers resulted primarily from fewer gross new DISH TV subscriber activations discussed above.

To remain competitive, we upgrade or replace subscriber equipment periodically as technology changes, and the costs associated with these upgrades may be substantial. To the extent technological changes render a portion of our existing equipment obsolete, we would be unable to redeploy all returned equipment and consequently would realize less benefit from the DISH TV SAC reduction associated with redeployment of that returned lease equipment.

Our “Subscriber acquisition costs” and “DISH TV SAC” may materially increase in the future to the extent that we, among other things, transition to newer technologies, introduce more aggressive promotions, or provide greater equipment subsidies. See further information under “Liquidity and Capital Resources – Subscriber Acquisition and Retention Costs.”

Litigation expense. “Litigation expense” related to certain significant legal settlements, judgments and/or accruals totaled $296 million during the year ended December 31, 2017. See Note 14 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Depreciation and amortization. “Depreciation and amortization” expense totaled $712 million during the years ended December 31, 2018, a $106 million or 12.9% decrease compared to the same period in 2017. This change was primarily driven by a decrease in depreciation expense from equipment leased to new and existing DISH TV subscribers.

Impairment of long-lived assets. “Impairment of long-lived assets” of $146 million during the year ended December 31, 2017 resulted from an impairment of the T1 satellite. See Note 8 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Interest expense, net of amounts capitalized. “Interest expense, net of amounts capitalized” totaled $15 million during the year ended December 31, 2018, a decrease of $48 million or 76.2% compared to the same period in 2017. This decrease was primarily related to a reduction in interest expense resulting from debt redemptions during 2018 and 2017. On June 14, 2017, the FCC issued an order granting our application to acquire the 600 MHz Licenses. The addition of the carrying amount of these licenses, together with the carrying amount of current wireless spectrum licenses, exceeded the amount of long-term debt and capital lease obligations on our Consolidated Balance Sheets since June 14, 2017. Therefore, beginning June 14, 2017, materially all of our interest expense is being capitalized. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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Earnings before interest, taxes, depreciation and amortization. EBITDA was $2.791 billion during the year ended December 31, 2018, an increase of $368 million or 15.2% compared to the same period in 2017. The increase in EBITDA was primarily attributable to the changes in operating income discussed above, excluding the change in "Depreciation and amortization." These changes in operating income include a $154 million positive impact for the year ended December 31, 2018 related to the adoption of ASU 2014-09. EBITDA for the year ended December 31, 2017 was negatively impacted by "Litigation expense" of $296 million and "Impairment of long-lived assets" of $146 million. The following table reconciles EBITDA to the accompanying financial statements.

	For the Years Ended December 31,	
	2018	2017
	(In thousands)	
EBITDA	$ 2,791,046	$ 2,423,099
Interest, net	29,753	(22,166)
Income tax (provision) benefit, net	(533,684)	515,320
Depreciation and amortization	(712,024)	(817,564)
Net income (loss) attributable to DISH Network	$ 1,575,091	$ 2,098,689

EBITDA is not a measure determined in accordance with accounting principles generally accepted in the United States ("GAAP") and should not be considered a substitute for operating income, net income or any other measure determined in accordance with GAAP. EBITDA is used as a measurement of operating efficiency and overall financial performance and we believe it to be a helpful measure for those evaluating companies in the pay-TV industry. Conceptually, EBITDA measures the amount of income generated each period that could be used to service debt, pay taxes and fund capital expenditures. EBITDA should not be considered in isolation or as a substitute for measures of performance prepared in accordance with GAAP.

Income tax (provision) benefit, net. Our income tax provision was $534 million during the year ended December 31, 2018, compared to an income tax benefit of $515 million for the same period in 2017. On December 22, 2017, the Tax Reform Act was enacted, which, among other things, lowered the federal statutory corporate tax rate effective January 1, 2018 from 35% to 21%. Consequently, we remeasured our deferred tax assets and liabilities as of December 31, 2017 which positively impacted our "Income tax (provision) benefit, net" by approximately $1.2 billion for the year ended December 31, 2017.

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Year Ended December 31, 2017 Compared to the Year Ended December 31, 2016.

Statements of Operations Data	For the Years Ended December 31, 2017		2016		Variance Amount	%
	(In thousands)					
Revenue:						
Subscriber-related revenue	$ 14,260,412		$ 15,033,939		$ (773,527)	(5.1)
Equipment sales and other revenue	130,963		178,363		(47,400)	(26.6)
Total revenue	14,391,375		15,212,302		(820,927)	(5.4)
Costs and Expenses:						
Subscriber-related expenses	8,919,985		8,913,624		6,361	0.1
% of Subscriber-related revenue	62.6	%	59.3	%		
Satellite and transmission expenses	658,017		710,719		(52,702)	(7.4)
% of Subscriber-related revenue	4.6	%	4.7	%		
Cost of sales - equipment and other	95,116		133,902		(38,786)	(29.0)
Subscriber acquisition costs	1,204,261		1,456,492		(252,231)	(17.3)
General and administrative expenses	687,054		735,954		(48,900)	(6.6)
% of Total revenue	4.8	%	4.8	%		
Litigation expense	295,695		21,148		274,547	*
Depreciation and amortization	817,564		921,202		(103,638)	(11.3)
Impairment of long-lived assets (Note 8)	145,918		—		145,918	*
Total costs and expenses	12,823,610		12,893,041		(69,431)	(0.5)
Operating income (loss)	1,567,765		2,319,261		(751,496)	(32.4)
Other Income (Expense):						
Interest income	41,006		31,168		9,838	31.6
Interest expense, net of amounts capitalized	(63,172)		(53,141)		(10,031)	(18.9)
Other, net	104,488		119,315		(14,827)	(12.4)
Total other income (expense)	82,322		97,342		(15,020)	(15.4)
Income (loss) before income taxes	1,650,087		2,416,603		(766,516)	(31.7)
Income tax (provision) benefit, net	515,320		(865,818)		1,381,138	*
Effective tax rate	(31.2)	%	35.8	%		
Net income (loss)	2,165,407		1,550,785		614,622	39.6
Less: Net income (loss) attributable to noncontrolling interests, net of tax	66,718		52,846		13,872	26.2
Net income (loss) attributable to DISH Network	$ 2,098,689		$ 1,497,939		$ 600,750	40.1
Other Data:						
Pay-TV subscribers, as of period end (in millions) ***	13.242		13.671	**	(0.429)	(3.1)
DISH TV subscribers, as of period end (in millions) ***	11.030		12.170		(1.140)	(9.4)

Sling TV subscribers, as of period end (in millions)	2.212		1.501		0.711		47.4
Pay-TV subscriber additions (losses), net (in millions) ***	(0.284)		(0.392)		0.108		27.6
DISH TV subscriber additions (losses), net (in millions) ***	(0.995)		(1.270)		0.275		21.7
Sling TV subscriber additions (losses), net (in millions)	0.711		0.878		(0.167)		(19.0)
Pay-TV ARPU	$ 86.43		$ 88.66		$ (2.23)		(2.5)
DISH TV subscriber additions, gross (in millions)	1.477		1.736		(0.259)		(14.9)
DISH TV churn rate	1.78	%	1.97	%	(0.19)	%	(9.6)
DISH TV SAC	$ 751		$ 832		$ (81)		(9.7)
EBITDA	$ 2,423,099		$ 3,306,932		$ (883,833)		(26.7)

* Percentage is not meaningful.

** Our ending Pay-TV subscriber count increased by approximately 166,000 subscribers during the third quarter 2016 as a result of the change in our calculation for our commercial accounts.

*** During the third quarter 2017, as a result of Hurricane Maria, we removed approximately 145,000 subscribers representing all of our subscribers in Puerto Rico and the U.S. Virgin Islands, from our ending Pay-TV subscriber count. The effect of the removal of these 145,000 subscribers as of September 30, 2017 was excluded from the calculation of our net DISH TV subscriber additions/losses and DISH TV churn rate for the year ended December 31, 2017. See “Results of Operations – Pay-TV subscribers” for further information.

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Pay-TV subscribers. We lost approximately 284,000 net Pay-TV subscribers during the year ended December 31, 2017 compared to the loss of approximately 392,000 net Pay-TV subscribers during the same period in 2016. The decrease in net Pay-TV subscriber losses during the year ended December 31, 2017 resulted from fewer net DISH TV subscriber losses, partially offset by fewer net Sling TV subscriber additions. We lost approximately 995,000 net DISH TV subscribers during the year ended December 31, 2017 compared to the loss of approximately 1.270 million net DISH TV subscribers during the same period in 2016. This decrease in net DISH TV subscriber losses primarily resulted from a lower DISH TV churn rate, partially offset by lower gross new DISH TV subscriber activations. We added approximately 711,000 net Sling TV subscribers during the year ended December 31, 2017 compared to the addition of approximately 878,000 net Sling TV subscribers during the same period in 2016. This decrease in net Sling TV subscriber additions is primarily related to a higher number of customer disconnects on a larger Sling TV subscriber base and from increased competition, including competition from other OTT service providers.

Our DISH TV churn rate for the year ended December 31, 2017 was 1.78% compared to 1.97% for the same period in 2016. This decrease primarily resulted from our emphasis on acquiring and retaining higher quality subscribers. See below for discussion regarding the impacts of Hurricane Maria on Puerto Rico and the U.S. Virgin Islands during September 2017. While our DISH TV churn rate improved during the year ended December 31, 2017, it continues to be adversely affected by increased competitive pressures, including aggressive marketing, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers, as well as cord cutting. Our DISH TV churn rate is also impacted by, among other things, our ability to consistently provide outstanding customer service, price increases, programming interruptions in connection with the scheduled expiration of certain programming carriage contracts, our ability to control piracy and other forms of fraud and the level of our retention efforts.

During the year ended December 31, 2017, we activated approximately 1.477 million gross new DISH TV subscribers compared to approximately 1.736 million gross new DISH TV subscribers during the same period in 2016, a decrease of 14.9%. This decrease in our gross new DISH TV subscriber activations was primarily impacted by increased competitive pressures, including aggressive marketing and retention efforts, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers, as well as stricter customer acquisition policies for our DISH TV subscribers, including an emphasis on acquiring higher quality subscribers.

During September 2017, Hurricane Maria caused extraordinary damage in Puerto Rico and the U.S. Virgin Islands, resulting in a widespread loss of power and infrastructure. Given the devastation and loss of power, substantially all customers in those areas were unable to receive our service as of September 30, 2017. In an effort to ensure customers would not be charged for services they were unable to receive, we proactively paused service for those customers. Accordingly, we removed approximately 145,000 subscribers, representing all of our subscribers in Puerto Rico and the U.S. Virgin Islands, from our ending Pay-TV subscriber count as of September 30, 2017. The effect of the removal of these 145,000 subscribers as of September 30, 2017 was excluded from the calculation of our net DISH TV subscriber additions/losses and DISH TV churn rate for the year ended December 31, 2017. During the fourth quarter 2017, 75,000 of these customers reactivated. We incurred certain costs in connection with the re-activation of these returning subscribers, and accordingly, these returning customers were recorded as gross new DISH TV subscriber activations for the year ended December 31, 2017 with the corresponding costs recorded in “Subscriber acquisition costs” in our Consolidated Statements of Operations and Comprehensive Income (Loss) and/or in “Purchases of property and equipment” in our Consolidated Statements of Cash Flows. We cannot predict when the remaining

subscribers in Puerto Rico and the U.S. Virgin Islands discussed above will be able to receive service, how many will return or when they may return to active subscriber status, and there can be no assurance that they will return. Although we continue to assess the potential impact of Hurricane Maria on our subscriber base, the impact of the hurricane did not have a material effect on our overall financial position or results of operations.

Subscriber-related revenue. "Subscriber-related revenue" totaled $14.260 billion for the year ended December 31, 2017, a decrease of $774 million or 5.1% compared to the same period in 2016. The decrease in "Subscriber-related revenue" from the same period in 2016 was primarily related to the decrease in Pay-TV ARPU discussed below and a lower average Pay-TV subscriber base. We expect these trends in "Subscriber-related revenue" to continue.

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Pay-TV ARPU. Pay-TV ARPU was $86.43 during the year ended December 31, 2017 versus $88.66 during the same period in 2016. The $2.23 or 2.5% decrease in Pay-TV ARPU was primarily attributable to an increase in Sling TV subscribers as a percentage of our total Pay-TV subscriber base and a shift in DISH TV programming package mix to lower priced programming packages. Sling TV subscribers on average purchase lower priced programming services than DISH TV subscribers, and therefore, the increase in Sling TV subscribers had a negative impact on Pay-TV ARPU. These decreases were partially offset by DISH TV programming package price increases in the first quarter 2017 and 2016 and an increase in Sling TV subscribers with higher priced Sling TV programming packages.

Subscriber-related expenses. "Subscriber-related expenses" totaled $8.920 billion during the year ended December 31, 2017, an increase of $6 million or 0.1% compared to the same period in 2016. The increase in "Subscriber-related expenses" was primarily attributable to higher programming costs per subscriber, partially offset by a lower average Pay-TV subscriber base and a decrease in variable costs per subscriber. The increase in programming costs per subscriber was driven by rate increases in certain of our programming contracts, including the renewal of certain contracts at higher rates, particularly for local broadcast channels. "Subscriber-related expenses" represented 62.6% and 59.3% of "Subscriber-related revenue" during the years ended December 31, 2017 and 2016, respectively. The increase in this expense to revenue ratio primarily resulted from lower subscriber-related revenue and higher programming costs, discussed above.

Subscriber acquisition costs. "Subscriber acquisition costs" totaled $1.204 billion for the year ended December 31, 2017, a decrease of $252 million or 17.3% compared to the same period in 2016. This change was primarily attributable to fewer gross new DISH TV subscriber activations and a decrease in DISH TV SAC, discussed below.

DISH TV SAC. DISH TV SAC was $751 during the year ended December 31, 2017 compared to $832 during the same period in 2016, a decrease of $81 or 9.7%. This change was primarily attributable to a decrease in hardware costs per activation, a decrease in advertising costs per activation and the reactivation of subscribers in Puerto Rico and the U.S. Virgin Islands in fourth quarter 2017. The expenses we incurred for the reactivation of subscribers in Puerto Rico and the U.S. Virgin Islands were lower on a per subscriber basis than those incurred for the remaining gross new DISH TV activations during the year ended December 31, 2017. The decrease in hardware costs per activation was primarily due to a reduction in manufacturing costs related to certain receiver systems and a higher percentage of remanufactured receivers being activated on new DISH TV subscriber accounts.

During the years ended December 31, 2017 and 2016, the amount of equipment capitalized under our lease program for new DISH TV subscribers totaled $137 million and $243 million, respectively. This decrease in capital expenditures under our lease program for new DISH TV subscribers resulted primarily from fewer gross new DISH TV subscriber activations and a decrease in hardware costs per activation, discussed above.

Litigation expense. "Litigation expense" related to certain significant legal settlements, judgments and/or accruals totaled $296 million during the year ended December 31, 2017, an increase of $275 million compared to the same period in 2016. See Note 14 in the Notes to the Consolidated Financial Statements for further discussion.

Depreciation and amortization. “Depreciation and amortization” expense totaled $818 million during the year ended December 31, 2017, a $104 million or 11.3% decrease compared to the same period in 2016. This change was primarily driven by a decrease in depreciation expense from equipment leased to new and existing DISH TV subscribers, partially offset by the increase in depreciation expense associated with our EchoStar XVIII satellite, which became operational during the third quarter 2016.

Impairment of long-lived assets. “Impairment of long-lived assets” of $146 million during the year ended December 31, 2017 resulted from an impairment of the T1 satellite. See Note 8 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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Interest expense, net of amounts capitalized. "Interest expense, net of amounts capitalized" totaled $63 million during the year ended December 31, 2017, an increase of $10 million or 18.9% compared to the same period in 2016. This increase was primarily related to interest expense associated with debt issuances during 2016 and 2017, partially offset by an increase of $172 million in capitalized interest principally associated with the commercialization of our wireless spectrum and a reduction in interest expense from debt redemptions during 2016 and 2017. On June 14, 2017, the FCC issued an order granting our application to acquire the 600 MHz Licenses. The addition of the carrying amount of these licenses, together with the carrying amount of current wireless spectrum licenses, exceeded the amount of long-term debt and capital lease obligations on our Consolidated Balance Sheets since June 14, 2017. Therefore, beginning June 14, 2017, materially all of our interest expense is being capitalized. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Earnings before interest, taxes, depreciation and amortization. EBITDA was $2.423 billion during the year ended December 31, 2017, a decrease of $884 million or 26.7% compared to the same period in 2016. EBITDA for the year ended December 31, 2017 was negatively impacted by "Litigation expense" of $296 million and "Impairment of long-lived assets" of $146 million. The following table reconciles EBITDA to the accompanying financial statements.

	For the Years Ended December 31,	
	2017	2016
	(In thousands)	
EBITDA	$ 2,423,099	$ 3,306,932
Interest, net	(22,166)	(21,973)
Income tax (provision) benefit, net	515,320	(865,818)
Depreciation and amortization	(817,564)	(921,202)
Net income (loss) attributable to DISH Network	$ 2,098,689	$ 1,497,939

EBITDA is not a measure determined in accordance with GAAP and should not be considered a substitute for operating income, net income or any other measure determined in accordance with GAAP. EBITDA is used as a measurement of operating efficiency and overall financial performance and we believe it to be a helpful measure for those evaluating companies in the pay-TV industry. Conceptually, EBITDA measures the amount of income generated each period that could be used to service debt, pay taxes and fund capital expenditures. EBITDA should not be considered in isolation or as a substitute for measures of performance prepared in accordance with GAAP.

Income tax (provision) benefit, net. Our income tax benefit was $515 million during the year ended December 31, 2017, compared to an income tax provision of $866 million for the same period in 2016. On December 22, 2017, the Tax Reform Act was enacted, which, among other things, lowered the federal statutory corporate tax rate effective for us in future periods from 35% to 21%. Consequently, we remeasured our deferred tax assets and liabilities as of December 31, 2017 which positively impacted our "Income tax (provision) benefit, net" by approximately $1.2 billion. Our effective tax rate was negatively impacted by $255 million of "Litigation expense" related to the FTC Action during the year ended December 31, 2017, as any eventual payments of this expense may not be deductible for income tax purposes. The tax deductibility of any eventual payments may change based upon, among other things, further developments in the FTC Action, including final adjudication of the FTC Action. See Note 14 in the Notes to

our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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LIQUIDITY AND CAPITAL RESOURCES

Cash, Cash Equivalents and Current Marketable Investment Securities

We consider all liquid investments purchased within 90 days of their maturity to be cash equivalents. See Note 6 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information regarding our marketable investment securities. As of December 31, 2018, our cash, cash equivalents and current marketable investment securities totaled $2.069 billion compared to $1.981 billion as of December 31, 2017, an increase of $88 million. This increase in cash, cash equivalents and current marketable investment securities primarily resulted from cash generated from operating activities of $2.518 billion, partially offset by the redemption and repurchases of our 4 1/4% Senior Notes due 2018 with an aggregate principal balance of $1.026 billion, $82 million of repurchases of our 7 7/8% Senior Notes due 2019 in open market trades and capital expenditures of $1.317 billion (including capitalized interest related to FCC authorizations).

Debt Maturity

Our 7 1/8% Senior Notes with an aggregate principal balance of $1.5 billion were redeemed on February 1, 2016.

Our 4 5/8% Senior Notes with an aggregate principal balance of $900 million were redeemed on July 17, 2017.

During 2017 and 2018, we repurchased $174 million and $57 million, respectively, of our 4 1/4% Senior Notes due 2018 in open market trades. The remaining balance of $969 million were redeemed on April 2, 2018.

During the year ended December 31, 2018, we repurchased $82 million of our 7 7/8% Senior Notes due 2019 in open market trades. The remaining balance of $1.318 billion matures on September 1, 2019. We expect to fund the remaining obligation from cash and marketable investment securities balances at that time. But, depending on market conditions, we may refinance the remaining obligation in whole or in part.

Cash Flow

The following discussion highlights our cash flow activities during the years ended December 31, 2018, 2017 and 2016.

Cash flows from operating activities. We typically reinvest the cash flow from operating activities in our business primarily to grow our subscriber base, expand our infrastructure, make strategic investments, such as significant investments in wireless, including commercialization of our wireless spectrum, and repay debt obligations. For the years ended December 31, 2018, 2017 and 2016, we reported "Net cash flows from operating activities" of $2.518 billion, $2.780 billion and $2.854 billion, respectively.

Net cash flows from operating activities from 2017 to 2018 decreased $262 million, primarily attributable to a decrease in cash flows resulting from changes in operating assets and liabilities principally attributable to timing differences between book expense and cash payments, including income taxes. This decrease was partially offset by a $267 million increase in income adjusted to exclude non-cash charges for "Realized and unrealized losses (gains) on investments," "Depreciation and amortization" expense, "Impairment of long-lived assets" and "Deferred tax expense (benefit)."

Net cash flows from operating activities from 2016 to 2017 decreased $74 million, primarily attributable to a $317 million decrease in income adjusted to exclude non-cash charges for "Realized and unrealized losses (gains) on investments," "Depreciation and amortization" expense, "Impairment of long-lived assets" and "Deferred tax expense (benefit)," partially offset by an increase in cash flows resulting from changes in operating assets and liabilities principally attributable to timing differences between book expense and cash payments.

Cash flows from investing activities. Our investing activities generally include purchases and sales of marketable investment securities, acquisitions, strategic investments, including purchases and settlements of derivative financial instruments, and purchases of wireless spectrum licenses, capital expenditures and capitalized interest. For the years ended December 31, 2018, 2017 and 2016, we reported outflows from "Net cash flows from investing activities" of $1.975 billion, $6.522 billion and $1.737 billion, respectively.

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During the years ended December 31, 2018, 2017 and 2016, capital expenditures for new and existing DISH TV customer equipment totaled $226 million, $259 million and $387 million, respectively. The decrease in 2018 and 2017 for new and existing DISH TV customer equipment primarily resulted from fewer gross new DISH TV subscriber activations and fewer existing customer upgrades.

The year ended December 31, 2018 was impacted by cash outflows primarily related to capital expenditures of $1.317 billion (including $923 million of capitalized interest related to FCC authorizations) and $674 million in net purchases of marketable investment securities.

The year ended December 31, 2017 was impacted by cash outflows primarily related to a $4.711 billion payment to the FCC for the 600 MHz Licenses, $953 million of capitalized interest related to FCC authorizations, $432 million of capital expenditures and $360 million in net purchases of marketable investment securities.

The year ended December 31, 2016 was impacted by cash outflows primarily related to the upfront payment related to Auction 1000 of $1.5 billion, $724 million of capitalized interest related to FCC authorizations, $614 million of capital expenditures and cash inflows related to a $562 million settlement of our derivative financial instruments and $524 million in net sales of marketable investment securities.

Cash flows from financing activities. Our financing activities generally include net proceeds related to the issuance of long-term and convertible debt, cash used for the repurchase, redemption or payment of long-term debt and capital lease obligations, and repurchases of our Class A common stock. For the year ended December 31, 2018 and 2017, we reported outflows from “Net cash flows from financing activities” of $1.135 billion and $103 million, respectively. For the year ended December 31, 2016, we reported inflows from “Net cash flows from financing activities” of $3.154 billion.

The net cash outflows in 2018 primarily related to the redemption and repurchases of our 4 1/4% Senior Notes due 2018 with an aggregate principal balance of $1.026 billion and $82 million of repurchases of our 7 7/8% Senior Notes due 2019 in open market trades.

The net cash outflows in 2017 primarily related to the redemption of our 4 5/8% Senior Notes with an aggregate principal balance of $900 million and the $174 million repurchases of our 4 1/4% Senior Notes due 2018 in open market trades, partially offset by approximately $994 million in net proceeds from the issuance of the Convertible Notes due 2024.

The net cash inflows in 2016 primarily related to $4.973 billion in net proceeds from the issuance of our 7 3/4% Senior Notes due 2026 and the Convertible Notes due 2026, partially offset by the redemption of our 7 1/8% Senior Notes with an aggregate principal balance of $1.5 billion and $260 million in net cost incurred in connection with the convertible note hedge and warrant transactions.

Free Cash Flow

We define free cash flow as “Net cash flows from operating activities” less “Purchases of property and equipment,” and “Capitalized interest related to FCC authorizations,” as shown on our Consolidated Statements of Cash Flows. We believe free cash flow is an important liquidity metric because it measures, during a given period, the amount of cash generated that is available to repay debt obligations, make investments (including strategic wireless investments), fund acquisitions and for certain other activities. Free cash flow is not a measure determined in accordance with GAAP and should not be considered a substitute for “Operating income,” “Net income,” “Net cash flows from operating activities” or any other measure determined in accordance with GAAP. Since free cash flow includes investments in operating assets, we believe this non-GAAP liquidity measure is useful in addition to the most directly comparable GAAP measure “Net cash flows from operating activities.”

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Free cash flow can be significantly impacted from period to period by changes in "Net income (loss)" adjusted to exclude certain non-cash charges, operating assets and liabilities, "Purchases of property and equipment," and "Capitalized interest related to FCC authorizations." These items are shown in the "Net cash flows from operating activities" and "Net cash flows from investing activities" sections on our Consolidated Statements of Cash Flows included herein. Operating asset and liability balances can fluctuate significantly from period to period and there can be no assurance that free cash flow will not be negatively impacted by material changes in operating assets and liabilities in future periods, since these changes depend upon, among other things, management's timing of payments and control of inventory levels, and cash receipts. In addition to fluctuations resulting from changes in operating assets and liabilities, free cash flow can vary significantly from period to period depending upon, among other things, net Pay-TV subscriber additions (losses), subscriber revenue, DISH TV subscriber churn, subscriber acquisition and retention costs including amounts capitalized under our equipment lease programs for DISH TV subscribers, operating efficiencies, increases or decreases in purchases of property and equipment, expenditures related to the commercialization of our wireless spectrum and other factors.

The following table reconciles free cash flow to "Net cash flows from operating activities."

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Free cash flow	$ 1,201,144	$ 1,394,214	$ 1,515,863
Add back:			
Purchases of property and equipment (including capitalized interest related to FCC authorizations)	1,316,697	1,385,293	1,338,384
Net cash flows from operating activities	$ 2,517,841	$ 2,779,507	$ 2,854,247

Operational Liquidity

We make general investments in property such as satellites, set-top boxes, information technology and facilities that support our overall Pay-TV business. We also will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate our wireless spectrum licenses and related assets. Moreover, since we are primarily a subscriber-based company, we also make subscriber-specific investments to acquire new subscribers and retain existing subscribers. While the general investments may be deferred without impacting the business in the short-term, the subscriber-specific investments are less discretionary. Our overall objective is to generate sufficient cash flow over the life of each subscriber to provide an adequate return against the upfront investment. Once the upfront investment has been made for each subscriber, the subsequent cash flow is generally positive, but there can be no assurances that over time we will recoup or earn a return on the upfront investment.

There are a number of factors that impact our future cash flow compared to the cash flow we generate at a given point in time. The first factor is our DISH TV churn rate and how successful we are at retaining our current Pay-TV

subscribers. To the extent we lose Pay-TV subscribers from our existing base, the positive cash flow from that base is correspondingly reduced. The second factor is how successful we are at maintaining our subscriber-related margins. To the extent our "Subscriber-related expenses" grow faster than our "Subscriber-related revenue," the amount of cash flow that is generated per existing subscriber is reduced. Our subscriber-related margins have been reduced by, among other things, a shift to lower priced Pay-TV programming packages and higher programming costs. The third factor is the rate at which we acquire new subscribers. The faster we acquire new subscribers, the more our positive ongoing cash flow from existing subscribers is offset by the negative upfront cash flow associated with acquiring new subscribers. Conversely, the slower we acquire subscribers, the more our operating cash flow is enhanced in that period. Finally, our future cash flow is impacted by the rate at which we make general investments (including significant investments in wireless), incur expenditures related to the commercialization of our wireless licenses (including any expenditures associated with the deployment of our wireless networks), incur litigation expense, and any cash flow from financing activities. Recently, declines in our Pay-TV subscriber base and subscriber-related margins have negatively impacted our cash flow, which has been partially offset by the short-term benefit of less upfront cash outflows related to acquiring fewer new subscribers. There can be no assurance that the short-term benefit of less upfront cash outflows related to acquiring fewer new subscribers will continue in the future.

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Subscriber Base

We lost approximately 920,000 net Pay-TV subscribers during the year ended December 31, 2018 compared to the loss of approximately 284,000 net Pay-TV subscribers during the same period in 2017. The increase in net Pay-TV subscriber losses during the year ended December 31, 2018 resulted from higher net DISH TV subscriber losses and fewer net Sling TV subscriber additions. Our net Pay-TV subscriber losses during the year ended December 31, 2018 were negatively impacted by Univision and AT&T's removal of certain of their channels from our DISH TV and Sling TV programming lineup. As a result, we experienced higher net Pay-TV subscriber losses beginning in the third quarter 2018 and continuing into the fourth quarter 2018. With respect to the Univision removal, in light of, among other things, certain Univision programming being available to consumers through alternative methods including over the air antennas and directly from Univision over the Internet, the current state of our negotiations with Univision and the duration of the absence of these channels from our programming lineups, this removal may be permanent. We lost approximately 1.125 million net DISH TV subscribers during the year ended December 31, 2018 compared to the loss of approximately 995,000 net DISH TV subscribers during the same period in 2017. This increase in net DISH TV subscriber losses resulted from lower gross new DISH TV subscriber activations, partially offset by a lower number of customer disconnects. We added approximately 205,000 net Sling TV subscribers during the year ended December 31, 2018 compared to the addition of approximately 711,000 net Sling TV subscribers during the same period in 2017. This decrease in net Sling TV subscriber additions is primarily related to increased competition, including competition from other OTT service providers and to a higher number of customer disconnects on a larger Sling TV subscriber base, including the impact from Univision and AT&T's removal of certain of their channels from our programming lineup.

See "Results of Operations" above for further information.

Subscriber Acquisition and Retention Costs

We incur significant upfront costs to acquire subscribers, including advertising, independent third-party retailer incentives, payments made to third-parties, equipment subsidies, installation services, and/or new customer promotions. While we attempt to recoup these upfront costs over the lives of their subscription, there can be no assurance that we will be successful in achieving that objective. With respect to our DISH TV services, we employ business rules such as minimum credit requirements for prospective customers and contractual commitments to receive service for a minimum term. We strive to provide outstanding customer service to increase the likelihood of customers keeping their Pay-TV services over longer periods of time. Subscriber acquisition costs for Sling TV subscribers are significantly lower than those for DISH TV subscribers. Our subscriber acquisition costs may vary significantly from period to period.

We incur significant costs to retain our existing DISH TV subscribers, mostly as a result of upgrading their equipment to next generation receivers, primarily including our Hopper receivers, and by providing retention credits. As with our subscriber acquisition costs, our retention upgrade spending includes the cost of equipment and installation services. In certain circumstances, we also offer programming at no additional charge and/or promotional pricing for limited periods to existing customers in exchange for a contractual commitment to receive service for a minimum

term. A component of our retention efforts includes the installation of equipment for customers who move. Our DISH TV subscriber retention costs may vary significantly from period to period.

Seasonality

Historically, the first half of the year generally produces fewer gross new DISH TV subscriber activations than the second half of the year, as is typical in the pay-TV industry. In addition, the first and fourth quarters generally produce a lower DISH TV churn rate than the second and third quarters. However, in recent years, as the pay-TV industry has matured, we and our competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of pay-TV services. As a result, historical trends in seasonality described above may not be indicative of future trends. Our net Sling TV subscriber additions are impacted by, among other things, certain major sporting events and other major television events. We expect our new Sling TV subscriber additions to potentially demonstrate seasonality patterns as our Sling TV services become more established. We expect to be able to assess the seasonality patterns once we have a longer subscriber history.

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Satellites

Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming that we offer. Moreover, current competitive conditions require that we continue to expand our offering of new programming. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited. In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other satellites and use it as a replacement for the failed or lost satellite. Such a failure could result in a prolonged loss of critical programming or a significant delay in our plans to expand programming as necessary to remain competitive and cause us to expend a significant portion of our cash to acquire or lease additional satellite capacity.

Security Systems

Increases in theft of our signal or our competitors' signals could, in addition to reducing gross new subscriber activations, also cause subscriber churn to increase. We use Security Access Devices in our DBS receiver systems to control access to authorized programming content. Furthermore, for our Sling TV services, we encrypt programming content and use digital rights management software to, among other things, prevent unauthorized access to our programming content. Our signal encryption 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 Security Access Device replacement programs and updates in security software, that are intended to make signal 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 and that we remain susceptible to additional signal theft. We expect that future replacements of Security Access Devices may be necessary to keep our system secure. We cannot ensure that we will be successful in reducing or controlling theft of our programming content and we may incur additional costs in the future if our system's security is compromised.

Stock Repurchases

Our Board of Directors previously authorized stock repurchases of up to $1.0 billion of our outstanding Class A common stock. On October 29, 2018, our Board of Directors extended this authorization such that we are currently authorized to repurchase up to $1.0 billion of our outstanding Class A common stock through and including December 31, 2019. As of December 31, 2018, we may repurchase up to $1.0 billion under this program. During the years ended December 31, 2018, 2017 and 2016, there were no repurchases of our Class A common stock.

Covenants and Restrictions Related to our Long-Term Debt

We are subject to the covenants and restrictions set forth in the indentures related to our long-term debt. In particular, the indentures related to our outstanding senior notes issued by DISH DBS Corporation ("DISH DBS") contain restrictive covenants that, among other things, impose limitations on the ability of DISH DBS and its restricted subsidiaries to: (i) incur additional indebtedness; (ii) enter into sale and leaseback transactions; (iii) pay dividends or make distributions on DISH DBS' capital stock or repurchase DISH DBS' capital stock; (iv) make certain investments; (v) create liens; (vi) enter into certain transactions with affiliates; (vii) merge or consolidate with another company; and (viii) transfer or sell assets. Should we fail to comply with these covenants, all or a portion of the debt under the senior notes and our other long-term debt could become immediately payable. The senior notes also provide that the debt may be required to be prepaid if certain change-in-control events occur. In addition, the Convertible Notes due 2026 and Convertible Notes due 2024 provide that, if a "fundamental change" (as defined in the related indenture) occurs, holders may require us to repurchase for cash all or part of their Convertible Notes. As of the date of filing of this Annual Report on Form 10-K, we and DISH DBS were in compliance with the covenants and restrictions related to our respective long-term debt.

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Other

We are also vulnerable to fraud, particularly in the acquisition of new subscribers. While we are addressing the impact of subscriber fraud through a number of actions, there can be no assurance that we will not continue to experience fraud, which could impact our subscriber growth and churn. Economic weakness may create greater incentive for signal theft, piracy and subscriber fraud, which could lead to higher subscriber churn and reduced revenue.

Obligations and Future Capital Requirements

Contractual Obligations and Off-Balance Sheet Arrangements

As of December 31, 2018, future maturities of our long-term debt, capital lease and contractual obligations are summarized as follows:

	Payments due by period						
	Total	2019	2020	2021	2022	2023	Thereafte
	(In thousands)						
Long-term debt obligations	$ 15,957,087	$ 1,322,070	$ 1,104,503	$ 2,004,626	$ 2,004,756	$ 1,504,569	$ 8,016,5
Capital lease obligations	66,984	19,922	19,166	20,645	7,251	—	—
Interest expense on long-term debt and capital lease obligations	4,247,370	889,686	759,850	662,942	594,458	438,488	901,94
Satellite-related obligations	887,386	311,374	236,913	206,111	124,668	8,320	—
Operating lease obligations	162,335	38,561	25,482	20,915	16,208	10,371	50,798
Purchase obligations	1,392,861	1,296,580	48,966	29,284	18,031	—	—
Total	$ 22,714,023	$ 3,878,193	$ 2,194,880	$ 2,944,523	$ 2,765,372	$ 1,961,748	$ 8,969,3

In certain circumstances the dates on which we are obligated to make these payments could be delayed. These amounts will increase to the extent that we procure launch and/or in-orbit insurance on our satellites or contract for the construction, launch or lease of additional satellites.

The table above does not include $385 million of liabilities associated with unrecognized tax benefits that were accrued, as discussed in Note 10 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K, and are included on our Consolidated Balance Sheets as of December 31, 2018. We do not expect any portion of this amount to be paid or settled within the next twelve months.

The table above does not include all potential expenses we expect to incur for our wireless projects including, among other things, our First Phase plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion through 2020. We expect the Second Phase to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion. See Note 14 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Other than the “Guarantees” disclosed in Note 14 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K, we generally do not engage in off-balance sheet financing activities.

Satellite Insurance

We generally do not carry commercial launch or in-orbit insurance on any of the satellites we use, other than certain satellites leased from third parties. We generally do not use commercial insurance to mitigate the potential financial impact of launch or in-orbit failures because we believe that the cost of insurance premiums is uneconomical relative to the risk of such failures. We lease substantially all of our satellite capacity from third parties, including the vast majority of our transponder capacity from EchoStar, and we do not carry commercial insurance on any of the satellites we lease from them. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited. In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite.

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Purchase Obligations

Our 2019 purchase obligations primarily consist of binding purchase orders for certain fixed contractual commitments to purchase programming content, receiver systems and related equipment, broadband equipment, digital broadcast operations, transmission costs, streaming delivery technology and infrastructure, engineering services, and other products and services related to the operation of our Pay-TV services. In addition, our 2019 purchase obligations also include equipment related to the network deployment for our wireless business. Our purchase obligations can fluctuate significantly from period to period due to, among other things, management's timing of payments and inventory purchases, and can materially impact our future operating asset and liability balances, and our future working capital requirements.

Programming Contracts

In the normal course of business, we enter into contracts to purchase programming content in which our payment obligations are generally contingent on the number of Pay-TV subscribers to whom we provide the respective content. These programming commitments are not included in the "Commitments" table above. The terms of our contracts typically range from one to ten years with annual rate increases. Our programming expenses will increase to the extent we are successful in growing our Pay-TV subscriber base. In addition, programming costs per subscriber continue to increase due to contractual price increases and the renewal of long-term programming contracts on less favorable pricing terms.

Future Capital Requirements

We expect to fund our future working capital, capital expenditures and debt service requirements from cash generated from operations, existing cash, cash equivalents and marketable investment securities balances, and cash generated through raising additional capital. The amount of capital required to fund our future working capital and capital expenditure needs varies, depending on, among other things, the rate at which we acquire new subscribers and the cost of subscriber acquisition and retention, including capitalized costs associated with our new and existing subscriber equipment lease programs. Certain of our capital expenditures for 2019 are expected to be driven by the costs associated with subscriber premises equipment. These expenditures are necessary to operate and maintain our DISH TV services. Consequently, we consider them to be non-discretionary. Our capital expenditures vary depending on the number of satellites leased or under construction at any point in time, and could increase materially as a result of increased competition, significant satellite failures, or economic weakness and uncertainty. Our DISH TV subscriber base has been declining and there can be no assurance that our DISH TV subscriber base will not continue to decline and that the pace of such decline will not accelerate. In the event that our DISH TV subscriber base continues to decline, it will have a material adverse long-term effect on our cash flow. In addition, the rulings in the Telemarketing litigation requiring us to pay up to an aggregate amount of $341 million and imposing certain injunctive relief against us, if upheld, would have a material adverse effect on our cash, cash equivalents and marketable investment securities balances and our business operations. In addition, we expect to incur capital expenditures in 2019 related to the

commercialization of our existing wireless spectrum licenses, including capital expenditures associated with our wireless projects and potential purchase of additional wireless spectrum licenses discussed below. The amount of capital required will also depend on the levels of investment necessary to support potential strategic initiatives that may arise from time to time. These factors, including a reduction in our available future cash flows, could require that we raise additional capital in the future.

Volatility in the financial markets has made it more difficult at times for issuers of high-yield indebtedness, such as us, to access capital markets at acceptable terms. These developments may have a significant effect on our cost of financing and our liquidity position.

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Wireless

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below.

DISH Network Spectrum. We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets. These wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We expect to complete the First Phase by March 2020, with subsequent phases to be completed thereafter. As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, RF design, and deployment services for the First Phase. Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion through 2020. We expect the Second Phase to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion. We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers.

See Note 14 “Commitments and Contingencies – Commitments – Wireless – DISH Network Spectrum” in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses. During 2015, through our wholly-owned subsidiaries American II and American III, we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, the parent company of Northstar Wireless, and in SNR HoldCo, the parent company of SNR Wireless, respectively. On October 27, 2015, the FCC granted certain AWS-3 Licenses to Northstar Wireless and to SNR Wireless, respectively, which are recorded in “FCC authorizations” on our Consolidated Balance Sheets. Under the applicable accounting guidance in ASC 810, Northstar Spectrum and SNR HoldCo are considered variable interest entities and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 in the Notes to our Consolidated Financial

Statements in this Annual Report on Form 10-K for further information.

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. See Note 14 “Commitments and Contingencies – Commitments – Wireless – DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses” in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on acceptable terms or at all. There can be no assurance that we, the Northstar Entities and/or the SNR Entities will be able to develop and implement business models that will realize a return on these wireless spectrum licenses or that we, the Northstar Entities and/or the SNR Entities will be able to profitably deploy the assets represented by these wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations. See Note 14 "Commitments and Contingencies – Commitments – Wireless" in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Availability of Credit and Effect on Liquidity

The ability to raise capital has generally existed for us despite economic weakness and uncertainty. While modest fluctuations in the cost of capital will not likely impact our current operational plans, significant fluctuations could have a material adverse effect on our business, results of operations and financial condition.

Critical Accounting Estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates, judgments and assumptions that affect amounts reported therein. Management bases its estimates, judgments and assumptions on historical experience and on various other factors that are believed to be reasonable under the circumstances. Actual results may differ from previously estimated amounts, and such differences may be material to our consolidated financial statements. Estimates and assumptions are reviewed periodically, and the effects of revisions are reflected prospectively in the period they occur. The following represent what we believe are the critical accounting policies that may involve a high degree of estimation, judgment and complexity. For a summary of our significant accounting policies, including those discussed below, see Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K.

Long-Lived Assets

Useful lives of property and equipment. Since we retain ownership of certain equipment provided pursuant to our subscriber equipment lease programs for DISH TV and broadband subscribers, we capitalize and depreciate equipment costs that would otherwise be expensed at the time of sale. Such capitalized costs are depreciated over the estimated useful life of the equipment, which is based on, among other things, management's judgment of the risk of technological obsolescence. Because of the inherent difficulty of making this estimate, the estimated useful life of capitalized equipment may change based on, among other things, historical experience and changes in technology as well as our response to competitive conditions. Changes in estimated useful life may impact "Depreciation and amortization" on our Consolidated Statements of Operations and Comprehensive Income (Loss). For example, if we had decreased the estimated useful life of our capitalized subscriber equipment by one year, annual 2018 depreciation

expense would have increased by approximately $44 million.

Valuation of long-lived assets. We review our long-lived assets and identifiable finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. For assets which are held and used in operations, the asset would be impaired if the carrying amount of the asset (or asset group) exceeded its undiscounted future net cash flows. Once an impairment is determined, the actual impairment recognized is the difference between the carrying amount and the fair value as estimated using one of the following approaches: income, cost and/or market. The carrying amount of a long-lived asset or asset group is considered impaired when the anticipated undiscounted cash flows from such asset or asset group is less than its carrying amount. In that event, a loss is recorded in “Impairment of long-lived assets” on our Consolidated Statements of Operations and Comprehensive Income (Loss) based on the amount by which the carrying amount exceeds the fair value of the long-lived asset or asset group. Fair value, using the income approach, is determined primarily using a discounted cash flow model that uses the estimated cash flows associated with the asset or asset group under review, discounted at a rate commensurate with the risk involved. Fair value, utilizing the cost approach, is determined based on the replacement cost of the asset reduced for, among other things, depreciation and obsolescence. Fair value, utilizing the market approach, benchmarks the fair value against the carrying amount. See Note 8 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K. Assets which are to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell. We currently evaluate our DBS satellite fleet for impairment as one asset group whenever events or changes in circumstances indicate that its carrying amount may not be recoverable.

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Valuation of intangible assets with indefinite lives. We evaluate the carrying amount of intangible assets with indefinite lives annually, and also when events and circumstances warrant.

DBS Licenses. We combine all of our indefinite-lived DBS licenses that we currently utilize or plan to utilize in the future into a single unit of accounting. For 2018, 2017 and 2016, management performed a qualitative assessment to determine whether it is more likely than not that the fair value of the DBS licenses exceeds its carrying amount. In our assessment, we considered several qualitative factors, including, among others, overall financial performance, industry and market considerations, and relevant company specific events. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of the DBS licenses exceeds its carrying amount. As such, no further analysis was required.

Wireless Spectrum Licenses. We currently combine our 600 MHz, 700 MHz, AWS-4 and H Block wireless spectrum licenses and the Northstar Licenses and SNR Licenses into a single unit of accounting. These wireless spectrum licenses were assessed quantitatively in 2018. Our quantitative assessment consisted of both an income approach and a market approach. The income approach estimated the fair value of these licenses using the "Greenfield" approach. The Greenfield approach values the licenses by calculating the cash flow generating potential of a hypothetical start-up company that goes into business with no assets except the licenses to be valued. A discounted cash flow analysis is used to estimate what a marketplace participant would be willing to pay to purchase the aggregated wireless licenses as of the valuation date. The market approach uses prior transactions including auctions to estimate the fair value of the licenses. In conducting this quantitative assessment, we determined that the fair value of these licenses exceeds the carrying amount of these licenses under both approaches.

In 2017, management performed a qualitative assessment to determine whether it is more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. In our assessment, we considered several qualitative factors, including, among others, macroeconomic conditions, industry and market conditions, relevant company specific events, and perception of the market. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. As such, no further analysis was required.

During 2016, our AWS-4 and H Block wireless spectrum licenses and the Northstar Licenses and SNR Licenses were combined into a single unit of accounting. For 2016, management performed a qualitative assessment to determine whether it was more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. In our assessment, we considered several qualitative factors, including, among others, macroeconomic conditions, industry and market conditions, relevant company specific events, and perception of the market. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. As such, no further analysis was required.

During 2016, our 700 MHz wireless spectrum licenses were assessed as a single unit of accounting. For 2016, management performed a qualitative assessment to determine whether it was more likely than not that the fair value of

the 700 MHz wireless spectrum licenses exceeded its carrying amount. In our assessment, we considered several qualitative factors, including, among others, macroeconomic conditions, industry and market conditions, relevant company specific events, and perception of the market. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeded its carrying amount. As such, no further analysis was required.

During 2018, 2017, and 2016, our MVDDS wireless spectrum licenses were assessed as a single unit of accounting. For 2018, 2017, and 2016, management assessed these licenses quantitatively. Our quantitative assessment in each year for the MVDDS wireless spectrum licenses consisted of a market approach. The market approach uses prior transactions including auctions to estimate the fair value of the licenses. In conducting these quantitative assessments, we determined that the fair value of our MVDDS wireless spectrum licenses exceeded their carrying amount.

Changes in circumstances or market conditions could result in a write-down of any of the above wireless spectrum licenses in the future.

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Income Taxes

Our income tax policy is to record the estimated future tax effects of temporary differences between the tax bases of assets and liabilities and amounts reported in the accompanying consolidated balance sheets, as well as operating loss and tax credit carryforwards. Determining necessary valuation allowances requires us to make assessments about the timing of future events, including the probability of expected future taxable income and available tax planning opportunities. We periodically evaluate our need for a valuation allowance based on both historical evidence, including trends, and future expectations in each reporting period. Any such valuation allowance is recorded in either "Income tax (provision) benefit, net" on our Consolidated Statements of Operations and Comprehensive Income (Loss) or "Accumulated other comprehensive income (loss)" within "Stockholders' equity (deficit)" on our Consolidated Balance Sheets. Future performance could have a significant effect on the realization of tax benefits, or reversals of valuation allowances, as reported in our consolidated results of operations.

Management evaluates the recognition and measurement of uncertain tax positions based on applicable tax law, regulations, case law, administrative rulings and pronouncements and the facts and circumstances surrounding the tax position. Changes in our estimates related to the recognition and measurement of the amount recorded for uncertain tax positions could result in significant changes in our "Income tax provision (benefit), net," which could be material to our consolidated results of operations.

Contingent Liabilities

A significant amount of management judgment is required in determining when, or if, an accrual should be recorded for a contingency and the amount of such accrual. Estimates generally are developed in consultation with counsel and are based on an analysis of potential outcomes. Due to the uncertainty of determining the likelihood of a future event occurring and the potential financial statement impact of such an event, it is possible that upon further development or resolution of a contingent matter, a charge could be recorded in a future period to "General and administrative expenses" or "Litigation expense" on our Consolidated Statements of Operations and Comprehensive Income (Loss) that would be material to our consolidated results of operations and financial condition.

Inflation

Inflation has not materially affected our operations during the past three years. We believe that our ability to increase the prices charged for our products and services in future periods will depend primarily on competitive pressures.

Backlog

We do not have any material backlog of our products.

New Accounting Pronouncements

Leases. In February 2016, the FASB issued ASU 2016-02 Leases ("ASU 2016-02"), and has modified the standard thereafter. ASU 2016-02 amends the existing accounting standards for lease accounting, including requiring that lessees recognize right of use assets and lease liabilities for the vast majority of leases. For income statement purposes, the FASB retained a dual model, requiring leases to be classified as either operating or finance. Classification is based on criteria that are largely similar to those applied in current lease accounting, but without explicit bright lines. The accounting guidance for lessors remains largely unchanged.

This standard became effective for us on January 1, 2019, and we elected to adopt the standard using the modified retrospective approach. Under the modified retrospective approach, we will recognize in beginning retained earnings as of January 1, 2019 an adjustment for the cumulative effect of the adoption, which we believe will be immaterial. We will also recognize right of use assets and lease liabilities for periods ending after January 1, 2019 for the majority of our operating leases, which will be the primary impact of the standard on our results. Our operating leases consist principally of satellites, real estate, vehicles used in our in-home service operations and other equipment.

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As permitted under the standard, we do not intend to recognize right of use assets or lease liabilities for leases with a term of 12 months or less. In transition, we plan to apply practical expedients that permit us not to reassess (i) whether expired or existing contracts contain a lease under the new standard, (ii) the lease classification for expired or existing leases, or (iii) whether previously-capitalized initial direct costs would qualify for capitalization under the new standard. In addition, we do not intend to use hindsight during transition. We do not expect the adoption of ASU 2016-02 to have a significant impact to our Consolidated Statements of Operations or Cash Flows. We will provide additional disclosures for periods ending in 2019 comparing the results under previous guidance to those under the new standard.

Financial Instruments – Credit Losses. On June 16, 2016, the FASB issued ASU 2016-13 Financial Instruments – Credit Losses, Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"), which changes the way entities measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net earnings. This standard will be effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted. We are evaluating the impact the adoption of ASU 2016-13 will have on our Consolidated Financial Statements and related disclosures.

Fair Value Measurement. On August 28, 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement ("ASU 2018-13"), which modifies the disclosure requirements on fair value measurements by adding, modifying or removing certain disclosures. This standard will be effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted. Certain disclosures in ASU 2018-13 are required to be applied on a retrospective basis and others on a prospective basis. We are evaluating the impact the adoption of ASU 2018-13 will have on our Consolidated Financial Statements and related disclosures.

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Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risks Associated with Financial Instruments

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

Cash, Cash Equivalents and Current Marketable Investment Securities

As of December 31, 2018, our cash, cash equivalents and current marketable investment securities had a fair value of $2.069 billion. Of that amount, a total of $2.066 billion was invested in: (a) cash; (b) money market funds; (c) debt instruments of the United States Government and its agencies; (d) 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; and/or (e) 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, continue investing in our business, pursue acquisitions and other strategic transactions, fund ongoing operations, repay debt obligations and expand our business. Consequently, the size of this portfolio can fluctuate significantly as cash is received and used in our business for these or other purposes. The value of this portfolio is 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 affect the fair value of our cash, cash equivalents and current marketable investment securities portfolio; however, we normally hold these investments to maturity. Based on our December 31, 2018 current non-strategic investment portfolio of $2.066 billion, a hypothetical 10% change in average interest rates would not have a material impact on the fair value due to the limited duration of our investments.

Our cash, cash equivalents and current marketable investment securities had an average annual rate of return for the year ended December 31, 2018 of 2.3%. 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 2018 would result in a decrease of approximately $4 million in annual interest income.

Restricted Cash, Cash Equivalents and Marketable Investment Securities

As of December 31, 2018, we had $68 million of restricted cash and marketable investment securities invested in: (a) cash; (b) money market funds; (c) debt instruments of the United States Government and its agencies; and/or (d) instruments with similar risk, duration and credit quality characteristics to commercial paper. Based on our December 31, 2018 investment portfolio, a hypothetical 10% increase in average interest rates would not have a material impact on the fair value of our restricted cash and marketable investment securities.

Long-Term Debt

As of December 31, 2018, we had long-term debt of $15.957 billion, excluding capital lease obligations and unamortized deferred financing costs and debt discounts, on our Consolidated Balance Sheets. We estimated the fair value of this debt to be approximately $14.032 billion using quoted market prices. The fair value of our debt is affected by fluctuations in interest rates. A hypothetical 10% decrease in assumed interest rates would increase the fair value of our debt by approximately $458 million. To the extent interest rates increase, our future costs of financing would increase at the time of any future financings. As of December 31, 2018, all of our long-term debt consisted of fixed rate indebtedness.

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Derivative Financial Instruments

From time to time, we invest in speculative financial instruments, including derivatives. As of December 31, 2018, we did not hold any derivative financial instruments.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our consolidated financial statements are included in this Annual Report on Form 10-K beginning on page F-1.

Our selected quarterly financial data for each of the quarterly periods ended March 31, June 30, September 30 and December 31 for 2018 and 2017 is included in Note 17 in the Notes to our Consolidated Financial Statements in this Annual Report on 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 Principal Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of the end of the period covered by this report. Based upon that evaluation, our Chief Executive Officer and Principal Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

Changes in internal control over financial reporting

There has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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 United States generally accepted accounting principles.

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, 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.

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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 (COSO). Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2018.

The effectiveness of our internal control over financial reporting as of December 31, 2018 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which appears in Item 15(a) of this Annual Report on Form 10-K.

Item 9B. OTHER INFORMATION

None

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

The information required by this Item with respect to the identity and business experience of our executive officers is set forth on page 22 of this Annual Report on Form 10-K under the caption “Executive Officers of the Registrant.”

Item 11. EXECUTIVE COMPENSATION

The information required by this Item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

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PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

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

(1)Financial Statements

	Page
Report of KPMG LLP, Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets at December 31, 2018 and 2017	F-4
Consolidated Statements of Operations and Comprehensive Income (Loss) for the years ended December 31, 2018, 2017 and 2016	F-5
Consolidated Statements of Changes in Stockholders' Equity (Deficit) for the years ended December 31, 2016, 2017 and 2018	F-6
Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016	F-8
Notes to Consolidated Financial Statements	F-9

(2)Financial Statement Schedules

None. All schedules have been included in the consolidated financial statements or notes thereto.

(3)Exhibits

3.1(a)*	Amended and Restated Articles of Incorporation of DISH Network Corporation (incorporated by reference to Exhibit 3.1(a) on the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2003, Commission File No. 0-26176), as amended by the Certificate of Amendment to the Articles of Incorporation of DISH Network Corporation (incorporated by reference to Annex 1 on DISH Network Corporation's Definitive Information Statement on Schedule 14C filed on December 31, 2007, Commission File No. 0-26176) and as further amended by the Certificate of Amendment to the Articles of Incorporation of DISH Network Corporation, effective November 3, 2015 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 3, 2015, Commission File No. 0-26176).

3.1(b)*	Amended and Restated Bylaws of DISH Network Corporation (incorporated by reference to Exhibit 3.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended September 30, 2014, Commission File No. 0-26176).
3.1(c)*	Amended and Restated Bylaws of DISH Network Corporation (incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K of DISH Network Corporation filed April 3, 2018, Commission File No. 0-26176).
3.2(a)*	Articles of Incorporation of DISH DBS Corporation (incorporated by reference to Exhibit 3.4(a) to the Registration Statement on Form S-4 of DISH DBS Corporation, Registration No. 333-31929), as amended by the Certificate of Amendment of the Articles of Incorporation of DISH DBS Corporation, dated as of August 25, 2003 (incorporated by reference to Exhibit 3.1(b) to the Annual Report on Form 10-K of DISH DBS Corporation for the year ended December 31, 2003, Commission File No. 333-31929), and as further amended by the Amendment of the Articles of Incorporation of DISH DBS Corporation, effective December 12, 2008 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of DISH DBS Corporation filed December 12, 2008, Registration No. 333-31929).

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3.2(b)*	Bylaws of DISH DBS Corporation (incorporated by reference to Exhibit 3.4(b) to the Registration Statement on Form S-4 of DISH DBS Corporation, Registration No. 333-31929).
4.1*	Registration Rights Agreement by and between DISH Network Corporation and Charles W. Ergen (incorporated by reference to Exhibit 4.8 to the Registration Statement on Form S-1 of DISH Network Corporation, Registration No. 33-91276). P
4.2*	Indenture, relating to the 7 7/8% Senior Notes Due 2019, dated as of August 17, 2009 between DISH DBS Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed August 18, 2009, Commission File No. 0-26176).
4.3*	Indenture, relating to the 5 1/8% Senior Notes due 2020, dated as of April 5, 2013, among DISH DBS Corporation, the guarantors named on the signature pages thereto and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed April 5, 2013, Commission File No. 0-26176).
4.4*	Indenture, relating to the 6 3/4% Senior Notes due 2021, dated as of May 5, 2011, among DISH DBS Corporation, the guarantors named on the signature pages thereto and Wells Fargo Bank, National Association, as trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed May 5, 2011, Commission File No. 000-26176).
4.5*	Indenture, relating to the 5 7/8% Senior Notes due 2022, dated as of May 16, 2012 among DISH DBS Corporation, the guarantors named on the signature pages thereto and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K of DISH Network Corporation filed May 16, 2012, Commission File No. 0-26176).
4.6*	Indenture, relating to the 5% Senior Notes due 2023, dated as of December 27, 2012 among DISH DBS Corporation, the guarantors named on the signature pages thereto and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed December 27, 2012, Commission File No. 0-26176).
4.7*	Indenture, relating to the 5 7/8% Senior Notes due 2024, dated as of November 20, 2014 among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 21, 2014, Commission File No. 0-26176).
4.8*	Indenture, relating to the 7 3/4% Senior Notes due 2026, dated as of June 13, 2016, among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8_K of DISH Network Corporation filed June 13, 2016, Commission File No. 0-26176).
4.9*	Indenture, relating to the 2 3/8% Convertible Notes due 2024, dated as of March 17, 2017, by and between DISH Network Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8 K of DISH Network Corporation filed March 20, 2017, Commission File No. 0-26176).

4.10*	Indenture, relating to the 3 3/8% Convertible Notes due 2026, dated as of August 8, 2016, by and between DISH Network Corporation and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8 K of DISH Network Corporation filed August 8, 2016, Commission File No. 0-26176).

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4.11*	Supplemental Indenture relating to the 7 7/8% Senior Notes due 2019 (incorporated by reference to Exhibit 4.10 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
4.12*	Supplemental Indenture relating to the 5 1/8% Senior Notes due 2020 (incorporated by reference to Exhibit 4.11 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
4.13*	Supplemental Indenture relating to the 6 3/4% Senior Notes due 2021 (incorporated by reference to Exhibit 4.12 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
4.14*	Supplemental Indenture relating to the 5 7/8% Senior Notes due 2022 (incorporated by reference to Exhibit 4.13 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
4.15*	Supplemental Indenture relating to the 5% Senior Notes due 2023 (incorporated by reference to Exhibit 4.14 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
4.16*	Supplemental Indenture relating to the 5 7/8% Senior Notes due 2024 (incorporated by reference to Exhibit 4.15 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
4.17*	Supplemental Indenture relating to the 7 3/4% Senior Notes due 2026 (incorporated by reference to Exhibit 4.16 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018, Commission File No. 333-31929).
10.1*	2002 Class B CEO Stock Option Plan (incorporated by reference to Appendix A to DISH Network Corporation's Definitive Proxy Statement on Schedule 14A dated April 9, 2002). **
10.2*	Satellite Service Agreement, dated February 19, 2004, between SES Americom, Inc. and DISH Network Corporation (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2004, Commission File No. 0-26176). ***
10.3*	Amendment No. 1 to Satellite Service Agreement, dated March 10, 2004, between SES Americom, Inc. and DISH Network Corporation (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2004, Commission File No. 0-26176). ***
10.4*	Whole RF Channel Service Agreement, dated February 4, 2004, between Telesat Canada and DISH Network Corporation (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2004, Commission File No. 0-26176). ***
10.5*	Letter Amendment to Whole RF Channel Service Agreement, dated March 25, 2004, between Telesat Canada and DISH Network Corporation (incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2004, Commission File No. 0-26176). ***

10.6*	Amendment No. 2 to Satellite Service Agreement, dated April 30, 2004, between SES Americom, Inc. and DISH Network Corporation (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2004, Commission File No. 0-26176). ***

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10.7*	Second Amendment to Whole RF Channel Service Agreement, dated May 5, 2004, between Telesat Canada and DISH Network Corporation (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2004, Commission File No. 0-26176). ***
10.8*	Third Amendment to Whole RF Channel Service Agreement, dated October 12, 2004, between Telesat Canada and DISH Network Corporation (incorporated by reference to Exhibit 10.22 to the Annual Report on Form 10-K of DISH Network Corporation for the year ended December 31, 2004, Commission File No. 0-26176). ***
10.9*	Amendment No. 3 to Satellite Service Agreement, dated November 19, 2004 between SES Americom, Inc. and DISH Network Corporation (incorporated by reference to Exhibit 10.24 to the Annual Report on Form 10-K of DISH Network Corporation for the year ended December 31, 2004, Commission File No. 0-26176). ***
10.10*	Amendment No. 4 to Satellite Service Agreement, dated April 6, 2005, between SES Americom, Inc. and DISH Network Corporation (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2005, Commission File No. 0-26176). ***
10.11*	Amendment No. 5 to Satellite Service Agreement, dated June 20, 2005, between SES Americom, Inc. and DISH Network Corporation (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2005, Commission File No. 0-26176). ***
10.12*	Incentive Stock Option Agreement (Form A) (incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005, Commission File No. 0-26176). **
10.13*	Incentive Stock Option Agreement (Form B) (incorporated by reference to Exhibit 99.2 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005, Commission File No. 0-26176). **
10.14*	Restricted Stock Unit Agreement (Form A) (incorporated by reference to Exhibit 99.3 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005, Commission File No. 0-26176). **
10.15*	Restricted Stock Unit Agreement (Form B) (incorporated by reference to Exhibit 99.4 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005, Commission File No. 0-26176). **
10.16*	Nonemployee Director Stock Option Agreement (incorporated by reference to Exhibit 99.6 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005, Commission File No. 0-26176). **
10.17*	Separation Agreement between EchoStar Corporation and DISH Network Corporation (incorporated by reference from Exhibit 2.1 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007, Commission File No. 001-33807).
10.18*	Tax Sharing Agreement between EchoStar Corporation and DISH Network Corporation (incorporated by reference from Exhibit 10.2 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007, Commission File No. 001-33807).

10.19* Employee Matters Agreement between EchoStar Corporation and DISH Network Corporation (incorporated by reference from Exhibit 10.3 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007, Commission File No. 001-33807).

10.20* Intellectual Property Matters Agreement between EchoStar Corporation, EchoStar Acquisition L.L.C., Echosphere L.L.C., DISH DBS Corporation, EIC Spain SL, EchoStar Technologies L.L.C. and DISH Network Corporation (incorporated by reference from Exhibit 10.4 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007, Commission File No. 001-33807).

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10.21*	Form of Satellite Capacity Agreement between EchoStar Corporation and DISH Network L.L.C. (incorporated by reference from Exhibit 10.28 to the Amendment No. 2 to Form 10 of EchoStar Corporation filed December 26, 2007, Commission File No. 001-33807).
10.22*	Description of the 2008 Long-Term Incentive Plan dated December 22, 2008 (incorporated by reference to Exhibit 10.42 to the Annual Report on Form 10-K of DISH Network Corporation for the year ended December 31, 2008, Commission File No. 0-26176). **
10.23*	DISH Network Corporation 2009 Stock Incentive Plan (incorporated by reference to Appendix A to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed September 19, 2014, Commission File No. 000-26176). **
10.24*	Amended and Restated DISH Network Corporation 2001 Nonemployee Director Stock Option Plan (incorporated by reference to Appendix B to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed March 31, 2009, Commission File No. 000-26176). **
10.25*	Amended and Restated DISH Network Corporation 1999 Stock Incentive Plan (incorporated by reference to Appendix C to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed March 31, 2009, Commission File No. 000-26176). **
10.26*	NIMIQ 5 Whole RF Channel Service Agreement, dated September 15, 2009, between Telesat Canada and EchoStar Corporation (incorporated by reference from Exhibit 10.30 to the Annual Report on Form 10-K of EchoStar Corporation for the year ended December 31, 2009, Commission File No. 001-33807). ***
10.27*	NIMIQ 5 Whole RF Channel Service Agreement, dated September 15, 2009, between EchoStar Corporation and DISH Network L.L.C. (incorporated by reference from Exhibit 10.31 to the Annual Report on Form 10-K of EchoStar Corporation for the year ended December 31, 2009, Commission File No. 001-33807). ***
10.28*	Professional Services Agreement, dated August 4, 2009, between EchoStar Corporation and DISH Network Corporation (incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of EchoStar Corporation for the quarter ended September 30, 2009, Commission File No. 001-33807). ***
10.29*	Allocation Agreement, dated August 4, 2009, between EchoStar Corporation and DISH Network Corporation (incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of EchoStar Corporation for the quarter ended September 30, 2009, Commission File No. 001-33807).
10.30*	Amendment to Form of Satellite Capacity Agreement (Form A) between EchoStar Corporation and DISH Network L.L.C. (incorporated by reference from Exhibit 10.34 to the Annual Report on Form 10-K of EchoStar Corporation for the year ended December 31, 2009, Commission File No. 001-33807).
10.31*	Amendment to Form of Satellite Capacity Agreement (Form B) between EchoStar Corporation and DISH Network L.L.C. (incorporated by reference from Exhibit 10.35 to the Annual Report on Form 10-K of EchoStar Corporation for the year ended December 31, 2009, Commission File No. 001-33807).
10.32*	EchoStar XVI Satellite Capacity Agreement between EchoStar Satellite Services L.L.C. and DISH Network L.L.C. (incorporated by reference from Exhibit 10.36 to the Annual Report on Form 10-K of EchoStar

Corporation for the year ended December 31, 2009, Commission File No. 001-33807). ***

10.33* Amended and Restated Investment Agreement, dated as of February 24, 2011, and First Amendment to Amended and Restated Investment Agreement, dated as of March 15, 2011, between DISH Network Corporation and DBSD North America, Inc. (incorporated by reference from Exhibit 10.1 to the Current Report on Form 8-K of ICO Global Communications (Holdings) Limited filed March 17, 2011, Commission File No. 001-33008).

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10.34* Implementation Agreement, dated as of March 15, 2011, between DISH Network and ICO Global Communications (Holdings) Limited (incorporated by reference from Exhibit 10.2 to the Current Report on Form 8-K of ICO Global Communications (Holdings) Limited filed March 17, 2011, Commission File No. 001-33008).

10.35* Restructuring Support Agreement, dated as of March 15, 2011, between DISH Network and ICO Global Communications (Holdings) Limited (incorporated by reference from Exhibit 10.3 to the Current Report on Form 8-K of ICO Global Communications (Holdings) Limited filed March 17, 2011, Commission File No. 001-33008).

10.36* Purchase Agreement, dated as of June 14, 2011, by and among TerreStar Networks Inc., TerreStar License Inc., TerreStar National Services Inc., TerreStar Networks Holdings (Canada) Inc., TerreStar Networks (Canada) Inc., 0887729 B.C. Ltd., and Gamma Acquisition L.L.C. and DISH Network Corporation (solely with respect to Section 6.19 thereof) (incorporated by reference from Exhibit 99.1 to the Current Report on Form 8-K of DISH Network Corporation filed June 16, 2011, Commission File No. 000-26176).

10.37* Cost Allocation Agreement, dated April 29, 2011, between EchoStar Corporation and DISH Network (incorporated by reference from Exhibit 10.2 to the Quarterly Report on Form 10-Q of EchoStar Corporation for the quarter ended June 30, 2011, Commission File No. 001-33807).

10.38* Settlement and Patent License between TiVo Inc. and DISH Network Corporation and EchoStar Corporation, dated as of April 29, 2011 (incorporated by reference to Exhibit 10.9 to the Quarterly Report on Form 10-Q/A of EchoStar Corporation filed February 21, 2012, Commission File No. 001-33807). ***

10.39* QuetzSat-1 Transponder Service Agreement, dated November 24, 2008, between EchoStar 77 Corporation, a direct wholly-owned subsidiary of EchoStar, and DISH Network L.L.C. (incorporated by reference to Exhibit 10.25 to the Annual Report on Form 10-K of EchoStar Corporation for the year ended December 31, 2009, Commission File No. 001-33807). ***

10.40* Receiver Agreement dated January 1, 2012 between Echosphere L.L.C. and EchoStar Technologies L.L.C. (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2012, Commission File No. 0-26176). ***

10.41* Broadcast Agreement dated January 1, 2012 between EchoStar Broadcasting Corporation and DISH Network L.L.C. (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2012, Commission File No. 0-26176). ***

10.42* Confidential Settlement Agreement and Release dated as of October 21, 2012 by and between Voom HD Holdings LLC and CSC Holdings, LLC, on the one hand, and DISH Network L.L.C., on the other hand, and for certain limited purposes, DISH Media Holdings Corporation, MSG Holdings, L.P., The Madison Square Garden Company and EchoStar Corporation (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended September 30, 2012, Commission File No. 0-26176). ***

10.43* Description of the 2013 Long-Term Incentive Plan dated November 30, 2012 (incorporated by reference to the Current Report on Form 8-K of DISH Network Corporation filed December 6, 2012, Commission File

	No. 000-26176). **
10.44*	Amendment to EchoStar XVI Satellite Capacity Agreement between EchoStar Satellite Services L.L.C. and DISH Network L.L.C. dated December 21, 2012 (incorporated by reference to Exhibit 10.62 to the Annual Report on Form 10-K of DISH Network Corporation for the year ended December 31, 2012, Commission File No. 0-26176). ***

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10.45*	Transaction Agreement, dated February 20, 2014, by and among EchoStar Corporation, Hughes Satellite Systems Corporation, Alpha Company LLC, DISH Network L.L.C., DISH Operating L.L.C. and EchoStar XI Holding L.L.C. (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2014, Commission File No. 0-26176). ***
10.46*	Investor Rights Agreement, dated February 20, 2014, by and among EchoStar Corporation, Hughes Satellite Systems Corporation, DISH Operating L.L.C. and DISH Network L.L.C. (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2014, Commission File No. 0-26176). ***
10.47*	Form of Satellite Capacity Agreement between EchoStar Satellite Operating Corporation and DISH Operating L.L.C. (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2014, Commission File No. 0-26176).***
10.48*	First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC, as amended on February 12, 2015 (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2015, Commission File No. 0-26176). ***
10.49*	First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC, as amended on February 12, 2015 (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2015, Commission File No. 0-26176). ***
10.50*	First Amended and Restated Limited Liability Company Agreement dated October 13, 2014, among Northstar Spectrum, LLC, Northstar Manager, LLC and American AWS-3 Wireless II L.L.C., as amended on February 12, 2015 (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2015, Commission File No. 0-26176). ***
10.51*	First Amended and Restated Limited Liability Company Agreement dated October 13, 2014, among SNR Wireless HoldCo, LLC, SNR Wireless Management, LLC and American AWS-3 Wireless III L.L.C., as amended on February 12, 2015 (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10_Q of DISH Network Corporation for the quarter ended March 31, 2015, Commission File No. 0_26176). ***
10.52*	Management Services Agreement dated September 12, 2014, between American AWS-3 Wireless II L.L.C. and Northstar Wireless, LLC (incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2015, Commission File No. 0-26176). ***
10.53*	Management Services Agreement dated September 12, 2014, between American AWS-3 Wireless III L.L.C. and SNR Wireless LicenseCo, LLC (incorporated by reference to Exhibit 10.6 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2015, Commission File No. 0-26176).***

10.54*	Second Amendment, dated October 1, 2015, to the First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC, as first amended on February 12, 2015 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015, Commission File No. 0-26176).

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10.55*	Guaranty of Certain Obligations to FCC, dated as of October 1, 2015, made by DISH Network Corporation in favor of the Federal Communications Commission (Northstar Wireless) (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015, Commission File No. 0-26176).
10.56*	Second Amendment, dated October 1, 2015, to the First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC, as first amended on February 12, 2015 (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015, Commission File No. 0-26176).
10.57*	Guaranty of Certain Obligations to FCC, dated as of October 1, 2015, made by DISH Network Corporation in favor of the Federal Communications Commission (SNR Wireless) (incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015, Commission File No. 0-26176).
10.58*	Form of Base/Additional Note Hedge Transaction Confirmation (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016, Commission File No. 0-26176).
10.59*	Form of Base/Additional Warrant Transaction Confirmation (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016, Commission File No. 0-26176).
10.60*	Description of the 2017 Long-Term Incentive Plan dated December 2, 2016 (incorporated by reference to the Current Report on Form 8-K of DISH Network Corporation filed December 8, 2016, Commission File No. 0-26176).**
10.61*	Share Exchange Agreement dated January 31, 2017, between DISH Network Corporation, DISH Network L.L.C., DISH Operating L.L.C., EchoStar Corporation, EchoStar Broadcasting Holding Parent L.L.C., EchoStar Broadcasting Holding Corporation, EchoStar Technologies Holding Corporation, and EchoStar Technologies L.L.C. (incorporated by reference in Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2017, Commission File No. 0-26176).***
10.62*	Second Amended and Restated Credit Agreement, dated March 31, 2018, by and among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC (incorporated by reference in Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2018, Commission File No. 0-26176).
10.63*	Second Amended and Restated Credit Agreement, dated March 31, 2018, by and among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC (incorporated by reference in Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2018, Commission File No. 0-26176).

10.64*	Second Amended and Restated Limited Liability Company Agreement of Northstar Spectrum, LLC, dated March 31, 2018, by and between Northstar Manager, LLC and American AWS-3 Wireless II L.L.C. (incorporated by reference in Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2018, Commission File No. 0-26176).

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10.65*	Second Amended and Restated Limited Liability Company Agreement of SNR Wireless HoldCo, LLC, dated March 31, 2018, by and between SNR Wireless Management, LLC, John Muleta and American AWS-3 Wireless III L.L.C. (incorporated by reference in Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended March 31, 2018, Commission File No. 0-26176).
10.66*	Third Amended and Restated Credit Agreement, dated June 7, 2018, by and among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC (incorporated by reference in Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2018, Commission File No. 0-26176).
10.67*	Third Amended and Restated Credit Agreement, dated June 7, 2018, by and among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC (incorporated by reference in Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2018, Commission File No. 0-26176).
10.68*	Third Amended and Restated Limited Liability Company Agreement of Northstar Spectrum, LLC, dated June 7, 2018, by and between Northstar Manager, LLC and American AWS-3 Wireless II L.L.C. (incorporated by reference in Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2018, Commission File No. 0-26176).
10.69*	Third Amended and Restated Limited Liability Company Agreement of SNR Wireless HoldCo, LLC, dated June 7, 2018, by and between SNR Wireless Management, LLC, John Muleta and American AWS-3 Wireless III L.L.C. (incorporated by reference in Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2018, Commission File No. 0-26176).
10.70*	Description of the 2019 Long-Term Incentive Plan dated August 17, 2018 (incorporated by reference to the Current Report on Form 8-K of DISH Network Corporation filed August 23, 2018, Commission File No. 0-26176).**
21	Subsidiaries of DISH Network Corporation.
23	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
24	Power of Attorney authorizing Timothy A. Messner as signatory for Charles W. Ergen, George R. Brokaw, James DeFranco, Cantey M. Ergen, Charles M. Lillis, Afshin Mohebbi, David K. Moskowitz, Tom A. Ortolf and Carl E. Vogel.
31.1	Section 302 Certification of Chief Executive Officer.
31.2	Section 302 Certification of Principal Financial Officer.
32.1	Section 906 Certification of Chief Executive Officer.
32.2	Section 906 Certification of Principal Financial Officer.
101	The following materials from the Annual Report on Form 10-K of DISH Network Corporation for the year ended December 31, 2018, filed on February 13, 2019, formatted in eXtensible Business Reporting Language (“XBRL”): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations and

Comprehensive Income (Loss), (iii) Consolidated Statement of Changes in Stockholders' Equity (Deficit), (iv) Consolidated Statements of Cash Flows, and (v) related notes to these financial statements.

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Filed herewith.

* Incorporated by reference.

** Constitutes a management contract or compensatory plan or arrangement.

*** Certain portions of the exhibit have been omitted and separately filed with the Securities and Exchange Commission with a request for confidential treatment.

Item 16. FORM 10-K SUMMARY

None

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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.

DISH NETWORK CORPORATION

By: /s/ Paul W. Orban
Paul W. Orban
Senior Vice President, Chief Accounting Officer and Principal Financial Officer

Date: February 13, 2019

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/ W. Erik Carlson W. Erik Carlson	President and Chief Executive Officer (Principal Executive Officer)	February 13, 2019
/s/ Paul W. Orban Paul W. Orban	Senior Vice President, Chief Accounting Officer and Principal Financial Officer (Principal Financial and Accounting Officer)	February 13, 2019
* Charles W. Ergen	Chairman	February 13, 2019
* George R. Brokaw	Director	February 13, 2019
* James DeFranco	Director	February 13, 2019
* Cantey M. Ergen	Director	February 13, 2019
*	Director	February 13, 2019

Charles M. Lillis		
*	Director	February 13, 2019
Afshin Mohebbi		
*	Director	February 13, 2019
David K. Moskowitz		
*	Director	February 13, 2019
Tom A. Ortolf		
*	Director	February 13, 2019
Carl E. Vogel		

* By: /s/ Timothy A. Messner
Timothy A. Messner
Attorney-in-Fact

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Consolidated Statements of Operations and Comprehensive Income (Loss) for the years ended December 31, 2018, 2017 and 2016	F-5
Consolidated Statements of Changes in Stockholders' Equity (Deficit) for the years ended December 31, 2016, 2017 and 2018	F-6
Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016	F-8
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Stockholders and Board of Directors
DISH Network Corporation:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of DISH Network Corporation and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive income (loss), changes in stockholders' equity (deficit), and cash flows for each of the years in the three year period ended December 31, 2018, and the related notes (collectively, the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method of accounting for revenue transactions with customers due to the adoption of Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers, as amended.

Transaction Between Entities Under Common Control

As discussed in Note 2 to the consolidated financial statements, the 2016 consolidated financial statements have been retrospectively revised for the effects of consolidating entities acquired under common control.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Controls Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting

was maintained in all material respects.

Our audits of the consolidated financial statements 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ KPMG LLP

We have served as the Company's auditor since 2002.

Denver, Colorado

February 13, 2019

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DISH NETWORK CORPORATION

CONSOLIDATED BALANCE SHEETS

(Dollars in thousands, except share amounts)

	As of December 31, 2018	December 31, 2017
Assets		
Current Assets:		
Cash and cash equivalents	$ 887,346	$ 1,479,508
Marketable investment securities	1,181,471	501,165
Trade accounts receivable, net of allowance for doubtful accounts of $16,966 and $15,511, respectively	639,855	653,948
Inventory	290,733	321,008
Other current assets	289,800	329,394
Total current assets	3,289,205	3,285,023
Noncurrent Assets:		
Restricted cash, cash equivalents and marketable investment securities	67,597	72,407
Property and equipment, net	1,928,180	2,183,661
FCC authorizations	24,736,961	23,725,789
Other investment securities	118,992	113,460
Other noncurrent assets, net	446,077	393,426
Total noncurrent assets	27,297,807	26,488,743
Total assets	$ 30,587,012	$ 29,773,766
Liabilities and Stockholders' Equity (Deficit)		
Current Liabilities:		
Trade accounts payable	$ 233,753	$ 393,305
Deferred revenue and other	655,312	709,074
Accrued programming	1,474,207	1,571,273
Accrued interest	268,479	282,006
Other accrued expenses	802,388	803,822
Current portion of long-term debt and capital lease obligations	1,341,993	1,068,524
Total current liabilities	4,776,132	4,828,004
Long-Term Obligations, Net of Current Portion:		
Long-term debt and capital lease obligations, net of current portion	13,810,784	15,134,441
Deferred tax liabilities	2,474,907	2,019,538
Long-term deferred revenue and other long-term liabilities	470,932	470,487
Total long-term obligations, net of current portion	16,756,623	17,624,466
Total liabilities	21,532,755	22,452,470
Commitments and Contingencies (Note 14)		

Redeemable noncontrolling interests (Note 2)	460,068	383,390
Stockholders' Equity (Deficit):		
Class A common stock, $.01 par value, 1,600,000,000 shares authorized, 229,448,857 and 228,033,671 shares issued and outstanding, respectively	2,295	2,280
Class B common stock, $.01 par value, 800,000,000 shares authorized, 238,435,208 shares issued and outstanding	2,384	2,384
Additional paid-in capital	3,379,093	3,296,488
Accumulated other comprehensive income (loss)	(874)	882
Accumulated earnings (deficit)	5,212,790	3,635,380
Total DISH Network stockholders' equity (deficit)	8,595,688	6,937,414
Noncontrolling interests	(1,499)	492
Total stockholders' equity (deficit)	8,594,189	6,937,906
Total liabilities and stockholders' equity (deficit)	$ 30,587,012	$ 29,773,766

The accompanying notes are an integral part of these consolidated financial statements.

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DISH NETWORK CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)

(Dollars in thousands, except per share amounts)

	For the Years Ended December 31,		
	2018	2017	2016
Revenue:			
Subscriber-related revenue	$ 13,456,088	$ 14,260,412	$ 15,033,939
Equipment sales and other revenue	165,214	130,963	178,363
Total revenue	13,621,302	14,391,375	15,212,302
Costs and Expenses (exclusive of depreciation shown separately below - Note 8):			
Subscriber-related expenses	8,544,577	8,919,985	8,913,624
Satellite and transmission expenses	576,568	658,017	710,719
Cost of sales - equipment and other	145,604	95,116	133,902
Subscriber acquisition costs:			
Cost of sales - subscriber promotion subsidies	50,253	74,145	143,507
Other subscriber acquisition costs	292,824	579,272	709,772
Subscriber acquisition advertising	426,230	550,844	603,213
Total subscriber acquisition costs	769,307	1,204,261	1,456,492
General and administrative expenses	725,601	687,054	735,954
Litigation expense (Note 14)	—	295,695	21,148
Depreciation and amortization (Note 8)	712,024	817,564	921,202
Impairment of long-lived assets (Note 8)	—	145,918	—
Total costs and expenses	11,473,681	12,823,610	12,893,041
Operating income (loss)	2,147,621	1,567,765	2,319,261
Other Income (Expense):			
Interest income	44,759	41,006	31,168
Interest expense, net of amounts capitalized	(15,006)	(63,172)	(53,141)
Other, net	11,801	104,488	119,315
Total other income (expense)	41,554	82,322	97,342
Income (loss) before income taxes	2,189,175	1,650,087	2,416,603
Income tax (provision) benefit, net	(533,684)	515,320	(865,818)
Net income (loss)	1,655,491	2,165,407	1,550,785
Less: Net income (loss) attributable to noncontrolling interests, net of tax	80,400	66,718	52,846
Net income (loss) attributable to DISH Network	$ 1,575,091	$ 2,098,689	$ 1,497,939

Weighted-average common shares outstanding - Class A and B common stock:			
Basic	467,350	466,021	464,807
Diluted	525,832	522,596	484,162
Earnings per share - Class A and B common stock:			
Basic net income (loss) per share attributable to DISH Network	$ 3.37	$ 4.50	$ 3.22
Diluted net income (loss) per share attributable to DISH Network	$ 3.00	$ 4.07	$ 3.15
Comprehensive Income (Loss):			
Net income (loss)	$ 1,655,491	$ 2,165,407	$ 1,550,785
Other comprehensive income (loss):			
Foreign currency translation adjustments	(1,343)	1,027	—
Unrealized holding gains (losses) on available-for-sale securities	(529)	9,671	3,050
Recognition of previously unrealized (gains) losses on available-for-sale securities included in net income (loss)	(8)	(11,129)	(99,312)
Deferred income tax (expense) benefit, net	124	532	35,062
Total other comprehensive income (loss), net of tax	(1,756)	101	(61,200)
Comprehensive income (loss)	1,653,735	2,165,508	1,489,585
Less: Comprehensive income (loss) attributable to noncontrolling interests, net of tax	80,400	66,718	52,846
Comprehensive income (loss) attributable to DISH Network	$ 1,573,335	$ 2,098,790	$ 1,436,739

The accompanying notes are an integral part of these consolidated financial statements.

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DISH NETWORK CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)

(In thousands)

	Class A and B Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Earnings (Deficit)	Treasury Stock	Noncontrolling Interests	Total
Balance, December 31, 2015	$ 5,203	$ 2,589,787	$ 61,981	$ 1,607,649	$ (1,569,459)	$ (1,000)	$ 2,694,1
Issuance of Class A common stock:							
Exercise of stock awards	5	10,067	—	—	—	—	10,072
Employee benefits	4	25,142	—	—	—	—	25,146
Employee Stock Purchase Plan	2	8,551	—	—	—	—	8,553
Non-cash, stock-based compensation	—	13,037	—	—	—	—	13,037
Change in unrealized holding gains (losses) on available-for-sale securities, net	—	—	(96,262)	—	—	—	(96,262
Deferred income tax (expense) benefit attributable to unrealized gains (losses) on available-for-sale securities	—	—	35,062	—	—	—	35,062
Retirement of treasury stock	(562)	—	—	(1,568,897)	1,569,459	—	—
Issuance of warrants	—	375,600	—	—	—	—	375,600
Initial equity component of the 3 3/8% Convertible Notes	—	487,521	—	—	—	—	487,521

due 2026, net of deferred taxes of $286,322							
Convertible note hedges, net of deferred taxes of $234,987	—	(400,113)	—	—	—	—	(400,11
Payments made to parent of transferred businesses	—	(34,371)	—	—	—	(75)	(34,446
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—	(550)	(550)
Net income (loss) attributable to DISH Network	—	—	—	1,497,939	—	—	1,497,9
Other	—	(3,796)	—	—	—	(601)	(4,397)
Balance, December 31, 2016	$ 4,652	$ 3,071,425	$ 781	$ 1,536,691	$ —	$ (2,226)	$ 4,611,3
Issuance of Class A common stock:							
Exercise of stock awards	5	14,508	—	—	—	—	14,513
Employee benefits	4	23,160	—	—	—	—	23,164
Employee Stock Purchase Plan	3	14,058	—	—	—	—	14,061
Non-cash, stock-based compensation	—	29,941	—	—	—	—	29,941
Change in unrealized holding gains (losses) on available-for-sale securities, net	—	—	(1,458)	—	—	—	(1,458)
Deferred income tax (expense) benefit attributable to unrealized gains (losses) on available-for-sale securities	—	—	532	—	—	—	532
Foreign currency translation	—	—	1,027	—	—	—	1,027
Initial equity component of the	—	159,869	—	—	—	—	159,869

2 3/8% Convertible Notes due 2024, net of deferred taxes of $92,512							
Payments made to parent of transferred businesses	—	(7,378)	—	—	—	274	(7,104)
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—	2,969	2,969
Net income (loss) attributable to DISH Network	—	—	—	2,098,689	—	—	2,098,6
Other	—	(9,095)	—	—	—	(525)	(9,620)
Balance, December 31, 2017	$ 4,664	$ 3,296,488	$ 882	$ 3,635,380	$ —	$ 492	$ 6,937,9

The accompanying notes are an integral part of these consolidated financial statements.

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DISH NETWORK CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT) – Continued

(In thousands)

	Class A and B Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Earnings (Deficit)	Treasury Stock (See Note 12)	Noncontrolling Interests	Total	Redeem Nonco Interes
Balance, December 31, 2017	$ 4,664	$ 3,296,488	$ 882	$ 3,635,380	$ —	$ 492	$ 6,937,906	$ 383,
Issuance of Class A common stock:								
Exercise of stock awards	3	4,243	—	—	—	—	4,246	—
Employee benefits	6	27,316	—	—	—	—	27,322	—
Employee Stock Purchase Plan	6	15,729	—	—	—	—	15,735	—
Non-cash, stock-based compensation	—	36,261	—	—	—	—	36,261	—
Change in unrealized holding gains (losses) on available-for-sale securities, net	—	—	(537)	—	—	—	(537)	—
Deferred income tax (expense) benefit attributable to unrealized gains (losses) on available-for-sale securities	—	—	124	—	—	—	124	—
Foreign currency translation	—	—	(1,343)	—	—	—	(1,343)	—
	—	—	—	2,319	—	—	2,319	—

ASU 2014-09 cumulative catch-up adjustment								
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—	3,722	3,722	76,6
Net income (loss) attributable to DISH Network	—	—	—	1,575,091	—	—	1,575,091	—
Other	—	(944)	—	—	—	(5,713)	(6,657)	—
Balance, December 31, 2018	$ 4,679	$ 3,379,093	$ (874)	$ 5,212,790	$ —	$ (1,499)	$ 8,594,189	$ 460,

The accompanying notes are an integral part of these consolidated financial statements.

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DISH NETWORK CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	For the Years Ended December 31,		
	2018	2017	2016
Cash Flows From Operating Activities:			
Net income (loss)	$ 1,655,491	$ 2,165,407	$ 1,550,785
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Depreciation and amortization	712,024	817,564	921,202
Impairment of long-lived assets	—	145,918	—
Realized and unrealized losses (gains) on investments	(11,908)	(99,997)	(119,092)
Non-cash, stock-based compensation	36,261	29,941	13,037
Deferred tax expense (benefit)	454,699	(485,973)	506,808
Change in long-term deferred revenue and other long-term liabilities	(3,303)	29,750	76,203
Other, net	(70,900)	(29,632)	9,573
Changes in current assets and current liabilities, net			
Trade accounts receivable	14,724	126,848	109,364
Allowance for doubtful accounts	(1,270)	(2,888)	(4,566)
Prepaid and accrued income taxes	93,618	(46,599)	(144,212)
Inventory	14,788	37,895	(43,157)
Other current assets	(46,772)	(63,154)	13,111
Trade accounts payable	(160,952)	(131,399)	33,976
Deferred revenue and other	(98,179)	(64,909)	(98,019)
Accrued programming and other accrued expenses	(70,480)	350,735	29,234
Net cash flows from operating activities	2,517,841	2,779,507	2,854,247
Cash Flows From Investing Activities:			
Purchases of marketable investment securities	(1,403,890)	(566,373)	(345,210)
Sales and maturities of marketable investment securities	730,210	206,272	868,792
Settlement of derivative financial instruments	—	—	562,234
Purchases of property and equipment	(393,938)	(431,795)	(614,055)
Capitalized interest related to FCC authorizations (Note 2)	(922,759)	(953,498)	(724,329)
Purchases of FCC authorizations, including deposits (Note 14)	—	(4,711,154)	(1,500,000)
Purchases of strategic investments	—	(90,381)	—
Other, net	15,104	25,376	15,498
Net cash flows from investing activities	(1,975,273)	(6,521,553)	(1,737,070)
Cash Flows From Financing Activities:			
Proceeds from issuance of senior notes	—	—	2,000,000
Proceeds from issuance of convertible notes (Note 9)	—	1,000,000	3,000,000

Purchases of convertible note hedges (Note 9)	—	—	(635,100)
Proceeds from issuance of warrants (Note 9)	—	—	375,600
Redemption and repurchases of senior notes	(1,108,489)	(1,074,139)	(1,500,000)
Repayment of long-term debt and capital lease obligations	(42,767)	(42,422)	(43,521)
Payments made to parent of transferred businesses	—	(7,098)	(34,446)
Net proceeds from Class A common stock options exercised and stock issued under the Employee Stock Purchase Plan	19,981	28,574	18,625
Debt issuance costs	—	(6,158)	(26,622)
Other, net	(3,270)	(1,994)	(606)
Net cash flows from financing activities	(1,134,545)	(103,237)	3,153,930
Net increase (decrease) in cash, cash equivalents, restricted cash and cash equivalents	(591,977)	(3,845,283)	4,271,107
Cash, cash equivalents, restricted cash and cash equivalents, beginning of period (Note 6)	1,479,901	5,325,184	1,054,077
Cash, cash equivalents, restricted cash and cash equivalents, end of period (Note 6)	$ 887,924	$ 1,479,901	$ 5,325,184

The accompanying notes are an integral part of these consolidated financial statements.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Business Activities

Principal Business

DISH Network Corporation is a holding company. Its subsidiaries (which together with DISH Network Corporation are referred to as "DISH Network," the "Company," "we," "us" and/or "our," unless otherwise required by the context) operate two primary business segments.

Pay-TV

We offer pay-TV services under the DISH® brand and the Sling® brand (collectively "Pay-TV" services). The DISH branded pay-TV service consists of, among other things, Federal Communications Commission ("FCC") licenses authorizing us to use direct broadcast satellite ("DBS") and Fixed Satellite Service ("FSS") spectrum, our owned and leased satellites, receiver systems, broadcast operations, customer service facilities, a leased fiber optic network, in-home service and call center operations, and certain other assets utilized in our operations ("DISH TV"). We also design, develop and distribute receiver systems and provide digital broadcast operations, including satellite uplinking/downlinking, transmission and other services to third-party pay-TV providers. See Note 2 and Note 18 for further information. The Sling branded pay-TV services consist of, among other things, multichannel, live-linear streaming over-the-top ("OTT") Internet-based domestic, international and Latino video programming services ("Sling TV"). As of December 31, 2018, we had 12.322 million Pay-TV subscribers in the United States, including 9.905 million DISH TV subscribers and 2.417 million Sling TV subscribers.

In addition, we historically offered broadband services under the dishNET™ brand, which includes satellite broadband services that utilize advanced technology and high-powered satellites launched by Hughes Communications, Inc. ("Hughes") and ViaSat, Inc. ("ViaSat") and wireline broadband services. However, as of the first quarter 2018, we have transitioned our broadband business focus from wholesale to authorized representative arrangements, and we are no longer marketing dishNET broadband services. Our existing broadband subscribers will decline through customer attrition. Generally, under these authorized representative arrangements, we will receive certain payments for each broadband service activation generated and installation performed, and we will not incur subscriber acquisition costs for these activations.

Wireless

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

DISH Network Spectrum

We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets. These wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband Internet of Things ("IoT"), which is the first phase of our network deployment ("First Phase"). We expect to complete the First Phase by March 2020, with subsequent phases to be completed thereafter. As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, Radio Frequency ("RF") design, and deployment services for the First Phase. Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers. See Note 14 for further information.

DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American AWS-3 Wireless II L.L.C. ("American II") and American AWS-3 Wireless III L.L.C. ("American III"), we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, LLC ("Northstar Spectrum"), the parent company of Northstar Wireless, L.L.C. ("Northstar Wireless," and collectively with Northstar Spectrum, the "Northstar Entities"), and in SNR Wireless HoldCo, LLC ("SNR HoldCo"), the parent company of SNR Wireless LicenseCo, LLC ("SNR Wireless," and collectively with SNR HoldCo, the "SNR Entities"), respectively. On October 27, 2015, the FCC granted certain AWS-3 wireless spectrum licenses (the "AWS-3 Licenses") to Northstar Wireless and to SNR Wireless, respectively, which are recorded in "FCC authorizations" on our Consolidated Balance Sheets. Under the applicable accounting guidance in Accounting Standards Codification 810, Consolidation ("ASC 810"), Northstar Spectrum and SNR HoldCo are considered variable

interest entities and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 for further information.

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. There can be no assurance that we will be able to obtain a profitable return on our non-controlling investments in the Northstar Entities and the SNR Entities.

See Note 14 for further information.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

2. Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

We consolidate all majority owned subsidiaries, investments in entities in which we have controlling influence and variable interest entities where we have been determined to be the primary beneficiary. Minority interests are recorded as noncontrolling interests or redeemable noncontrolling interests. See below for further information. Non-consolidated investments are accounted for using the equity method when we have the ability to significantly influence the operating decisions of the investee. When we do not have the ability to significantly influence the operating decisions of an investee, these equity securities are classified as either marketable investment securities or other investments and recorded at fair value with changes recognized in "Other, net" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive Income (Loss). All significant intercompany accounts and transactions have been eliminated in consolidation. Certain prior period amounts have been reclassified to conform to the current period presentation.

On February 28, 2017, we and EchoStar and certain of our respective subsidiaries completed the transactions contemplated by the Share Exchange Agreement (the "Share Exchange Agreement") that was previously entered into on January 31, 2017 (the "Share Exchange"). Pursuant to the Share Exchange Agreement, among other things, EchoStar transferred to us certain assets and liabilities of the EchoStar technologies and EchoStar broadcasting businesses, consisting primarily of the businesses that design, develop and distribute digital set-top boxes, provide satellite uplink services and develop and support streaming video technology, as well as certain investments in joint ventures, spectrum licenses, real estate properties and EchoStar's ten percent non-voting interest in Sling TV Holding L.L.C. (the "Transferred Businesses"), and in exchange, we transferred to EchoStar the 6,290,499 shares of preferred tracking stock issued by EchoStar (the "EchoStar Tracking Stock") and 81.128 shares of preferred tracking stock issued by Hughes Satellite Systems Corporation, a subsidiary of EchoStar (the "HSSC Tracking Stock," and together with the EchoStar Tracking Stock, collectively, the "Tracking Stock"), that tracked the residential retail satellite broadband business of Hughes Network Systems, L.L.C. ("HNS"), a wholly-owned subsidiary of Hughes. In connection with the Share Exchange, we and EchoStar and certain of their subsidiaries entered into certain agreements covering, among other things, tax matters, employee matters, intellectual property matters and the provision of transitional services. See Note 18 for further information.

As the Share Exchange was a transaction between entities that are under common control, accounting rules require that our Consolidated Financial Statements include the results of the Transferred Businesses for all periods presented, including periods prior to the completion of the Share Exchange. We initially recorded the Transferred Businesses at EchoStar's historical cost basis. The difference between the historical cost basis of the Transferred Businesses and the

net carrying value of the Tracking Stock was recorded in “Additional paid-in capital” on our Consolidated Balance Sheets.

The results of the Transferred Businesses were prepared from separate records maintained by EchoStar for the periods prior to March 1, 2017, and may not necessarily be indicative of the conditions that would have existed, or the results of operations, if the Transferred Businesses had been operated on a combined basis with our subsidiaries. Our financial statements include the results of the Transferred Businesses as described above for all periods presented, including periods prior to the completion of the Share Exchange.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Redeemable Noncontrolling Interests

Northstar Wireless. Northstar Wireless is a wholly-owned subsidiary of Northstar Spectrum, which is an entity owned by Northstar Manager, LLC ("Northstar Manager") and us. Under the applicable accounting guidance in ASC 810, Northstar Spectrum is considered a variable interest entity and, based on the characteristics of the structure of this entity and in accordance with the applicable accounting guidance, we consolidate Northstar Spectrum into our financial statements. The Northstar Operative Agreements, as amended, provide for, among other things, that after the fifth and sixth anniversaries of the grant of the AWS-3 Licenses to Northstar Wireless (and in certain circumstances, prior to the fifth anniversary of the grant of the AWS-3 Licenses to Northstar Wireless), Northstar Manager has the ability, but not the obligation, to require Northstar Spectrum to purchase Northstar Manager's ownership interests in Northstar Spectrum (the "Northstar Put Right") for a purchase price that generally equals its equity contribution to Northstar Spectrum plus a fixed annual rate of return. In the event that the Northstar Put Right is exercised by Northstar Manager, the consummation of the sale will be subject to FCC approval. Northstar Spectrum does not have a call right with respect to Northstar Manager's ownership interests in Northstar Spectrum. Although Northstar Manager is the sole manager of Northstar Spectrum, Northstar Manager's ownership interest is considered temporary equity under the applicable accounting guidance and is thus recorded as part of "Redeemable noncontrolling interests" in the mezzanine section of our Consolidated Balance Sheets. Northstar Manager's ownership interest in Northstar Spectrum was initially accounted for at fair value. Subsequently, Northstar Manager's ownership interest in Northstar Spectrum is increased by the fixed annual rate of return through "Redeemable noncontrolling interests" on our Consolidated Balance Sheets, with the offset recorded in "Net income (loss) attributable to noncontrolling interests, net of tax" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The operating results of Northstar Spectrum attributable to Northstar Manager are recorded as "Redeemable noncontrolling interests" on our Consolidated Balance Sheets, with the offset recorded in "Net income (loss) attributable to noncontrolling interests, net of tax" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 14 for further information.

SNR Wireless. SNR Wireless is a wholly-owned subsidiary of SNR HoldCo, which is an entity owned by SNR Wireless Management, LLC ("SNR Management") and us. Under the applicable accounting guidance in ASC 810, SNR HoldCo is considered a variable interest entity and, based on the characteristics of the structure of this entity and in accordance with the applicable accounting guidance, we consolidate SNR HoldCo into our financial statements. The SNR Operative Agreements, as amended, provide for, among other things, that after the fifth and sixth anniversaries of the grant of the AWS-3 Licenses to SNR Wireless (and in certain circumstances, prior to the fifth anniversary of the grant of the AWS-3 Licenses to SNR Wireless), SNR Management has the ability, but not the obligation, to require SNR HoldCo to purchase SNR Management's ownership interests in SNR HoldCo (the "SNR Put Right") for a purchase price that generally equals its equity contribution to SNR HoldCo plus a fixed annual rate of return. In the event that the SNR Put Right is exercised by SNR Management, the consummation of the sale will be subject to FCC approval. SNR HoldCo does not have a call right with respect to SNR Management's ownership interests in SNR

HoldCo. Although SNR Management is the sole manager of SNR HoldCo, SNR Management's ownership interest is considered temporary equity under the applicable accounting guidance and is thus recorded as part of "Redeemable noncontrolling interests" in the mezzanine section of our Consolidated Balance Sheets. SNR Management's ownership interest in SNR HoldCo was initially accounted for at fair value. Subsequently, SNR Management's ownership interest in SNR HoldCo is increased by the fixed annual rate of return through "Redeemable noncontrolling interests" on our Consolidated Balance Sheets, with the offset recorded in "Net income (loss) attributable to noncontrolling interests, net of tax" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The operating results of SNR HoldCo attributable to SNR Management are recorded as "Redeemable noncontrolling interests" on our Consolidated Balance Sheets, with the offset recorded in "Net income (loss) attributable to noncontrolling interests, net of tax" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 14 for further information.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("GAAP") requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expense for each reporting period. Estimates are used in accounting for, among other things, allowances for doubtful accounts, self-insurance obligations, deferred taxes and related valuation allowances, uncertain tax positions, loss contingencies, fair value of financial instruments, fair value of options granted under our stock-based compensation plans, fair value of assets and liabilities acquired in business combinations, relative standalone selling prices of performance obligations, capital leases, asset impairments, estimates of future cash flows used to evaluate impairments, useful lives of property, equipment and intangible assets, independent third-party retailer incentives, programming expenses and subscriber lives. Economic conditions may increase the inherent uncertainty in the estimates and assumptions indicated above. Actual results may differ from previously estimated amounts, and such differences may be material to our consolidated financial statements. Estimates and assumptions are reviewed periodically, and the effects of revisions are reflected prospectively in the period they occur.

Cash and Cash Equivalents

We consider all liquid investments purchased with a remaining maturity of 90 days or less at the date of acquisition to be cash equivalents. Cash equivalents as of December 31, 2018 and 2017 may consist of money market funds, government bonds, corporate notes and commercial paper. The cost of these investments approximates their fair value.

Marketable Investment Securities

Historically, we classified all marketable investment securities as available-for-sale, except for investments which were accounted for as trading securities and adjusted the carrying amount of our available-for-sale securities to fair value and reported the related temporary unrealized gains and losses as a separate component of "Accumulated other comprehensive income (loss)" within "Total stockholders' equity (deficit)," net of related deferred income tax on our Consolidated Balance Sheets. Our trading securities were carried at fair value, with changes in fair value recognized in "Other, net" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive

Income (Loss).

Subsequent to the adoption of ASU 2016-01 during the first quarter 2018, all equity securities are carried at fair value, with changes in fair value recognized in “Other, net” within “Other Income (Expense)” on our Consolidated Statements of Operations and Comprehensive Income (Loss). All debt securities are classified as available-for-sale. We adjust the carrying amount of our debt securities to fair value and report the related temporary unrealized gains and losses as a separate component of “Accumulated other comprehensive income (loss)” within “Total stockholders’ equity (deficit),” net of related deferred income tax on our Consolidated Balance Sheets. Declines in the fair value of a marketable debt security which are determined to be “other-than-temporary” are recognized on our Consolidated Statements of Operations and Comprehensive Income (Loss), thus establishing a new cost basis for such investment.

We evaluate our debt investments portfolio on a quarterly basis to determine whether declines in the fair value of these securities are other-than-temporary. This quarterly evaluation consists of reviewing, among other things:

- the fair value of our debt investments compared to the carrying amount,
- the historical volatility of the price of each security, and
- any market and company specific factors related to each security.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Declines in the fair value of debt investments below cost basis are generally accounted for as follows:

Length of Time Investment Has Been In a Continuous Loss Position	Treatment of the Decline in Value (absent specific factors to the contrary)
Less than six months	Generally, considered temporary.
Six to nine months	Evaluated on a case by case basis to determine whether any company or market-specific factors exist indicating that such decline is other-than-temporary.
Greater than nine months	Generally, considered other-than-temporary. The decline in value is recorded as a charge to earnings.

Additionally, in situations where the fair value of a debt security is below its carrying amount, we consider the decline to be other-than-temporary and record a charge to earnings if any of the following factors apply:

- we have the intent to sell the security,
- it is more likely than not that we will be required to sell the security before maturity or recovery, or
- we do not expect to recover the security's entire amortized cost basis, even if there is no intent to sell the security.

In general, we use the first in, first out method to determine the cost basis on sales of marketable investment securities.

Trade Accounts Receivable

Management estimates the amount of required allowances for the potential non-collectability of accounts receivable based upon past collection experience and consideration of other relevant factors. However, past experience may not be indicative of future collections and therefore additional charges could be incurred in the future to reflect differences between estimated and actual collections.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost is determined using the first-in, first-out method. The cost of manufactured inventory includes the cost of materials, labor, freight-in, royalties and manufacturing overhead. Net realizable value is calculated as the estimated selling price less reasonable costs necessary to complete, sell, transport and dispose of the inventory.

Property and Equipment

Property and equipment are stated at amortized cost less impairment losses, if any. Our set-top boxes are generally capitalized when they are installed in customers' homes. The costs of satellites under construction, including interest and certain amounts prepaid under our satellite service agreements, are capitalized during the construction phase, assuming the eventual successful launch and in-orbit operation of the satellite. If a satellite were to fail during launch or while in-orbit, the resultant loss would be charged to expense in the period such loss was incurred. The amount of any such loss would be reduced to the extent of insurance proceeds estimated to be received, if any. Depreciation is recorded on a straight-line basis over useful lives ranging from two to 40 years. Repair and maintenance costs are charged to expense when incurred. Renewals and improvements that add value or extend the asset's useful life are capitalized. 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.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Impairment of Long-Lived Assets

We review our long-lived assets and identifiable finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. For assets which are held and used in operations, the asset would be impaired if the carrying amount of the asset (or asset group) exceeded its undiscounted future net cash flows. Once an impairment is determined, the actual impairment recognized is the difference between the carrying amount and the fair value as estimated using one of the following approaches: income, cost and/or market. Assets which are to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell. The carrying amount of a long-lived asset or asset group is considered impaired when the anticipated undiscounted cash flows from such asset or asset group is less than its carrying amount. In that event, a loss is recorded in “Impairment of long-lived assets” on our Consolidated Statements of Operations and Comprehensive Income (Loss) based on the amount by which the carrying amount exceeds the fair value of the long-lived asset or asset group. Fair value, using the income approach, is determined primarily using a discounted cash flow model that uses the estimated cash flows associated with the asset or asset group under review, discounted at a rate commensurate with the risk involved. Fair value, utilizing the cost approach, is determined based on the replacement cost of the asset reduced for, among other things, depreciation and obsolescence. Fair value, utilizing the market approach, benchmarks the fair value against the carrying amount. See Note 8 for further information.

DBS Satellites. We currently evaluate our DBS satellite fleet for impairment as one asset group whenever events or changes in circumstances indicate that its carrying amount may not be recoverable. We do not believe any triggering event has occurred which would indicate impairment as of December 31, 2018.

AWS-4 Satellites. We currently evaluate our AWS-4 satellite fleet for impairment whenever events or changes in circumstances indicate that its carrying amount may not be recoverable. We do not believe any triggering event has occurred which would indicate impairment as of December 31, 2018. For the year ended December 31, 2017, we wrote down the net book value of the T1 satellite to its estimated fair value as of December 31, 2017 and recorded a $146 million impairment charge in “Impairment of long-lived assets” on our Consolidated Statements of Operations and Comprehensive Income (Loss). We did not believe any triggering event occurred which would indicate impairment as of December 31, 2016. See Note 8 for further information.

Indefinite-Lived Intangible Assets and Goodwill

We do not amortize indefinite-lived intangible assets and goodwill but test these assets for impairment annually, during the fourth quarter or more often if indicators of impairment arise. We have the option to first perform a qualitative assessment to determine whether it is necessary to perform a quantitative impairment test. However, we may elect to bypass the qualitative assessment in any period and proceed directly to performing the quantitative impairment test. Intangible assets that have finite lives are amortized over their estimated useful lives and tested for impairment as described above for long-lived assets. Our intangible assets with indefinite lives primarily consist of FCC licenses. Generally, we have determined that our DBS licenses have indefinite useful lives due to the following:

- FCC licenses are a non-depleting asset;
- existing FCC licenses are integral to our business segments and will contribute to cash flows indefinitely;
- replacement DBS satellite applications are generally authorized by the FCC subject to certain conditions, without substantial cost under a stable regulatory, legislative and legal environment;
- maintenance expenditures to obtain future cash flows are not significant;
- FCC licenses are not technologically dependent; and
- we intend to use these assets indefinitely.

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DBS Licenses. We combine all of our indefinite-lived DBS licenses that we currently utilize or plan to utilize in the future into a single unit of accounting. For 2018, 2017 and 2016, management performed a qualitative assessment to determine whether it is more likely than not that the fair value of the DBS licenses exceeds its carrying amount. In our assessment, we considered several qualitative factors, including, among others, overall financial performance, industry and market considerations, and relevant company specific events. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of the DBS licenses exceeds its carrying amount. As such, no further analysis was required.

Wireless Spectrum Licenses. We currently combine our 600 MHz, 700 MHz, AWS-4 and H Block wireless spectrum licenses and the Northstar Licenses and SNR Licenses into a single unit of accounting. These wireless spectrum licenses were assessed quantitatively in 2018. Our quantitative assessment consisted of both an income approach and a market approach. The income approach estimated the fair value of these licenses using the “Greenfield” approach. The Greenfield approach values the licenses by calculating the cash flow generating potential of a hypothetical start-up company that goes into business with no assets except the licenses to be valued. A discounted cash flow analysis is used to estimate what a marketplace participant would be willing to pay to purchase the aggregated wireless licenses as of the valuation date. The market approach uses prior transactions including auctions to estimate the fair value of the licenses. In conducting this quantitative assessment, we determined that the fair value of these licenses exceeds the carrying amount of these licenses under both approaches.

In 2017, management performed a qualitative assessment to determine whether it is more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. In our assessment, we considered several qualitative factors, including, among others, macroeconomic conditions, industry and market conditions, relevant company specific events, and perception of the market. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. As such, no further analysis was required.

During 2016, our AWS-4 and H Block wireless spectrum licenses and the Northstar Licenses and SNR Licenses were combined into a single unit of accounting. For 2016, management performed a qualitative assessment to determine whether it was more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. In our assessment, we considered several qualitative factors, including, among others, macroeconomic conditions, industry and market conditions, relevant company specific events, and perception of the market. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeded the carrying amount of these licenses. As such, no further analysis was required.

During 2016, our 700 MHz wireless spectrum licenses were assessed as a single unit of accounting. For 2016, management performed a qualitative assessment to determine whether it was more likely than not that the fair value of the 700 MHz wireless spectrum licenses exceeded its carrying amount. In our assessment, we considered several qualitative factors, including, among others, macroeconomic conditions, industry and market conditions, relevant company specific events, and perception of the market. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeded its carrying amount. As such, no further analysis was required.

During 2018, 2017, and 2016, our multichannel video distribution and data service ("MVDDS") wireless spectrum licenses were assessed as a single unit of accounting. For 2018, 2017, and 2016, management assessed these licenses quantitatively. Our quantitative assessment in each year for the MVDDS wireless spectrum licenses consisted of a market approach. The market approach uses prior transactions including auctions to estimate the fair value of the licenses. In conducting these quantitative assessments, we determined that the fair value of our MVDDS wireless spectrum licenses exceeded their carrying amount.

Changes in circumstances or market conditions could result in a write-down of any of the above wireless spectrum licenses in the future.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Capitalized Interest

We capitalize interest associated with the acquisition or construction of certain assets, including, among other things, our wireless spectrum licenses, build-out costs associated with our network deployment and satellites. Capitalization of interest begins when, among other things, steps are taken to prepare the asset for its intended use and ceases when the asset is ready for its intended use or when these activities are substantially suspended.

We are currently preparing for the commercialization of our AWS-4, H Block, 700 MHz, 600 MHz and MVDDS wireless spectrum licenses, and interest expense related to their carrying amount is being capitalized. In addition, the FCC has granted certain AWS-3 Licenses to Northstar Wireless and to SNR Wireless, respectively, in which we have made certain non-controlling investments. Northstar Wireless and SNR Wireless are preparing for the commercialization of their AWS-3 Licenses and interest expense related to their carrying amount is also being capitalized. On June 14, 2017, the FCC issued an order granting our application to acquire the 600 MHz Licenses, and we began preparing for the commercialization of our 600 MHz Licenses and began capitalizing interest related to these licenses on June 14, 2017. As the carrying amount of the licenses discussed above exceeded the carrying value of our long-term debt beginning on June 14, 2017, materially all of our interest expense is now being capitalized.

Business Combinations

When we acquire a business, we allocate the purchase price to the various components of the acquisition based upon the fair value of each component using various valuation techniques, including the market approach, income approach and/or cost approach. The accounting standard for business combinations requires most identifiable assets, liabilities, noncontrolling interests and goodwill acquired to be recorded at fair value. Transaction costs related to the acquisition of the business are expensed as incurred. Costs associated with the issuance of debt associated with a business combination are capitalized and included as a yield adjustment to the underlying debt's stated rate. Acquired intangible assets other than goodwill are amortized over their estimated useful lives unless the lives are determined to be indefinite. Amortization of these intangible assets are recorded on a straight-line basis over an average finite useful life primarily ranging from approximately one to 20 years or in relation to the estimated discounted cash flows over the life of the intangible asset.

Long-Term Deferred Revenue and Other Long-Term Liabilities

Certain programmers provide us up-front payments. Such amounts are deferred and recognized as reductions to "Subscriber-related expenses" on a straight-line basis over the relevant remaining contract term (generally up to ten years). The current and long-term portions of these deferred credits are recorded on our Consolidated Balance Sheets in "Deferred revenue and other" and "Long-term deferred revenue and other long-term liabilities," respectively.

Sales Taxes

We account for sales taxes imposed on our goods and services on a net basis on our Consolidated Statements of Operations and Comprehensive Income (Loss). Since we primarily act as an agent for the governmental authorities, the amount charged to the customer is collected and remitted directly to the appropriate jurisdictional entity.

Income Taxes

We establish a provision for income taxes currently payable or receivable and for income tax amounts deferred to future periods. Deferred tax assets and liabilities are recorded for the estimated future tax effects of differences that exist between the book and tax basis of assets and liabilities. Deferred tax assets are offset by valuation allowances when we believe it is more likely than not that such net deferred tax assets will not be realized.

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DISH NETWORK CORPORATION

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From time to time, we engage in transactions where the tax consequences may be subject to uncertainty. We record a liability when, in management's judgment, a tax filing position does not meet the more likely than not threshold. For tax positions that meet the more likely than not threshold, we may record a liability depending on management's assessment of how the tax position will ultimately be settled. We adjust our estimates periodically for ongoing examinations by and settlements with various taxing authorities, as well as changes in tax laws, regulations and precedent. We classify interest and penalties, if any, associated with our uncertain tax positions as a component of "Interest expense, net of amounts capitalized" and "Other, net," respectively, on our Consolidated Statements of Operations and Comprehensive Income (Loss).

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 apply 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 derivative financial instruments indexed to marketable investment securities; and

- Level 3, defined as unobservable inputs for which little or no market data exists, consistent with reasonably available assumptions made by other participants therefore requiring assumptions based on the best information available.

As of December 31, 2018 and 2017, the carrying amount for cash and cash equivalents, trade accounts receivable (net of allowance for doubtful accounts) and current liabilities (excluding the "Current portion of long-term debt and capital lease obligations") was equal to or approximated fair value due to their short-term nature or proximity to current market rates. See Note 6 for the fair value of our marketable investment securities and derivative financial instruments.

Fair values for our publicly traded debt securities are based on quoted market prices, when available. The fair values of private debt are based on, among other things, available trade information, and/or an analysis in which we evaluate market conditions, related securities, various public and private offerings, and other publicly available information. In performing this analysis, we make various assumptions regarding, among other things, credit spreads, and the impact of these factors on the value of the debt securities. See Note 9 for the fair value of our long-term debt.

Deferred Debt Issuance Costs and Debt Discounts

In accordance with accounting guidance on embedded conversion features, we value and bifurcate the conversion option associated with convertible notes from the host debt instrument. The resulting debt discount is deferred and amortized to interest expense using the effective interest rate method over the terms of the respective notes.

Costs of issuing debt are generally deferred and amortized to interest expense using the effective interest rate method over the terms of the respective notes.

See Note 9 for further information.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Revenue Recognition

Our revenue is primarily derived from Pay-TV programming services that we provide to our subscribers. We also generate revenue from equipment rental fees and other hardware related fees, including DVRs and fees from subscribers with multiple receivers; advertising services; fees earned from our Smart Home service operations; broadband services; warranty services; and sales of digital receivers and related equipment to third-party pay-TV providers. See Note 15 for further information, including revenue disaggregated by major source.

Our residential video subscribers contract for individual services or combinations of services, as discussed above, the majority of which are generally distinct and are accounted for as separate performance obligations. We consider our installations for first time DISH TV subscribers to be a service. However, since we provide a significant integration service combining the installation with programming services, we have concluded that the installation is not distinct from programming and thus the installation and programming services are accounted for as a single performance obligation. We generally satisfy these performance obligations and recognize revenue as the services are provided, for example as the programming is broadcast to subscribers, as this best represents the transfer of control of the services to the subscriber.

In cases where a subscriber is charged certain nonrefundable upfront fees, those fees are generally considered to be material rights to the subscriber related to the subscriber's option to renew without having to pay an additional fee upon renewal. These fees are deferred and recognized over the estimated period of time during which the fee remains material to the customer, which we estimate to be less than one year. Revenues arising from our in-home service operations that are separate from the initial installation, such as mounting a TV on a subscriber's wall, are generally recognized when these services are performed.

For our residential video subscribers, we have concluded that the contract term under Accounting Standard Codification Topic 606 ("ASC 606") is one month and as a result the revenue recognized for these subscribers for a given month is equal to the amount billed in that month, except for certain nonrefundable upfront fees that are accounted for as material rights, as discussed above.

Revenues from our advertising services are typically recognized as the advertisements are broadcast. Sales of equipment to subscribers or other third parties are recognized when control is transferred under the contract. Revenue from our commercial video subscribers typically follows the residential model described above, with the exception that the contract term for most of our commercial subscribers exceeds one month and can be multiple years in

length. However, commercial subscribers typically do not receive time-limited discounts or free service periods and accordingly, while they may have multiple performance obligations, revenue is equal to the amount billed in a given month.

Contract Balances

The timing of revenue recognition generally differs from the timing of invoicing to customers. When revenue is recognized prior to invoicing, we record a receivable. When revenue is recognized subsequent to invoicing, we record deferred revenue. Our residential video subscribers are typically billed monthly, and the contract balances for those customers arise from the timing of the monthly billing cycle. We do not adjust the amount of consideration for financing impacts as we apply a practical expedient when we anticipate that the period between transfer of goods and services and eventual payment for those goods and services will be less than one year. See Note 16 for further information, including balance and activity detail about our allowance for doubtful accounts and deferred revenue related to contracts with subscribers.

Assets Recognized Related to the Costs to Obtain a Contract with a Subscriber

We recognize an asset for the incremental costs of obtaining a contract with a subscriber if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs, including those with our independent third-party retailers, meet the requirements to be capitalized, and payments made under these programs are capitalized and amortized to expense over the estimated subscriber life.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

During the year ended December 31, 2018, we capitalized $183 million under these programs. The amortization expense related to these programs was $28 million for the year ended December 31, 2018. As of December 31, 2018, we had a total of $169 million capitalized on our Consolidated Balance Sheets, of which $14 million related to open contracts as of January 1, 2018. These amounts are capitalized in “Other currents assets” and “Other noncurrent assets, net” on our Consolidated Balance Sheets, and then amortized in “Other subscriber acquisition costs” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Impact of Adoption of ASU 2014-09

On May 28, 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update 2014-09 Revenue from Contracts with Customers (“ASU 2014-09”) and modified the standard thereafter. We adopted ASU 2014-09, as modified, and now codified as ASC 606 and Accounting Standard Codification Topic 340-40 (“ASC 340-40”) on January 1, 2018, using the modified retrospective method. Under that method, we applied the new guidance to all open contracts existing as of January 1, 2018, recognizing in beginning retained earnings an adjustment for the cumulative effect of the change, which was $2 million, net of deferred taxes of $1 million.

In addition, we are providing additional disclosures comparing the results under previous guidance to those as follows:

Consolidated Statements of Operations	DISH Network (as would have been reported under previous standards) (In thousands)	Impact of adopting ASU 2014-09	DISH Network (as currently reported)
For the Year Ended December 31, 2018			
Subscriber-related revenue	$ 13,473,177	$ (17,089)	$ 13,456,088
Subscriber-related expenses	$ 8,557,738	$ (13,161)	$ 8,544,577
Total subscriber acquisition costs	$ 927,547	$ (158,240)	$ 769,307
Operating income (loss)	$ 1,993,309	$ 154,312	$ 2,147,621
Income (loss) before income taxes	$ 2,034,863	$ 154,312	$ 2,189,175
Income tax (provision) benefit, net	$ (495,558)	$ (38,126)	$ (533,684)
Net income (loss) attributable to DISH Network	$ 1,458,905	$ 116,186	$ 1,575,091
Diluted net income (loss) per share attributable to DISH Network	$ 2.77	$ 0.23	$ 3.00

Consolidated Balance Sheets	DISH Network (as would have been reported under previous standards) (In thousands)	Impact of adopting ASU 2014-09	DISH Network (as currently reported)
As of December 31, 2018			
Inventory	$ 261,196	$ 29,537	$ 290,733
Other current assets	$ 240,471	$ 49,329	$ 289,800
Other noncurrent assets, net	$ 326,496	$ 119,581	$ 446,077
Total assets	$ 30,388,565	$ 198,447	$ 30,587,012
Deferred revenue and other	$ 616,943	$ 38,369	$ 655,312
Deferred tax liabilities	$ 2,435,988	$ 38,919	$ 2,474,907
Long-term deferred revenue and other long-term liabilities	$ 468,279	$ 2,653	$ 470,932
Total liabilities	$ 21,452,814	$ 79,941	$ 21,532,755
Total stockholders' equity (deficit)	$ 8,475,683	$ 118,506	$ 8,594,189
Total liabilities and stockholders' equity (deficit)	$ 30,388,565	$ 198,447	$ 30,587,012

The adoption of ASU 2014-09 had no impact to cash flows from operating, investing and financing activities on our Consolidated Statements of Cash Flows.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Subscriber-Related Expenses

The cost of television programming distribution rights is generally incurred on a per subscriber basis and various upfront carriage payments are recognized when the related programming is distributed to subscribers. Long-term flat rate programming contracts are generally charged to expense using the straight-line method over the term of the agreement. The cost of television programming rights to distribute live sporting events for a season or tournament is charged to expense using the straight-line method over the course of the season or tournament.

“Subscriber-related expenses” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally include programming expenses, costs for Pay-TV and broadband services incurred in connection with our Smart Home service and call center operations, billing costs, refurbishment and repair costs related to DBS receiver systems and broadband equipment, subscriber retention, other variable subscriber expenses and monthly wholesale fees paid to broadband providers. These costs are recognized as the services are performed or as incurred. The cost of broadband services is expensed monthly and generally incurred on a per subscriber basis.

Cost of Sales – Equipment and Other

Costs include the cost of non-subsidized sales of DBS accessories and the cost of sales of digital receivers and related components to third-party pay-TV providers, both of which include freight and royalties. Costs are generally recognized as products are delivered to customers and the related revenue is recognized.

Subscriber Acquisition Costs

Subscriber acquisition costs on our Consolidated Statements of Operations and Comprehensive Income (Loss) consist of costs incurred to acquire new Pay-TV and broadband subscribers through independent third-party retailers, third-party marketing agreements and our direct sales distribution channel. Subscriber acquisition costs include the following line items from our Consolidated Statements of Operations and Comprehensive Income (Loss):

- “Cost of sales – subscriber promotion subsidies” includes the cost of our DBS receiver systems sold to independent third-party retailers and other distributors of our equipment and DBS receiver systems sold directly by us to DISH TV subscribers.

- "Other subscriber acquisition costs" includes net costs related to promotional incentives and costs related to installation and other promotional subsidies for our DISH TV services as well as our direct sales efforts and commissions for our Sling TV services.

- "Subscriber acquisition advertising" includes advertising and marketing expenses related to the acquisition of new Pay-TV and broadband subscribers. Advertising costs are expensed as incurred.

We characterize amounts paid to our independent third-party retailers as consideration for equipment installation services and for equipment buydowns (incentives and rebates) as a reduction of revenue. We expense payments for equipment installation services as "Other subscriber acquisition costs." Our payments for equipment buydowns represent a partial or complete return of the independent third-party retailer's purchase price and are, therefore, netted against the proceeds received from the independent third-party retailer. We report the net cost from our various sales promotions through our independent third-party retailer network as a component of "Other subscriber acquisition costs."

Research and Development

Research and development costs are expensed as incurred. Research and development costs totaled $24 million, $33 million and $41 million for the years ended December 31, 2018, 2017 and 2016, respectively.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Derivative Financial Instruments

We may purchase and hold derivative financial instruments for, among other reasons, strategic or speculative purposes. We record all derivative financial instruments on our Consolidated Balance Sheets at fair value as either assets or liabilities. Changes in the fair values of derivative financial instruments are recognized in our results of operations and included in "Other, net" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive Income (Loss). We have not designated any derivative financial instrument for hedge accounting.

As of December 31, 2018, 2017 and 2016, we did not hold any derivative financial instruments. See Note 6 for further information.

Equipment Lease Programs

DISH TV subscribers have the choice of leasing or purchasing the satellite receiver and other equipment necessary to receive our DISH TV services. Most of our new DISH TV subscribers choose to lease equipment and thus we retain title to such equipment. New broadband subscribers lease the modem and other equipment necessary to receive broadband services. Equipment leased to new and existing DISH TV and broadband subscribers is capitalized and depreciated over their estimated useful lives.

New Accounting Pronouncements

Leases. In February 2016, the FASB issued ASU 2016-02 Leases ("ASU 2016-02"), and has modified the standard thereafter. ASU 2016-02 amends the existing accounting standards for lease accounting, including requiring that lessees recognize right of use assets and lease liabilities for the vast majority of leases. For income statement purposes, the FASB retained a dual model, requiring leases to be classified as either operating or finance. Classification is based on criteria that are largely similar to those applied in current lease accounting, but without explicit bright lines. The accounting guidance for lessors remains largely unchanged.

This standard became effective for us on January 1, 2019, and we elected to adopt the standard using the modified retrospective approach. Under the modified retrospective approach, we will recognize in beginning retained earnings as of January 1, 2019 an adjustment for the cumulative effect of the adoption, which we believe will be immaterial. We will also recognize right of use assets and lease liabilities for periods ending after January 1, 2019 for the majority of our operating leases, which will be the primary impact of the standard on our results. Our operating leases consist principally of satellites, real estate, vehicles used in our in-home service operations and other equipment.

As permitted under the standard, we do not intend to recognize right of use assets or lease liabilities for leases with a term of 12 months or less. In transition, we plan to apply practical expedients that permit us not to reassess (i) whether expired or existing contracts contain a lease under the new standard, (ii) the lease classification for expired or existing leases, or (iii) whether previously-capitalized initial direct costs would qualify for capitalization under the new standard. In addition, we do not intend to use hindsight during transition. We do not expect the adoption of ASU 2016-02 to have a significant impact to our Consolidated Statements of Operations or Cash Flows. We will provide additional disclosures for periods ending in 2019 comparing the results under previous guidance to those under the new standard.

Financial Instruments – Credit Losses. On June 16, 2016, the FASB issued ASU 2016-13 Financial Instruments – Credit Losses, Measurement of Credit Losses on Financial Instruments (“ASU 2016-13”), which changes the way entities measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net earnings. This standard will be effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted. We are evaluating the impact the adoption of ASU 2016-13 will have on our Consolidated Financial Statements and related disclosures.

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Fair Value Measurement. On August 28, 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement ("ASU 2018-13"), which modifies the disclosure requirements on fair value measurements by adding, modifying or removing certain disclosures. This standard will be effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early adoption is permitted. Certain disclosures in ASU 2018-13 are required to be applied on a retrospective basis and others on a prospective basis. We are evaluating the impact the adoption of ASU 2018-13 will have on our Consolidated Financial Statements and related disclosures.

3. Basic and Diluted Net Income (Loss) Per Share

We present both basic earnings per share ("EPS") and diluted EPS. Basic EPS excludes potential dilution and is computed by dividing "Net income (loss) attributable to DISH Network" by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if stock awards were exercised and if our 3 3/8% Convertible Notes due 2026 issued August 8, 2016 (the "Convertible Notes due 2026") and our 2 3/8% Convertible Notes due 2024 issued March 17, 2017 (the "Convertible Notes due 2024," and collectively with the Convertible Notes due 2026, the "Convertible Notes") were converted. The potential dilution from stock awards is accounted for using the treasury stock method based on the average market value of our Class A common stock. The potential dilution from conversion of the Convertible Notes is accounted for using the if-converted method, which requires that all of the shares of our Class A common stock issuable upon conversion of the Convertible Notes will be included in the calculation of diluted EPS assuming conversion of the Convertible Notes at the beginning of the reporting period (or at time of issuance, if later).

The following table presents EPS amounts for all periods and the basic and diluted weighted-average shares outstanding used in the calculation.

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands, except per share amounts)		
Net income (loss)	$ 1,655,491	$ 2,165,407	$ 1,550,785
	80,400	66,718	52,846

Less: Net income (loss) attributable to noncontrolling interests, net of tax			
Net income (loss) attributable to DISH Network - Basic	1,575,091	2,098,689	1,497,939
Interest on dilutive Convertible Notes, net of tax (1)	—	30,028	27,515
Net income (loss) attributable to DISH Network - Diluted	$ 1,575,091	$ 2,128,717	$ 1,525,454
Weighted-average common shares outstanding - Class A and B common stock:			
Basic	467,350	466,021	464,807
Dilutive impact of Convertible Notes	58,192	55,692	18,361
Dilutive impact of stock awards outstanding	290	883	994
Diluted	525,832	522,596	484,162
Earnings per share - Class A and B common stock:			
Basic net income (loss) per share attributable to DISH Network	$ 3.37	$ 4.50	$ 3.22
Diluted net income (loss) per share attributable to DISH Network	$ 3.00	$ 4.07	$ 3.15

(1) For the year ended December 31, 2018, materially all of our interest expense was capitalized. See Note 2 for further information.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Certain stock awards to acquire our Class A common stock are not included in the weighted-average common shares outstanding above, as their effect is anti-dilutive. In addition, vesting of performance based options and rights to acquire shares of our Class A common stock granted pursuant to our performance based stock incentive plans ("Restricted Performance Units") are both contingent upon meeting certain goals, some of which are not yet probable of being achieved. Furthermore, the warrants that we issued to certain option counterparties in connection with the Convertible Notes due 2026 are only exercisable at their expiration if the market price per share of our Class A common stock is greater than the strike price of the warrants, which is approximately $86.08 per share, subject to adjustments. As a consequence, the following are not included in the diluted EPS calculation.

	As of December 31,		
	2018	2017	2016
	(In thousands)		
Anti-dilutive stock awards	4,377	1,694	1,870
Performance based options (1)	8,970	5,491	4,312
Restricted Performance Units/Awards	1,726	2,436	1,336
Common stock warrants	46,029	46,029	46,029
Total	61,102	55,650	53,547

(1) The increase in performance based options as of December 31, 2018 primarily resulted from the issuance of stock option awards as of October 1, 2018 under a long-term, performance-based stock incentive plan adopted on August 17, 2018 (the "2019 LTIP").

4. Supplemental Data - Statements of Cash Flows

The following table presents our supplemental cash flow and other non-cash data.

	For the Years Ended December 31,		
	2018	2017	2016

	(In thousands)		
Cash paid for interest (including capitalized interest)	$ 921,238	$ 996,183	$ 775,300
Cash received for interest	15,037	6,925	15,020
Cash paid for income taxes	31,308	40,362	439,570
Capitalized interest (1)	1,012,177	1,015,901	844,330
Initial equity component of the 2 3/8% Convertible Notes due 2024, net of deferred taxes of $92,512 (2)	—	159,869	—
Initial equity component of the 3 3/8% Convertible Notes due 2026, net of deferred taxes of $286,322 (2)	—	—	487,521
Employee benefits paid in Class A common stock	27,322	23,164	25,146
Assets financed under capital lease obligations	142	1,573	7,850
Vendor financing	—	—	20,000

(1) See Note 2 for further information.
(2) See Note 9 for further information.

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5. Other Comprehensive Income (Loss)

The following table presents the tax effect on each component of "Other comprehensive income (loss)."

	For the Years Ended December 31,								
	2018			2017			2016		
	Before Tax Amount	Tax (Expense) Benefit	Net of Tax Amount	Before Tax Amount	Tax (Expense) Benefit	Net of Tax Amount	Before Tax Amount	Tax (Expense) Benefit (1)	Net of Tax Amount
	(In thousands)								
ign currency slation stments	$ (1,343)	$ —	$ (1,343)	$ 1,027	$ —	$ 1,027	$ —	$ —	$ —
ealized ing gains ses) on lable-for-sale rities	(529)	122	(407)	9,671	(3,525)	6,146	3,050	(1,111)	1,939
ognition of iously alized (gains) es on lable-for-sale rities uded in net me (loss)	(8)	2	(6)	(11,129)	4,057	(7,072)	(99,312)	36,173	(63,13
er prehensive me (loss)	$ (1,880)	$ 124	$ (1,756)	$ (431)	$ 532	$ 101	$ (96,262)	$ 35,062	$ (61,20

The "Accumulated other comprehensive income (loss)" is detailed in the following table, net of tax:

	Foreign Currency Translation	Unrealized/ Recognized Gains

Accumulated Other Comprehensive Income (Loss)	Adjustment	(Losses)	Total
	(In thousands)		
Balance as of December 31, 2016	$ —	$ 781	$ 781
Foreign currency translation adjustments	1,027	—	1,027
Other comprehensive income (loss) before reclassification	—	6,146	6,146
Amounts reclassified from accumulated other comprehensive income (loss)	—	(7,072)	(7,072)
Balance as of December 31, 2017	$ 1,027	$ (145)	$ 882
Foreign currency translation adjustments	(1,343)	—	(1,343)
Other comprehensive income (loss) before reclassification	—	(407)	(407)
Amounts reclassified from accumulated other comprehensive income (loss)	—	(6)	(6)
Balance as of December 31, 2018	$ (316)	$ (558)	$ (874)

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6. Marketable Investment Securities, Restricted Cash and Cash Equivalents, and Other Investment Securities

Our marketable investment securities, restricted cash and cash equivalents, and other investment securities consisted of the following:

	As of December 31,	
	2018	2017
	(In thousands)	
Marketable investment securities:		
Current marketable investment securities:		
Strategic - available-for-sale	$ 193	$ 195
Strategic - trading/equity (Note 2)	2,370	93,367
Other	1,178,908	407,603
Total current marketable investment securities	1,181,471	501,165
Restricted marketable investment securities (1)	67,019	72,014
Total marketable investment securities	1,248,490	573,179
Restricted cash and cash equivalents (1)	578	393
Other investment securities:		
Other investment securities	118,992	113,460
Total other investment securities	118,992	113,460
Total marketable investment securities, restricted cash and cash equivalents, and other investment securities	$ 1,368,060	$ 687,032

(1) Restricted marketable investment securities and restricted cash and cash equivalents are included in “Restricted cash, cash equivalents and marketable investment securities” on our Consolidated Balance Sheets.

Marketable Investment Securities

Our marketable investment securities portfolio consists of various debt and equity instruments. All debt securities are classified as available-for-sale. Subsequent to the adoption of ASU 2016-01 during the first quarter 2018, all equity securities are carried at fair value, with changes in fair value recognized in “Other, net” within “Other Income (Expense)” on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 2 for further

information.

Current Marketable Investment Securities - Strategic

Our current strategic marketable investment securities portfolio includes and may include strategic and financial debt and equity investments in private and public companies that are highly speculative and have experienced and continue to experience volatility. As of December 30, 2018, this portfolio consisted of securities of a small number of issuers, and as a result the value of that portfolio depends, among other things, on the performance of those issuers. The fair value of certain of the debt and equity securities in this portfolio can be adversely impacted by, among other things, the issuers' respective performance and ability to obtain any necessary additional financing on acceptable terms, or at all.

Current Marketable Investment Securities - Other

Our current other marketable investment securities portfolio includes investments in various debt instruments including, among others, commercial paper, corporate securities and United States treasury and/or agency securities.

Commercial paper consists mainly of unsecured short-term, promissory notes issued primarily by corporations with maturities ranging up to 365 days. Corporate securities consist of debt instruments issued by corporations with various maturities normally less than 18 months. U. S. Treasury and agency securities consist of debt instruments issued by the federal government and other government agencies.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Restricted Cash, Cash Equivalents and Marketable Investment Securities

As of December 31, 2018 and 2017, our restricted marketable investment securities, together with our restricted cash and cash equivalents, included amounts required as collateral for our letters of credit.

Other Investment Securities

We have strategic investments in certain debt and/or equity securities that are included in noncurrent "Other investment securities" on our Condensed Consolidated Balance Sheets. Our debt securities are classified as available-for-sale and our equity securities are accounted for using the equity method of accounting or recorded at fair value. Certain of our equity method investments are detailed below.

NagraStar L.L.C. As a result of the completion of the Share Exchange on February 28, 2017, we own a 50% interest in NagraStar L.L.C. ("NagraStar"), a joint venture that is our primary provider of encryption and related security systems intended to assure that only authorized customers have access to our programming.

Invidi Technologies Corporation. In November 2016, we, DIRECTV, LLC, a wholly-owned indirect subsidiary of AT&T Inc., and Cavendish Square Holding B.V., an affiliate of WPP plc, entered into a series of agreements to acquire Invidi Technologies Corporation ("Invidi"), an entity that provides proprietary software for the addressable advertising market. The transaction closed in January 2017.

Our ability to realize value from our strategic investments in securities that are not publicly traded depends on the success of the issuers' businesses and their ability to obtain sufficient capital, on acceptable terms or at all, and 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 desire to sell them we will not be able to obtain fair value for them.

Unrealized Gains (Losses) on Marketable Investment Securities

As of December 31, 2018 and 2017, we had accumulated net unrealized losses of $1 million and less than $1 million, respectively. These amounts, net of related tax effect, were accumulated net unrealized losses of $1 million and less than $1 million, respectively. All of these amounts are included in "Accumulated other comprehensive income (loss)" within "Total stockholders' equity (deficit)." The components of our available-for-sale investments are summarized in the table below.

	As of December 31,							
	2018				2017			
	Marketable Investment Securities	Unrealized Gains	Losses	Net	Marketable Investment Securities	Unrealized Gains	Losses	Net
	(In thousands)							
Debt securities (including restricted):								
U.S. Treasury and agency securities	$ 66,823	$ 40	$ (19)	$ 21	$ 84,286	$ 22	$ (141)	$ (119)
Commercial paper	367,488	—	—	—	107,962	—	(10)	(10)
Corporate securities	805,259	91	(899)	(808)	282,256	—	(124)	(124)
Other	6,550	56	(2)	54	5,308	58	(1)	57
Total	$ 1,246,120	$ 187	$ (920)	$ (733)	$ 479,812	$ 80	$ (276)	$ (196)

As of December 31, 2018, restricted and non-restricted marketable investment securities included debt securities of $1.040 billion with contractual maturities within one year and $206 million with contractual maturities extending longer than one year through and including five years. Actual maturities may differ from contractual maturities as a result of our ability to sell these securities prior to maturity.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Marketable Investment Securities in a Loss Position

The following table reflects the length of time that the individual debt securities, accounted for as available-for-sale, have been in an unrealized loss position, aggregated by investment category. As of December 31, 2018, the unrealized losses related to our investments in debt securities primarily represented investments in United States treasury and agency securities, corporate securities and other. We have the ability to hold and do not intend to sell our investments in these debt securities before they recover or mature, and it is more likely than not that we will hold these investments until that time. In addition, we are not aware of any specific factors indicating that the underlying issuers of these debt securities would not be able to pay interest as it becomes due or repay the principal at maturity. Therefore, we believe that these changes in the estimated fair values of these marketable investment securities are related to temporary market fluctuations.

	As of December 31,			
	2018		2017	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
	(In thousands)			
Debt securities:				
Less than 12 months	$ 647,241	$ (918)	$ 410,145	$ (156)
12 months or more	137	(2)	34,340	(120)
Total	$ 647,378	$ (920)	$ 444,485	$ (276)

Fair Value Measurements

Our investments measured at fair value on a recurring basis were as follows:

As of December 31,							
2018				2017			
Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
(In thousands)							
$ 859,220	$ 30,858	$ 828,362	$ —	$ 1,425,798	$ 655	$ 1,425,143	$ —

Cash equivalents (including restricted)								
Debt securities (including restricted):								
U.S. Treasury and agency securities	$ 66,823	$ 66,823	$ —	$ —	$ 84,286	$ 84,286	$ —	$ —
Commercial paper	367,488	—	367,488	—	107,962	—	107,962	—
Corporate securities	805,259	—	805,259	—	282,256	—	282,256	—
Other	6,550	—	6,357	193	5,308	—	5,113	195
Equity securities	2,370	2,370	—	—	93,367	93,367	—	—
Total	$ 1,248,490	$ 69,193	$ 1,179,104	$ 193	$ 573,179	$ 177,653	$ 395,331	$ 195

As of December 31, 2018 and 2017, our Level 3 investments consisted predominately of corporate securities and other. On a quarterly basis we evaluate the reasonableness of significant unobservable inputs used in those measurements. For our Level 3 investments, we evaluate, among other things, the terms of the underlying instruments, the credit ratings of the issuers, current market conditions, and other relevant factors. Based on these factors, we assess the risk of realizing expected cash flows and we apply an observable discount rate that reflects this risk. We may also reduce our valuations to reflect a liquidity discount based on the lack of an active market for these securities.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Changes in Level 3 instruments were as follows:

	Level 3 Investment Securities
	(In thousands)
Balance as of December 31, 2016	$ 6,721
Net realized and unrealized gains (losses) included in earnings	(10,488)
Net realized and unrealized gains (losses) included in other comprehensive income (loss)	9,199
Purchases	—
Sales	(5,099)
Settlements	(138)
Issuances	—
Transfers into or out of Level 3	—
Balance as of December 31, 2017	$ 195
Net realized and unrealized gains (losses) included in earnings	—
Net realized and unrealized gains (losses) included in other comprehensive income (loss)	4
Purchases	—
Sales	—
Settlements	(6)
Issuances	—
Transfers into or out of Level 3	—
Balance as of December 31, 2018	$ 193

During the years ended December 31, 2018 and 2017, we had no transfers in or out of Level 1 and Level 2 fair value measurements.

Gains and Losses on Sales and Changes in Carrying Amounts of Investments

“Other, net” within “Other Income (Expense)” included on our Consolidated Statements of Operations and Comprehensive Income (Loss) is as follows:

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Other, net:	$ 8,165	$ 90,979	$ 116,550

Marketable investment securities - realized and unrealized gains (losses) (1)			
Derivative financial instruments - net realized and/or unrealized gains (losses)	—	—	5,405
Marketable investment securities - other-than-temporary impairments	—	—	(2,863)
Non-marketable investment securities - gains (losses) on sales/exchanges	—	10,488	—
Costs related to early redemption of debt	(3,261)	(1,470)	—
Gain (loss) on sale of subsidiary	7,004	—	—
Equity in earnings of affiliates	(2,110)	2,163	2,508
Other	2,003	2,328	(2,285)
Total	$ 11,801	$ 104,488	$ 119,315

(1) During the year ended December 31, 2018, we recorded unrealized losses of $2 million related to equity securities held as of December 31, 2018.

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7. Inventory

Inventory consisted of the following:

	As of December 31,	
	2018	2017
	(In thousands)	
Finished goods	$ 215,186	$ 248,233
Work-in-process and service repairs	56,871	54,455
Raw materials	18,676	18,320
Total inventory	$ 290,733	$ 321,008

8. Property and Equipment and Intangible Assets

Property and Equipment

Property and equipment consisted of the following:

	Depreciable Life (In Years)	As of December 31,	
		2018	2017
		(In thousands)	
Equipment leased to customers	2 - 5	$ 2,016,965	$ 2,323,100
EchoStar XV	15	277,658	277,658
EchoStar XVIII	15	411,255	411,255
D1	N/A	55,000	55,000
T1	14.25	100,000	100,000
Satellites acquired under capital lease agreements	10 - 15	499,819	499,819
Furniture, fixtures, equipment and other	2 - 10	1,923,585	1,779,109

Buildings and improvements	4 - 40	290,650	293,571
Land	—	13,186	14,057
Construction in progress	—	100,560	103,176
Total property and equipment		5,688,678	5,856,745
Accumulated depreciation		(3,760,498)	(3,673,084)
Property and equipment, net		$ 1,928,180	$ 2,183,661

Depreciation and amortization expense consisted of the following:

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Equipment leased to customers	$ 444,928	$ 554,272	$ 674,445
Satellites	100,343	114,821	96,965
Buildings, furniture, fixtures, equipment and other	166,753	148,471	149,792
Total depreciation and amortization	$ 712,024	$ 817,564	$ 921,202

Cost of sales and operating expense categories included in our accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) do not include depreciation expense related to satellites or equipment leased to customers.

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Satellites

Pay-TV Satellites. We currently utilize 11 satellites in geostationary orbit approximately 22,300 miles above the equator, two of which we own and depreciate over their estimated useful life. We currently utilize certain capacity on seven satellites that we lease from EchoStar, which are accounted for as operating leases. We also lease two satellites from third parties, which are accounted for as capital leases and are depreciated over the shorter of the economic life or the term of the satellite agreement.

As of December 31, 2018, our pay-TV satellite fleet consisted of the following:

Satellites	Launch Date	Degree Orbital Location	Estimated Useful Life (Years)/Lease Termination Date
Owned:			
EchoStar XV	July 2010	61.5	15
EchoStar XVIII	June 2016	61.5	15
Leased from EchoStar (1):			
EchoStar IX	August 2003	121	Month to month
EchoStar X (2)	February 2006	110	February 2021
EchoStar XI (2)	July 2008	110	September 2021
EchoStar XIV (2)	March 2010	119	February 2023
EchoStar XVI (3)	November 2012	61.5	January 2023
Nimiq 5	September 2009	72.7	September 2019
QuetzSat-1	September 2011	77	November 2021
Leased from Other Third Party:			
Anik F3	April 2007	118.7	April 2022
Ciel II (4)	December 2008	129	January 2020

(1) See Note 18 for further information on our Related Party Transactions with EchoStar.
(2)

We generally have the option to renew each lease on a year-to-year basis through the end of the useful life of the respective satellite.

(3) We have the option to renew this lease for an additional five-year period.

(4) During the fourth quarter 2018, we renewed this lease.

AWS-4 Satellites. On March 2, 2012, the FCC approved the transfer of 40 MHz of wireless spectrum licenses held by DBSD North America, Inc. ("DBSD North America") and TerreStar Networks, Inc. ("TerreStar") to us. On March 9, 2012, we completed the acquisitions of 100% of the equity of reorganized DBSD North America and substantially all of the assets of TerreStar, pursuant to which we acquired, among other things, certain satellite assets and 40 MHz of spectrum licenses held by DBSD North America (the "DBSD Transaction") and TerreStar (the "TerreStar Transaction"), which licenses the FCC modified in March 2013 to add AWS-4 authority ("AWS-4"). See Note 14 for further information. As a result of the DBSD Transaction and the TerreStar Transaction, we acquired three AWS-4 satellites, including two in-orbit satellites (D1 and T1) and one satellite under construction (T2). During the fourth quarter 2014, EchoStar purchased our rights to the T2 satellite for $55 million.

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Satellites Owned:	Launch Date	Degree Orbital Location	Estimated Useful Life (Years)
T1	July 2009	111.1	14.25
D1	April 2008	92.85	N/A

GAAP requires that a long-lived asset be reviewed for impairment when circumstances indicate that the carrying amount of the asset might not be recoverable. As of December 31, 2018 and 2017, it was determined that the T1 satellite met this criteria and therefore in the fourth quarter 2018 and 2017, we tested the T1 satellite for impairment.

As of December 31, 2018, we concluded that the T1 satellite's estimated fair value exceeded its carrying amount and no impairment was necessary. As of December 31, 2017, we concluded that the carrying amount of the T1 satellite exceeded its estimated fair value based on undiscounted cash flows utilizing the income approach. To arrive at fair value, management estimated the potential future discounted cash flows from a market participant's perspective associated with the satellite. As a result of this assessment, we wrote down the net book value of the T1 satellite from $246 million to $100 million and recorded an impairment charge of $146 million in "Impairment of long-lived assets" on our Consolidated Statements of Operations and Comprehensive Income (Loss) for the year ended December 31, 2017. As of December 31, 2018 and 2017, we do not believe that any triggering events have occurred which would indicate impairment for the D1 satellite. The estimates used in our fair value analysis are considered Level 3 in the fair value hierarchy.

Satellite Anomalies

Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming that we offer. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited.

In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite. Such a failure could result in a prolonged loss of critical programming or a significant delay in our plans to expand programming as necessary to remain competitive and thus may have a material adverse effect on our business,

financial condition and results of operations.

In the past, certain of our owned and leased satellites have experienced anomalies, some of which have had a significant adverse impact on their remaining useful life and/or commercial operation. There can be no assurance that future anomalies will not impact the remaining useful life and/or commercial operation of any of the owned and leased satellites in our fleet. See Note 2 “Impairment of Long-Lived Assets” for further information on evaluation of impairment. There can be no assurance that we can recover critical transmission capacity in the event one or more of our owned or leased in-orbit satellites were to fail. We generally do not carry commercial launch or in-orbit insurance on any of the satellites that we use, other than certain satellites leased from third parties, and therefore, we will bear the risk associated with any uninsured launch or in-orbit satellite failures.

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Intangible Assets

As of December 31, 2018 and 2017, our identifiable intangibles subject to amortization consisted of the following:

	As of December 31, 2018		December 31, 2017	
	Intangible Assets	Accumulated Amortization	Intangible Assets	Accumulated Amortization
	(In thousands)			
Technology-based	$ 63,077	$ (53,998)	$ 63,077	$ (48,416)
Trademarks	37,010	(28,634)	37,010	(24,517)
Contract-based	13,149	(13,149)	13,149	(13,149)
Customer relationships	26,533	(26,533)	26,533	(26,533)
Total	$ 139,769	$ (122,314)	$ 139,769	$ (112,615)

These identifiable intangibles are included in “Other noncurrent assets, net” on our Consolidated Balance Sheets. Amortization of these intangible assets is recorded on a straight-line basis over an average finite useful life primarily ranging from approximately five to 20 years. Amortization was $10 million, $8 million and $10 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Estimated future amortization of our identifiable intangible assets as of December 31, 2018 is as follows (in thousands):

For the Years Ended December 31,	
2019	$ 7,402
2020	3,816
2021	1,288
2022	666
2023	654
Thereafter	3,629
Total	$ 17,455

Goodwill

The excess of our investments in consolidated subsidiaries over net tangible and identifiable intangible asset value at the time of the investment is recorded as goodwill and is not subject to amortization but is subject to impairment testing annually or whenever indicators of impairment arise. As of December 31, 2018 and 2017, our goodwill was $126 million, which primarily relates to our wireless segment. In conducting our annual impairment test for 2018, we performed a qualitative assessment, which considered several factors, including, among others, macroeconomic conditions, industry and market conditions, and relevant company specific events and perception of the market. In contemplating all factors in their totality, we determined that the fair value of our wireless segment, which consists of a single reporting unit, was in excess of the carrying amount.

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FCC Authorizations

As of December 31, 2018 and 2017, our FCC Authorizations consisted of the following:

	As of December 31,	
	2018	2017
	(In thousands)	
DBS Licenses	$ 611,794	$ 611,794
700 MHz Licenses	711,871	711,871
MVDDS Licenses	24,000	24,000
AWS-4 Licenses	1,949,000	1,949,000
H Block Licenses	1,671,506	1,671,506
AWS-3 Licenses	9,890,389	9,890,389
600 MHz Licenses	6,211,154	6,211,154
Capitalized Interest (1)	3,667,247	2,656,075
Total	$ 24,736,961	$ 23,725,789

(1) See Note 2 for further information.

9. Long-Term Debt and Capital Lease Obligations

Fair Value of our Long-Term Debt

The following table summarizes the carrying amount and fair value of our debt facilities as of December 31, 2018 and 2017:

	As of December 31,			
	2018		2017	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	(In thousands)			
4 1/4% Senior Notes due 2018 (1)	$ —	$ —	$ 1,025,861	$ 1,031,596
7 7/8% Senior Notes due 2019 (2)	1,317,372	1,343,298	1,400,000	1,501,206
5 1/8% Senior Notes due 2020	1,100,000	1,089,957	1,100,000	1,127,588
6 3/4% Senior Notes due 2021	2,000,000	1,974,940	2,000,000	2,120,480
5 7/8% Senior Notes due 2022	2,000,000	1,833,140	2,000,000	2,014,140
5% Senior Notes due 2023	1,500,000	1,247,445	1,500,000	1,432,335
5 7/8% Senior Notes due 2024	2,000,000	1,611,960	2,000,000	1,952,220
2 3/8% Convertible Notes due 2024	1,000,000	801,200	1,000,000	962,860
7 3/4% Senior Notes due 2026	2,000,000	1,653,720	2,000,000	2,118,400
3 3/8% Convertible Notes due 2026	3,000,000	2,436,690	3,000,000	3,262,290
Other notes payable	39,715	39,715	44,928	44,928
Subtotal	15,957,087	$ 14,032,065	17,070,789	$ 17,568,043
Unamortized debt discount on the Convertible Notes	(833,906)		(925,360)	
Unamortized deferred financing costs and other debt discounts, net	(37,388)		(46,782)	
Capital lease obligations (3)	66,984		104,318	
Total long-term debt and capital lease obligations (including current portion)	$ 15,152,777		$ 16,202,965	

(1) On April 2, 2018, we redeemed the principal balance of our 4 1/4% Senior Notes due 2018.

(2) During 2018, we repurchased $82 million of our 7 7/8% Senior Notes due 2019 in open market trades. The remaining balance of $1.318 billion matures on September 1, 2019 and is included in “Current portion of long-term debt and capital lease obligations” on our Consolidated Balance Sheets as of December 31, 2018.

(3) Disclosure regarding fair value of capital leases is not required.

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We estimated the fair value of our publicly traded long-term debt using market prices in less active markets (Level 2).

Our Senior Notes are:

- general unsecured senior obligations of DISH DBS Corporation ("DISH DBS");
- ranked equally in right of payment with all of DISH DBS' and the guarantors' existing and future unsecured senior debt; and
- ranked effectively junior to our and the guarantors' current and future secured senior indebtedness up to the value of the collateral securing such indebtedness.

The indentures related to our Senior Notes contain restrictive covenants that, among other things, impose limitations on the ability of DISH DBS and its restricted subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on DISH DBS' capital stock or repurchase DISH DBS' 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; and
- transfer or sell assets.

In the event of a change of control, as defined in the related indentures, we would be required to make an offer to repurchase all or any part of a holder's Senior Notes at a purchase price equal to 101% of the aggregate principal amount thereof, together with accrued and unpaid interest thereon, to the date of repurchase.

7 7/8% Senior Notes due 2019

On August 17, 2009 and October 5, 2009, we issued $1.0 billion and $400 million, respectively, aggregate principal amount of our ten-year 7 7/8% Senior Notes due September 1, 2019. During 2018, we repurchased $82 million of our ten-year 7 7/8% Senior Notes due September 1, 2019 in open market trades. The remaining balance of $1.318 billion

matures on September 1, 2019. Interest accrues at an annual rate of 7 7/8% and is payable semi-annually in cash, in arrears on March 1 and September 1 of each year.

The 7 7/8% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

5 1/8% Senior Notes due 2020

On April 5, 2013, we issued $1.1 billion aggregate principal amount of our seven-year 5 1/8% Senior Notes due May 1, 2020. Interest accrues at an annual rate of 5 1/8% and is payable semi-annually in cash, in arrears on May 1 and November 1 of each year.

The 5 1/8% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

6 3/4% Senior Notes due 2021

On May 5, 2011, we issued $2.0 billion aggregate principal amount of our ten-year 6 3/4% Senior Notes due June 1, 2021. Interest accrues at an annual rate of 6 3/4% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year.

The 6 3/4% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

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5 7/8% Senior Notes due 2022

On May 16, 2012 and July 26, 2012, we issued $1.0 billion and $1.0 billion, respectively, aggregate principal amount of our ten-year 5 7/8% Senior Notes due July 15, 2022. Interest accrues at an annual rate of 5 7/8% and is payable semi-annually in cash, in arrears on January 15 and July 15 of each year.

The 5 7/8% Senior Notes due 2022 are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

5% Senior Notes due 2023

On December 27, 2012, we issued $1.5 billion aggregate principal amount of our 5% Senior Notes due March 15, 2023. Interest accrues at an annual rate of 5% and is payable semi-annually in cash, in arrears on March 15 and September 15 of each year.

The 5% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

5 7/8% Senior Notes due 2024

On November 20, 2014, we issued $2.0 billion aggregate principal amount of our ten-year 5 7/8% Senior Notes due November 15, 2024. Interest accrues at an annual rate of 5 7/8% and is payable semi-annually in cash, in arrears on May 15 and November 15 of each year.

The 5 7/8% Senior Notes due 2024 are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

7 3/4% Senior Notes due 2026

On June 13, 2016, we issued $2.0 billion aggregate principal amount of our ten-year 7 3/4% Senior Notes due July 1, 2026. Interest accrues at an annual rate of 7 3/4% and is payable semi-annually in cash, in arrears on January 1 and July 1 of each year.

The 7 3/4% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest. Prior to July 1, 2019, we may also redeem up to 35% of the 7 3/4% Senior Notes at a specified premium with the net cash proceeds from certain equity offerings or capital contributions.

2 3/8% Convertible Notes due 2024

On March 17, 2017, we issued $1.0 billion aggregate principal amount of the Convertible Notes due March 15, 2024 in a private placement. Interest accrues at an annual rate of 2 3/8% and is payable semi-annually in cash, in arrears on March 15 and September 15 of each year.

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The Convertible Notes due 2024 are:

- our general unsecured obligations;
- ranked senior in right of payment to any future indebtedness that is expressly subordinated in right of payment to the Convertible Notes due 2024;
- ranked equally in right of payment with all of our existing and future unsecured senior indebtedness;
- ranked effectively junior to any of our existing and future secured indebtedness to the extent of the value of the assets securing such indebtedness;
- ranked structurally junior to all indebtedness and other liabilities of our subsidiaries; and
- not guaranteed by our subsidiaries.

We may not redeem the Convertible Notes due 2024 prior to the maturity date. If a "fundamental change" (as defined in the related indenture) occurs prior to the maturity date of the Convertible Notes due 2024, holders may require us to repurchase for cash all or part of their Convertible Notes due 2024 at a repurchase price equal to 100% of the principal amount of such Convertible Notes due 2024, plus accrued and unpaid interest to, but not including, the fundamental change repurchase date.

The indenture related to the Convertible Notes due 2024 does not contain any financial covenants and does not restrict us from paying dividends, issuing or repurchasing our other securities, issuing new debt (including secured debt) or repaying or repurchasing our debt.

Subject to the terms of the related indenture, the Convertible Notes due 2024 may be converted at an initial conversion rate of 12.1630 shares of our Class A common stock per $1,000 principal amount of Convertible Notes due 2024 (equivalent to an initial conversion price of approximately $82.22 per share of our Class A common stock) (the "Initial Conversion Rate"), at any time on or after October 15, 2023 through the second scheduled trading day preceding the maturity date. Holders of the Convertible Notes due 2024 will also have the right to convert the Convertible Notes due 2024 at the Initial Conversion Rate prior to October 15, 2023, but only upon the occurrence of specified events described in the related indenture. The conversion rate is subject to anti-dilution adjustments if certain events occur.

In accordance with accounting guidance on embedded conversion features, we valued and bifurcated the conversion option associated with the Convertible Notes due 2024 (the "equity component") from the host debt instrument. The $252 million initial value of the equity component on the Convertible Notes due 2024 was recorded in "Additional

paid-in capital" within "Stockholders' equity (deficit)" on our Consolidated Balance Sheets with the offset being recorded as the debt discount. The resulting debt discount on the Convertible Notes due 2024 is being amortized to interest expense at an effective interest rate of 7% over the seven-year term of the Convertible Notes due 2024. This interest expense was recorded in "Interest expense, net of amounts capitalized" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

3 3/8% Convertible Notes due 2026

On August 8, 2016, we issued $3.0 billion aggregate principal amount of the Convertible Notes due August 15, 2026 in a private unregistered offering. Interest accrues at an annual rate of 3 3/8% and is payable semi-annually in cash, in arrears on February 15 and August 15 of each year.

The Convertible Notes due 2026 are:

- our general unsecured obligations;
- ranked senior in right of payment to any future indebtedness that is expressly subordinated in right of payment to the Convertible Notes due 2026;
- ranked equally in right of payment with all of our existing and future unsecured senior indebtedness;
- ranked effectively junior to any of our existing and future secured indebtedness to the extent of the value of the assets securing such indebtedness;

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- ranked structurally junior to all indebtedness and other liabilities of our subsidiaries; and
- not guaranteed by our subsidiaries.

We may not redeem the Convertible Notes due 2026 prior to the maturity date. If a "fundamental change" (as defined in the related indenture) occurs prior to the maturity date of the Convertible Notes due 2026, holders may require us to repurchase for cash all or part of their Convertible Notes due 2026 at a specified make-whole price equal to 100% of the principal amount of such Convertible Notes due 2026, plus accrued and unpaid interest to, but not including, the fundamental change repurchase date.

The indenture related to the Convertible Notes due 2026 does not contain any financial covenants and does not restrict us from paying dividends, issuing or repurchasing our other securities, issuing new debt (including secured debt) or repaying or repurchasing our debt.

Subject to the terms of the related indenture, the Convertible Notes due 2026 may be converted at an initial conversion rate of 15.3429 shares of our Class A common stock per $1,000 principal amount of Convertible Notes due 2026 (equivalent to an initial conversion price of approximately $65.18 per share of our Class A common stock) (the "Initial Conversion Rate"), at any time on or after March 15, 2026 through the second scheduled trading day preceding the maturity date. Holders of the Convertible Notes due 2026 will also have the right to convert the Convertible Notes due 2026 at the Initial Conversion Rate prior to March 15, 2026, but only upon the occurrence of specified events described in the related indenture. The conversion rate is subject to anti-dilution adjustments if certain events occur.

In accordance with accounting guidance on embedded conversion features, we valued and bifurcated the conversion option associated with the Convertible Notes due 2026 (the "equity component") from the host debt instrument. The $774 million initial value of the equity component on the Convertible Notes due 2026 was recorded in "Additional paid-in capital" within "Stockholders' equity (deficit)" on our Consolidated Balance Sheets with the offset being recorded as the debt discount. The resulting debt discount on the Convertible Notes due 2026 is being amortized to interest expense at an effective interest rate of 7% over the ten-year term of the Convertible Notes due 2026. This interest expense was recorded in "Interest expense, net of amounts capitalized" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Convertible Note Hedge and Warrant Transactions

In connection with the offering of the Convertible Notes due 2026, we entered into convertible note hedge transactions with certain option counterparties. The convertible note hedge transactions cover, subject to anti-dilution adjustments substantially similar to those applicable to the Convertible Notes due 2026, the number of shares of our Class A common stock underlying the Convertible Notes due 2026, which initially gives us the option to purchase approximately 46 million shares of our Class A common stock at a price of approximately $65.18 per share. The total cost of the convertible note hedge transactions was $635 million. Concurrently with entering into the convertible note hedge transactions, we also entered into warrant transactions with each option counterparty whereby we sold to such option counterparty warrants to purchase, subject to customary anti-dilution adjustments, up to the same number of shares of our Class A common stock, which initially gives the option counterparties the option to purchase approximately 46 million shares of our Class A common stock at a price of approximately $86.08 per share. We received $376 million in cash proceeds from the sale of these warrants. For us, the economic effect of these transactions is to effectively raise the initial conversion price from approximately $65.18 per share of our Class A common stock to approximately $86.08 per share of our Class A common stock (thus effectively raising the conversion premium on the Convertible Notes due 2026 from approximately 32.5% to approximately 75%). In accordance with accounting guidance on hedge and warrant transactions, the net cost incurred in connection with the convertible note hedge and warrant transactions are recorded as a reduction in “Additional paid-in capital” within “Stockholders’ equity (deficit)” on our Consolidated Balance Sheets as of December 31, 2016.

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We will not be required to make any cash payments to each option counterparty or its affiliates upon the exercise of the options that are a part of the convertible note hedge transactions, but will be entitled to receive from them a number of shares of Class A common stock, an amount of cash or a combination thereof. This consideration is generally based on the amount by which the market price per share of Class A common stock, as measured under the terms of the convertible note hedge transactions, is greater than the strike price of the convertible note hedge transactions during the relevant valuation period under the convertible note hedge transactions. Additionally, if the market price per share of Class A common stock, as measured under the terms of the warrant transactions, exceeds the strike price of the warrants during the measurement period at the maturity of the warrants, we will owe each option counterparty a number of shares of Class A common stock in an amount based on the excess of such market price per share of Class A common stock over the strike price of the warrants. However, as specified under the terms of the warrant transactions, we may elect to settle the warrants in cash.

Interest on Long-Term Debt

	Semi-Annual Payment Dates	Annual Debt Service Requirements (In thousands)
7 7/8% Senior Notes due 2019	March 1 and September 1	$ 110,250
5 1/8% Senior Notes due 2020	May 1 and November 1	$ 56,375
6 3/4% Senior Notes due 2021	June 1 and December 1	$ 135,000
5 7/8% Senior Notes due 2022	January 15 and July 15	$ 117,500
5% Senior Notes due 2023	March 15 and September 15	$ 75,000
5 7/8 % Senior Notes due 2024	May 15 and November 15	$ 117,500
2 3/8% Convertible Notes due 2024	March 15 and September 15	$ 23,750
7 3/4 % Senior Notes due 2026	January 1 and July 1	$ 155,000
3 3/8 % Convertible Notes due 2026	February 15 and August 15	$ 101,250

Our ability to meet our debt service requirements will depend on, among other factors, the successful execution of our business strategy, which is subject to uncertainties and contingencies beyond our control.

Other Long-Term Debt and Capital Lease Obligations

Other long-term debt and capital lease obligations consisted of the following:

	As of December 31,	
	2018	2017
	(In thousands)	
Satellites and other capital lease obligations	$ 66,984	$ 104,318
Notes payable related to satellite vendor financing and other debt payable in installments through 2031 with interest rates ranging from approximately 1.9% to 8.8%	39,715	44,928
Total	106,699	149,246
Less: current portion	(24,621)	(42,663)
Other long-term debt and capital lease obligations, net of current portion	$ 82,078	$ 106,583

Capital Lease Obligations

Anik F3. Anik F3, an FSS satellite, was launched and commenced commercial operation in April 2007. This satellite is accounted for as a capital lease and depreciated over the term of the satellite service agreement. We have leased 100% of the Ku-band capacity on Anik F3 for a period of 15 years.

Ciel II. Ciel II, a Canadian DBS satellite, was launched in December 2008 and commenced commercial operation in February 2009. This satellite is accounted for as a capital lease and depreciated over the term of the satellite service agreement. We lease 100% of the capacity on Ciel II. The initial 10 year term expired in January 2019 and during the fourth quarter 2018, we renewed this lease through January 2020.

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As of December 31, 2018 and 2017, we had $500 million capitalized for the estimated fair value of satellites acquired under capital leases included in “Property and equipment, net,” with related accumulated depreciation of $449 million and $407 million, respectively. In our Consolidated Statements of Operations and Comprehensive Income (Loss), we recognized $42 million in depreciation expense on satellites acquired under capital lease agreements during each of the years ended December 31, 2018, 2017 and 2016.

Future minimum lease payments under the capital lease obligations, together with the present value of the net minimum lease payments as of December 31, 2018 are as follows (in thousands):

For the Years Ended December 31,	
2019	$ 50,751
2020	48,032
2021	48,032
2022	16,032
2023	—
Thereafter	—
Total minimum lease payments	162,847
Less: Amount representing lease of the orbital location and estimated executory costs (primarily insurance and maintenance) including profit thereon, included in total minimum lease payments	(87,248)
Net minimum lease payments	75,599
Less: Amount representing interest	(8,615)
Present value of net minimum lease payments	66,984
Less: Current portion	(19,923)
Long-term portion of capital lease obligations	$ 47,061

The summary of future maturities of our outstanding long-term debt as of December 31, 2018 is included in the commitments table in Note 14.

10. Income Taxes and Accounting for Uncertainty in Income Taxes

Income Taxes

Our income tax policy is to record the estimated future tax effects of temporary differences between the tax bases of assets and liabilities and amounts reported on our Consolidated Balance Sheets, as well as probable operating loss, tax credit and other carryforwards. Deferred tax assets are offset by valuation allowances when we believe it is more likely than not that net deferred tax assets will not be realized. We periodically evaluate our need for a valuation allowance. Determining necessary valuation allowances requires us to make assessments about historical financial information as well as the timing of future events, including the probability of expected future taxable income and available tax planning opportunities.

We file consolidated tax returns in the United States. The income taxes of domestic and foreign subsidiaries not included in the United States tax group are presented in our consolidated financial statements on a separate return basis for each tax paying entity.

As of December 31, 2018, we had no net operating loss carryforwards ("NOLs") for federal income tax purposes and $32 million of NOL carryforwards for state income tax purposes, which are partially offset by a valuation allowance. In addition, there are $71 million of tax benefits related to credit carryforwards which are partially offset by a valuation allowance. Portions of the NOL and credit carryforwards will expire in 2019.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act") was enacted making significant changes to the Internal Revenue Code. Such changes include, but are not limited to, a reduction in the corporate tax rate and certain limitations on corporate deductions (e.g., a limitation on the interest expense deduction available to companies).

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The Tax Reform Act, among other things, lowered the federal statutory corporate tax rate effective January 1, 2018 from 35% to 21%. Consequently, we remeasured our deferred tax assets and liabilities as of December 31, 2017 which positively impacted our "Income tax (provision) benefit, net" by approximately $1.2 billion.

The components of the (benefit from) provision for income taxes were as follows:

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Current (benefit) provision:			
Federal	$ 44,451	$ (71,141)	$ 317,010
State	29,918	38,058	31,160
Foreign	4,616	3,736	10,840
Total current (benefit) provision	78,985	(29,347)	359,010
Deferred (benefit) provision:			
Federal	383,096	(547,575)	469,927
State	64,000	69,076	35,418
Foreign	—	—	—
Increase (decrease) in valuation allowance	7,603	(7,474)	1,463
Total deferred (benefit) provision	454,699	(485,973)	506,808
Total (benefit) provision	$ 533,684	$ (515,320)	$ 865,818

Our $2.189 billion of "Income (loss) before income taxes" on our Consolidated Statements of Operations and Comprehensive Income (Loss) included income of $14 million related to our foreign operations.

The following table shows the principal reasons for the difference between the effective income tax rate and the statutory federal tax rate:

	For the Years Ended December 31,		
	2018	2017	2016
	% of pre-tax income/(loss)		

Statutory rate	21.0	35.0	35.0
State income taxes, net of federal benefit	4.6	3.0	2.5
Tax Reform Act (1)	—	(72.6)	—
Nondeductible/Nontaxable items (2)	—	5.9	—
Other, net	(1.2)	(2.5)	(1.7)
Total (benefit) provision for income taxes	24.4	(31.2)	35.8

(1) On December 22, 2017, the Tax Reform Act was enacted, which, among other things, lowered the federal statutory corporate tax rate effective for us in future periods from 35% to 21%. Consequently, we remeasured our deferred tax assets and liabilities as of December 31, 2017 which positively impacted our "Income tax (provision) benefit, net" by approximately $1.2 billion.

(2) During the year ended December 31, 2017, we recorded $255 million of "Litigation expense" related to the FTC Action on our Consolidated Statements of Operations and Comprehensive Income (Loss). Any eventual payments made with respect to the FTC Action may not be deductible for tax purposes, which had a negative impact on our effective tax rate for the year ended December 31, 2017. The tax deductibility of any eventual payments made with respect to the FTC Action may change, based upon, among other things, further developments in the FTC Action, including final adjudication of the FTC Action. See Note 14 for further information.

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Deferred taxes arise because of the differences in the book and tax bases of certain assets and liabilities. Significant components of deferred tax assets and liabilities were as follows:

	As of December 31,	
	2018	2017
	(In thousands)	
Deferred tax assets:		
NOL, interest, credit and other carryforwards	$ 114,227	$ 55,505
Accrued and prepaid expenses	—	41,439
Stock-based compensation	21,323	14,904
Unrealized (gains) losses on available for sale and other investments	4,918	5,001
Deferred revenue	18,361	15,236
Total deferred tax assets	158,829	132,085
Valuation allowance	(26,244)	(18,642)
Deferred tax asset after valuation allowance	132,585	113,443
Deferred tax liabilities:		
Depreciation	(443,128)	(496,873)
Accrued and prepaid expenses	(8,662)	—
FCC authorizations and other intangible amortization	(1,635,385)	(1,220,421)
Bases difference in partnerships and cost method investments (1)	(447,585)	(328,735)
Discount on convertible notes and convertible note hedge transaction, net	(72,732)	(81,346)
Other liabilities	—	(5,606)
Total deferred tax liabilities	(2,607,492)	(2,132,981)
Net deferred tax asset (liability)	$ (2,474,907)	$ (2,019,538)

(1) Included in this line item are deferred taxes related to, among other things, our non-controlling investments in Northstar Spectrum and SNR HoldCo, including deferred taxes created by the tax amortization of the Northstar Licenses and SNR Licenses.

Accounting for Uncertainty in Income Taxes

In addition to filing federal income tax returns, we and one or more of our subsidiaries file income tax returns in all states that impose an income tax and a small number of foreign jurisdictions where we have immaterial operations. We are subject to United States federal, state and local income tax examinations by tax authorities for the years beginning in 2008 due to the carryover of previously incurred NOLs. We are currently under a federal income tax examination for fiscal years 2008 through 2015.

A reconciliation of the beginning and ending amount of unrecognized tax benefits included in “Long-term deferred revenue and other long-term liabilities” on our Consolidated Balance Sheets was as follows:

	For the Years Ended December 31,		
Unrecognized tax benefit	2018	2017	2016
	(In thousands)		
Balance as of beginning of period	$ 393,916	$ 358,023	$ 336,586
Additions based on tax positions related to the current year	10,350	12,798	40,492
Additions based on tax positions related to prior years	1,670	30,596	21,797
Reductions based on tax positions related to prior years	(6,291)	(2,754)	(34,106)
Reductions based on tax positions related to settlements with taxing authorities	(8,328)	(1,634)	(3,628)
Reductions based on tax positions related to the lapse of the statute of limitations	(5,923)	(3,113)	(3,118)
Balance as of end of period	$ 385,394	$ 393,916	$ 358,023

We have $377 million in unrecognized tax benefits that, if recognized, could favorably affect our effective tax rate. We do not expect any material portion of this amount to be paid or settled within the next twelve months.

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Accrued interest and penalties on uncertain tax positions are recorded as a component of "Interest expense, net of amounts capitalized" and "Other, net," respectively, on our Consolidated Statements of Operations and Comprehensive Income (Loss). During the year ended December 31, 2018, 2017 and 2016, we recorded $13 million, $13 million and $11 million in net interest and penalty expense to earnings, respectively. Accrued interest and penalties were $53 million and $40 million at December 31, 2018 and 2017, respectively. The above table excludes these amounts.

11. Stockholders' Equity (Deficit)

Capital Stock and Additional Paid-In Capital

Our certificate of incorporation authorizes the following capital stock: (i) 1,600,000,000 shares of Class A common stock, par value $0.01 per share; (ii) 800,000,000 shares of Class B common stock, par value $0.01 per share; (iii) 800,000,000 shares of Class C common stock, par value $0.01 per share; and (iv) 20,000,000 shares of preferred stock, par value $0.01 per share. As of December 31, 2018 and 2017, there were no outstanding shares of Class C common stock or preferred stock.

The Class A, Class B and Class C common stock are equivalent except for voting rights. Holders of Class A and Class C common stock are entitled to one vote per share and holders of Class B common stock are entitled to 10 votes per share. Each share of Class B and Class C common stock is convertible, at the option of the holder, into one share of Class A common stock. Our Class A common stock is publicly traded on the Nasdaq Global Select Market under the symbol "DISH." Upon a change in control of DISH Network, each holder of outstanding shares of Class C common stock is entitled to 10 votes for each share of Class C common stock held. Our principal stockholder owns the majority of all outstanding Class B common stock. Together with all other stockholders, he also owns outstanding Class A common stock.

Common Stock Repurchase Program

Our Board of Directors previously authorized stock repurchases of up to $1.0 billion of our outstanding Class A common stock. On October 29, 2018, our Board of Directors extended this authorization such that we are currently authorized to repurchase up to $1.0 billion of our outstanding Class A common stock through and including December 31, 2019. As of December 31, 2018, we may repurchase up to $1.0 billion under this program. During the years

ended December 31, 2018, 2017 and 2016, there were no repurchases of our Class A common stock.

Treasury Stock

As of December 31, 2015, we held 56,118,260 shares of treasury stock. We account for our treasury stock using the cost method and all treasury share repurchases are reflected on our Consolidated Balance Sheets as a component of "Treasury stock, at cost." On February 11, 2016, our Board of Directors approved the retirement of our treasury stock. During 2016, we retired all 56,118,260 shares of our treasury stock.

12. Employee Benefit Plans

Employee Stock Purchase Plan

Our employees participate in the DISH Network employee stock purchase plan (the "ESPP"), in which we are authorized to issue up to 3.8 million shares of Class A common stock. At December 31, 2018, we had 0.8 million shares of Class A common stock which remain available for issuance under the ESPP. Substantially all full-time employees who have been employed by us 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, employees may not deduct an amount which would permit such employee to purchase our capital stock under all of our stock purchase plans at a rate which would exceed $25,000 in fair value of capital stock in any one year. The purchase price of the stock is 85% of the closing price of the Class A common stock on the last business day of each calendar quarter in which such shares of Class A common stock are deemed sold to an employee under the ESPP. During the years ended December 31, 2018, 2017 and 2016, employee purchases of Class A common stock through the ESPP totaled approximately 0.6 million, 0.3 million and 0.2 million shares, respectively.

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401(k) Employee Savings Plan

We sponsor a 401(k) Employee Savings Plan (the "401(k) Plan") for eligible employees. Voluntary employee contributions to the 401(k) Plan may be matched 50% by us, subject to a maximum annual contribution of $2,500 per employee. Forfeitures of unvested participant balances which are retained by the 401(k) Plan may be used to fund matching and discretionary contributions. Our Board of Directors may also authorize an annual discretionary contribution to the 401(k) plan, subject to the maximum deductible limit provided by the Internal Revenue Code of 1986, as amended. These contributions may be made in cash or in our stock.

The following table summarizes the expense associated with our matching contributions and discretionary contributions:

	For the Years Ended December 31,		
Expense Recognized Related to the 401(k) Plan	2018	2017	2016
	(In thousands)		
Matching contributions, net of forfeitures	$ 10,300	$ 7,070	$ 6,546
Discretionary stock contributions, net of forfeitures	$ 27,048	$ 27,969	$ 23,158

13. Stock-Based Compensation

Stock Incentive Plans

We maintain stock incentive plans to attract and retain officers, directors and key employees. Stock awards under these plans include both performance and non-performance based stock incentives. As of December 31, 2018, we had outstanding under these plans stock options to acquire 14.2 million shares of our Class A common stock and 1.8 million restricted stock units and awards. Stock options granted on or prior to December 31, 2018 were granted with exercise prices equal to or greater than the market value of our Class A common stock at the date of grant and with a maximum term of approximately ten years. While historically we have issued stock awards subject to vesting,

typically at the rate of 20% per year, some stock awards have been granted with immediate vesting and other stock awards vest only upon the achievement of certain company-specific subscriber, operational and/or financial goals. As of December 31, 2018, we had 60.1 million shares of our Class A common stock available for future grant under our stock incentive plans.

Exercise prices for stock options outstanding and exercisable as of December 31, 2018 were as follows:

	Options Outstanding			Options Exercisable		
	Number Outstanding as of December 31, 2018	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price	Number Exercisable as of December 31, 2018	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price
$ — - $ 10.00	18,800	0.25	$ 6.34	18,800	0.25	$ 6.34
$ 10.01 - $ 20.00	621,537	1.49	$ 15.37	21,537	1.33	$ 15.07
$ 20.01 - $ 30.00	1,284,883	2.73	$ 27.61	744,883	2.72	$ 27.40
$ 30.01 - $ 40.00	6,683,886	8.73	$ 35.78	223,131	3.71	$ 34.83
$ 40.01 - $ 50.00	1,765,405	8.52	$ 47.49	143,700	6.54	$ 46.54
$ 50.01 - $ 60.00	2,456,378	7.34	$ 57.54	343,752	6.01	$ 57.05
$ 60.01 - $ 70.00	1,351,150	7.38	$ 64.17	265,350	6.23	$ 65.47
$ 70.01 - $ 80.00	20,000	1.00	$ 72.89	20,000	1.00	$ 72.89
$ — - $ 80.00	14,202,039	7.45	$ 42.08	1,781,153	4.25	$ 41.41

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Stock Award Activity

Our stock option activity was as follows:

	For the Years Ended December 31,					
	2018		2017		2016	
	Options	Weighted-Average Exercise Price	Options	Weighted-Average Exercise Price	Options	Weighted-Average Exercise Price
Total options outstanding, beginning of period	8,847,734	$ 43.90	7,923,009	$ 36.21	6,845,685	$ 31.13
Granted	7,494,012	$ 38.41	3,468,626	$ 59.66	1,901,000	$ 54.41
Exercised	(267,905)	$ 16.43	(514,401)	$ 28.70	(431,092)	$ 23.36
Forfeited and cancelled	(1,871,802)	$ 39.67	(2,029,500)	$ 44.64	(392,584)	$ 50.03
Total options outstanding, end of period	14,202,039	$ 42.08	8,847,734	$ 43.90	7,923,009	$ 36.21
Performance based options outstanding, end of period (1)	8,969,886	$ 40.34	5,490,626	$ 42.81	4,312,000	$ 31.39
Exercisable at end of period	1,781,153	$ 41.41	1,772,608	$ 35.13	1,892,809	$ 29.97

(1) These stock options are included in the caption “Total options outstanding, end of period.” See discussion of the 2008 LTIP, 2013 LTIP, 2017 LTIP, 2019 LTIP and Other Employee Performance Awards below.

We realized tax benefits from stock awards exercised as follows:

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Tax benefit from stock awards exercised	$ 1,664	$ 9,347	$ 5,006

Based on the closing market price of our Class A common stock on December 31, 2018, the aggregate intrinsic value of our stock options was as follows:

	As of December 31, 2018	
	Options Outstanding	Options Exercisable
	(In thousands)	
Aggregate intrinsic value	$ 6,511	$ 757

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Our restricted stock unit and award activity was as follows:

	For the Years Ended December 31,					
	2018		2017		2016	
	Restricted Stock Units/Awards	Weighted-Average Grant Date Fair Value	Restricted Stock Units/Awards	Weighted-Average Grant Date Fair Value	Restricted Stock Units/Awards	Weighted-Average Grant Date Fair Value
Total restricted stock units/awards outstanding, beginning of period	2,484,720	$ 51.16	1,336,000	$ 32.11	1,382,250	$ 32.01
Granted	—	$ —	1,871,375	$ 63.87	67,060	$ 56.35
Vested	(11,935)	$ 63.49	(14,845)	$ 62.58	(60)	$ 49.15
Forfeited and cancelled	(712,560)	$ 48.51	(707,810)	$ 48.59	(113,250)	$ 45.12
Total restricted stock units/awards outstanding, end of period	1,760,225	$ 52.15	2,484,720	$ 51.16	1,336,000	$ 32.11
Restricted Performance Units/Awards outstanding, end of period (1)	1,726,250	$ 51.92	2,435,500	$ 50.91	1,336,000	$ 32.11

(1) These stock units/awards are included in the caption “Total restricted stock units/awards outstanding, end of period.” See discussion of the 2008 LTIP, 2013 LTIP, 2017 LTIP, 2019 LTIP and Other Employee Performance Awards below.

Long-Term Performance-Based Plans

2008 LTIP. During 2008, we adopted a long-term, performance-based stock incentive plan (the “2008 LTIP”). The 2008 LTIP provided stock options and restricted stock units, either alone or in combination, which vested based on

company-specific subscriber and financial performance conditions. As of June 30, 2013, 100% of the eligible 2008 LTIP awards had vested.

2013 LTIP. During 2013, we adopted a long-term, performance-based stock incentive plan (the "2013 LTIP"). The 2013 LTIP provides stock options and restricted stock units in combination, which vest based on company-specific subscriber and financial performance conditions. Exercise of the stock awards is contingent on achieving these performance conditions by September 30, 2022.

Although no awards vest until the Company attains the performance goals described above, compensation related to the 2013 LTIP will be recorded based on management's assessment of the probability of meeting the remaining performance conditions. If the remaining performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition.

During the years ended December 31, 2015, 2014, 2013, we determined that 30%, 10% and 20%, respectively, of the 2013 LTIP performance conditions were probable of achievement. During the years ended December 31, 2018, 2017 and 2016, no additional 2013 LTIP performance conditions were deemed probable of achievement. During 2018, management determined the 2013 LTIP performance conditions were neither probable nor improbable of achievement. As a result, we are no longer recording non-cash, stock-based compensation expense for the 2013 LTIP. We recorded non-cash, stock-based compensation expense for the years ended December 31, 2018, 2017 and 2016, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2018, approximately 20% of the 2013 LTIP awards had vested.

2017 LTIP. On December 2, 2016, we adopted a long-term, performance-based stock incentive plan (the "2017 LTIP"). The 2017 LTIP provides stock options, which vest based on company-specific subscriber and financial performance conditions. Awards were initially granted under the 2017 LTIP as of January 1, 2017. Exercise of the stock awards is contingent on achieving these performance conditions by December 31, 2020.

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Although no awards vest until the Company attains the performance conditions described above, compensation related to the 2017 LTIP will be recorded based on management's assessment of the probability of meeting the performance conditions. If the performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition.

During both the years ended December 31, 2018 and 2017, we determined that 75% of the 2017 LTIP performance conditions were probable of achievement. During 2018, management determined the 2017 LTIP performance conditions were neither probable nor improbable of achievement. As a result, we are no longer recording non-cash, stock-based compensation expense for the 2017 LTIP. We recorded non-cash, stock-based compensation expense for the years ended December 31, 2018 and 2017, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized."

2019 LTIP. On August 17, 2018, we adopted a long-term, performance-based stock incentive plan (the "2019 LTIP"). The 2019 LTIP provides stock options, which vest based on certain company-specific subscriber, operational and/or financial performance conditions. Vesting of the stock awards is contingent on achieving these conditions by December 31, 2023.

Although no awards vest until the Company attains the performance conditions described above, compensation related to the 2019 LTIP will be recorded based on management's assessment of the probability of meeting the performance conditions. If the performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition.

During the year ended December 31, 2018, we determined that 82% of the 2019 LTIP performance conditions were probable of achievement. As a result, non-cash, stock-based compensation expense was recorded for the year ended December 31, 2018, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized."

Other Employee Performance Awards. In addition to the above long-term, performance stock incentive plans, we have other stock awards that vest based on certain other company-specific subscriber, operational and/or financial performance conditions. Exercise of these stock awards is contingent on achieving certain performance conditions.

Additional compensation related to these awards will be recorded based on management's assessment of the probability of meeting the remaining performance conditions. If the remaining performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition. See the table below titled "Estimated Remaining Non-Cash, Stock-Based Compensation Expense."

Although no awards vest until the performance conditions are attained, we determined that certain performance conditions described above were probable of achievement and, as a result, recorded non-cash, stock-based compensation expense for the years ended December 31, 2018, 2017 and 2016, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized."

Given the competitive nature of our business, small variations in subscriber churn, gross new subscriber activation rates and certain other factors can significantly impact subscriber growth. Consequently, while it was determined that achievement of certain other company-specific subscriber, operational and/or financial performance conditions were not probable as of December 31, 2018, that assessment could change in the future.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

The non-cash, stock-based compensation expense associated with these awards was as follows:

	For the Years Ended December 31,		
Non-Cash, Stock-Based Compensation Expense Recognized	2018	2017	2016
	(In thousands)		
2019 LTIP	$ 3,534	$ —	$ —
2017 LTIP	3,334	10,640	—
2013 LTIP (1)	(2,471)	(321)	2,565
Other employee performance awards	17,945	7,549	1,424
Total non-cash, stock-based compensation expense recognized for performance based awards	$ 22,342	$ 17,868	$ 3,989

(1) “Non-Cash, Stock-Based Compensation Expense Recognized” includes forfeitures.

Estimated Remaining Non-Cash, Stock-Based Compensation Expense	2019 LTIP	2017 LTIP	2013 LTIP	Other Employee Performance Awards
	(In thousands)			
Expense estimated to be recognized during 2019	$ 14,122	$ —	$ —	$ 17,946
Estimated contingent expense subsequent to 2019	26,410	20,910	34,342	64,313
Total estimated remaining expense over the term of the plan	$ 40,532	$ 20,910	$ 34,342	$ 82,259

Of the 14.2 million stock options and 1.8 million restricted stock units and awards outstanding under our stock incentive plans as of December 31, 2018, the following awards were outstanding pursuant to our performance-based stock incentive plans:

	As of December 31, 2018	
Performance Based Stock Options	Number of Awards	Weighted-Average Grant Price

2019 LTIP	4,296,000	$ 35.42
2017 LTIP	2,512,386	$ 56.99
2013 LTIP	1,021,500	$ 41.35
Other employee performance awards	1,140,000	$ 21.31
Total	8,969,886	$ 40.34
Restricted Performance Units/Awards		
2013 LTIP	510,750	
Other employee performance awards	1,215,500	
Total	1,726,250	

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Stock-Based Compensation

Total non-cash, stock-based compensation expense for all of our employees is shown in the following table for the years ended December 31, 2018, 2017 and 2016 and was allocated to the same expense categories as the base compensation for such employees:

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Subscriber-related	$ 1,150	$ 1,562	$ 694
Satellite and transmission	262	1,761	—
General and administrative	34,849	26,618	12,343
Total non-cash, stock-based compensation	$ 36,261	$ 29,941	$ 13,037

As of December 31, 2018, our total unrecognized compensation cost related to our non-performance based unvested stock awards was $36 million and will be recognized over a weighted-average period of approximately 3.7 years. Share-based compensation expense is recognized based on stock awards ultimately expected to vest.

Valuation

The fair value of each stock option granted for the years ended December 31, 2018, 2017 and 2016 was estimated at the date of the grant using a Black-Scholes option valuation model with the following assumptions:

	For the Years Ended December 31,		
Stock Options	2018	2017	2016
Risk-free interest rate	2.09 % - 2.98 %	1.34 % - 2.29 %	1.06 % - 2.27 %
Volatility factor	23.33 % - 30.22 %	22.25 % - 26.15 %	26.12 % - 33.37 %
Expected term of options in years	2.8 - 5.5	3.8 - 5.5	5.4 - 10.0
Fair value of options granted	$ 7.10 - $ 12.53	$ 11.95 - $ 16.69	$ 12.45 - $ 26.86

While we currently do not intend to declare dividends on our common stock, we may elect to do so from time to time.

Accordingly, the dividend yield percentage used in the Black-Scholes option valuation model was set at zero for all periods. The Black-Scholes option valuation model was developed for use in estimating the fair value of traded stock options which have no vesting restrictions and are fully transferable. Consequently, our estimate of fair value may differ from other valuation models. Further, the Black-Scholes option valuation model requires the input of highly subjective assumptions. Changes in these subjective input assumptions can materially affect the fair value estimate.

We will continue to evaluate the assumptions used to derive the estimated fair value of our stock options as new events or changes in circumstances become known.

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DISH NETWORK CORPORATION

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14. Commitments and Contingencies

Commitments

As of December 31, 2018, future maturities of our long-term debt, capital lease and contractual obligations are summarized as follows:

	Payments due by period						
	Total	2019	2020	2021	2022	2023	Thereafte
	(In thousands)						
Long-term debt obligations	$ 15,957,087	$ 1,322,070	$ 1,104,503	$ 2,004,626	$ 2,004,756	$ 1,504,569	$ 8,016,5
Capital lease obligations	66,984	19,922	19,166	20,645	7,251	—	—
Interest expense on long-term debt and capital lease obligations	4,247,370	889,686	759,850	662,942	594,458	438,488	901,94
Satellite-related obligations	887,386	311,374	236,913	206,111	124,668	8,320	—
Operating lease obligations	162,335	38,561	25,482	20,915	16,208	10,371	50,798
Purchase obligations	1,392,861	1,296,580	48,966	29,284	18,031	—	—
Total	$ 22,714,023	$ 3,878,193	$ 2,194,880	$ 2,944,523	$ 2,765,372	$ 1,961,748	$ 8,969,3

In certain circumstances the dates on which we are obligated to make these payments could be delayed. These amounts will increase to the extent that we procure launch and/or in-orbit insurance on our satellites or contract for the construction, launch or lease of additional satellites.

The table above does not include $385 million of liabilities associated with unrecognized tax benefits that were accrued, as discussed in Note 10 and are included on our Consolidated Balance Sheets as of December 31, 2018. We do not expect any portion of this amount to be paid or settled within the next twelve months.

The table above does not include all potential expenses we expect to incur for our wireless projects including, among other things, our First Phase plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion through 2020. We expect the second phase of our network deployment ("Second Phase") to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion. For further discussion see below.

Wireless

Since 2008, we have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets and made over $10 billion in non-controlling investments in certain entities, for a total of over $21 billion, as described further below.

DISH Network Spectrum

We have directly invested over $11 billion to acquire certain wireless spectrum licenses and related assets.

700 MHz Licenses. In 2008, we paid $712 million to acquire certain 700 MHz E Block ("700 MHz") wireless spectrum licenses, which were granted to us by the FCC in February 2009. These licenses are subject to certain build-out requirements. By March 2020, we must provide signal coverage and offer service to at least 70% of the population in each of our E Block license areas (the "700 MHz Build-Out Requirement"). If the 700 MHz Build-Out Requirement is not met with respect to any particular E Block license area, our authorization may terminate for the geographic portion of that license area in which we are not providing service. In addition to the 700 MHz Build-Out Requirement deadline in March 2020, these wireless spectrum licenses also expire in March 2020 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

AWS-4 Licenses. On March 2, 2012, the FCC approved the transfer of 40 MHz of wireless spectrum licenses held by DBSD North America, Inc. ("DBSD North America") and TerreStar Networks, Inc. ("TerreStar") to us. On March 9, 2012, we completed the acquisition of 100% of the equity of reorganized DBSD North America (the "DBSD Transaction") and substantially all of the assets of TerreStar (the "TerreStar Transaction"), pursuant to which we acquired, among other things, certain satellite assets and wireless spectrum licenses held by DBSD North America and TerreStar. The total consideration to acquire the DBSD North America and TerreStar assets was approximately $2.860 billion.

On February 15, 2013, the FCC issued an order, which became effective on March 7, 2013, modifying our licenses to expand our terrestrial operating authority with AWS-4 authority ("AWS-4"). These licenses are subject to certain build-out requirements. By March 2020, we are required to provide terrestrial signal coverage and offer terrestrial service to at least 70% of the population in each area covered by an individual license (the "AWS-4 Build-Out Requirement"). If the AWS-4 Build-Out Requirement is not met with respect to any particular individual license, our terrestrial authorization for that license area may terminate. The FCC's December 20, 2013 order also conditionally waived certain FCC rules for our AWS-4 licenses to allow us to repurpose all 20 MHz of our uplink spectrum (2000-2020 MHz) for terrestrial downlink operations. On June 1, 2016, we notified the FCC that we had elected to use our AWS-4 uplink spectrum for terrestrial downlink operations, and effective June 7, 2016, the FCC modified our AWS-4 licenses, resulting in all 40 MHz of our AWS-4 spectrum being designated for terrestrial downlink operations. These wireless spectrum licenses expire in March 2023 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

H Block Licenses. On April 29, 2014, the FCC issued an order granting our application to acquire all 176 wireless spectrum licenses in the H Block auction. We paid approximately $1.672 billion to acquire these H Block licenses, including clearance costs associated with the lower H Block spectrum. The H Block licenses are subject to certain build-out requirements. By April 2022, we must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual H Block license (the "H Block Build-Out Requirement"). If the H Block Build-Out Requirement is not met, our authorization for each H Block license area in which we do not meet the requirement may terminate. These wireless spectrum licenses expire in April 2024 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

600 MHz Licenses. The broadcast incentive auction in the 600 MHz frequency range ("Auction 1000") began on March 29, 2016 and concluded on March 30, 2017. On April 13, 2017, the FCC announced that ParkerB.com Wireless L.L.C. ("ParkerB.com"), a wholly-owned subsidiary of DISH Network, was the winning bidder for 486 wireless spectrum licenses (the "600 MHz Licenses") with aggregate winning bids totaling approximately $6.211 billion. On April 27, 2017, ParkerB.com filed an application with the FCC to acquire the 600 MHz Licenses. On July

1, 2016, we paid $1.5 billion to the FCC as a deposit for Auction 1000. On May 11, 2017, we paid the remaining balance of our winning bids of approximately $4.711 billion. On June 14, 2017, the FCC issued an order granting ParkerB.com's application to acquire the 600 MHz Licenses.

The 600 MHz Licenses are subject to certain interim and final build-out requirements. By June 2023, we must provide reliable signal coverage and offer wireless service to at least 40% of the population in each area covered by an individual 600 MHz License (the "600 MHz Interim Build-Out Requirement"). By June 2029, we must provide reliable signal coverage and offer wireless service to at least 75% of the population in each area covered by an individual 600 MHz License (the "600 MHz Final Build-Out Requirement"). If the 600 MHz Interim Build-Out Requirement is not met, the 600 MHz License term and the 600 MHz Final Build-Out Requirement may be accelerated by two years (from June 2029 to June 2027) for each 600 MHz License area in which we do not meet the requirement. If the 600 MHz Final Build-Out Requirement is not met, our authorization for each 600 MHz License area in which we do not meet the requirement may terminate. In addition, certain broadcasters will have up to 39 months (ending July 13, 2020) to relinquish their 600 MHz spectrum, which may impact the timing for our ability to commence operations using certain 600 MHz Licenses. The FCC has issued the 600 MHz Licenses prior to the clearance of the spectrum, and the build-out deadlines are based on the date that the 600 MHz Licenses were issued to us, not the date that the spectrum is cleared. These wireless spectrum licenses expire in June 2029 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

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MVDDS Licenses. We have multichannel video distribution and data service ("MVDDS") licenses in 82 out of 214 geographical license areas, including Los Angeles, New York City, Chicago and several other major metropolitan areas. By August 2014, we were required to meet certain FCC build-out requirements related to our MVDDS licenses, and we are subject to certain FCC service rules applicable to these licenses. In January 2015, the FCC granted our application to extend the build-out requirements related to our MVDDS licenses. We now have until the third quarter 2019 to provide "substantial service" on our MVDDS licenses. Our MVDDS licenses may be terminated if we do not provide substantial service in accordance with the new build-out requirements. These wireless spectrum licenses expire in August 2024 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

In 2016, the MVDDS 5G Coalition, of which we are a member, filed a petition for rulemaking requesting the FCC to consider updating the rules to allow us to provide two-way 5G services using our MVDDS licenses. We cannot predict when or if the FCC will grant the petition and proceed with a rulemaking. If the FCC adopts rules that would allow us to provide two-way 5G services using our MVDDS licenses, the requests of OneWeb and others for authority to use the band for service from NGSO satellite systems may hinder our ability to provide 5G services using our MVDDS licenses.

LMDS Licenses. As a result of the completion of the Share Exchange on February 28, 2017, we acquired from EchoStar certain Local Multipoint Distribution Service ("LMDS") licenses in four markets: Cheyenne, Kansas City, Phoenix, and San Diego. The "substantial service" milestone has been met with respect to each of the licenses. In addition, through the FCC's Spectrum Frontiers proceeding, a portion of each of our LMDS licenses were reassigned to the Upper Microwave Flexible Use Service band (27.5-28.35 GHz), which will allow for a more flexible use of the licenses, including, among other things, 5G mobile operations. These wireless spectrum licenses have been renewed by the FCC through September 2028. There can be no assurances that the FCC will renew these wireless spectrum licenses.

Commercialization of Our Wireless Spectrum Licenses and Related Assets. In March 2017, we notified the FCC that we plan to deploy a next-generation 5G-capable network, focused on supporting narrowband IoT. We expect to complete the First Phase by March 2020, with subsequent phases to be completed thereafter. As of December 31, 2018, we had entered into vendor contracts with multiple parties for, among other things, base stations, chipsets, modules, tower leases, the core network, RF design, and deployment services for the First Phase. Among other things, initial RF design in connection with the First Phase is now complete, we have secured certain tower sites, and we are in the process of identifying and securing additional tower sites. The core network has been installed and commissioned. We installed the first base stations on sites in 2018, and plan to continue deployment until complete. We currently expect expenditures for our wireless projects to be between $500 million and $1.0 billion

through 2020. We expect the Second Phase to follow once the 3GPP Release 16 is standardized and as our plans for our other spectrum holdings develop, we plan to upgrade and expand our network to full 5G to support new use cases. We currently expect expenditures for the Second Phase to be approximately $10 billion.

We will need to make significant additional investments or partner with others to, among other things, commercialize, build-out, and integrate these licenses and related assets, and any additional acquired licenses and related assets; and comply with regulations applicable to such licenses. Depending on the nature and scope of such commercialization, build-out, integration efforts, and regulatory compliance, any such investments or partnerships could vary significantly. In addition, as we consider our options for the commercialization of our wireless spectrum, we will incur significant additional expenses and will have to make significant investments related to, among other things, research and development, wireless testing and wireless network infrastructure. We may also determine that additional wireless spectrum licenses may be required to commercialize our wireless business and to compete with other wireless service providers. For example, on September 18, 2018, we filed an application with the FCC to participate as a bidder in the FCC's auction of Upper Microwave Flexible Use Service licenses in the 27.5–28.35 GHz bands ("Auction 101") and 24.25–24.45 and 24.75–25.25 GHz bands ("Auction 102" and collectively with Auction 101, "Auctions 101 & 102"). On October 10, 2018, the FCC announced that a subsidiary of DISH Network and 25 other applicants were qualified to participate in Auction 101 and that a subsidiary of DISH Network and 33 other applicants were qualified to participate in Auction 102. Auction 101 commence on November 14, 2018 and concluded January 24, 2019.

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Auction 102 is scheduled to commence March 14, 2019. The FCC determined that bidding in these auctions will be "anonymous," which means that prior to and during the course of the auctions, the FCC will not make public any information about a specific applicant's upfront deposit or its bids. In addition, FCC rules restrict information that bidders may disclose about their participation in the auctions.

On July 9, 2018, the FCC sent us a letter inquiring about our progress toward meeting certain build-out milestones by March 2020, which is publicly available on the FCC's website. On September 21, 2018, we filed a response letter with the FCC regarding our progress toward meeting certain build-out milestones. We will continue to update the FCC about our progress on the First Phase. There is no assurance that the FCC will find our build-out, including the First Phase, sufficient to meet the build-out requirements to which our wireless spectrum licenses are subject.

We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on acceptable terms or at all. There can be no assurance that we will be able to develop and implement a business model that will realize a return on these wireless spectrum licenses or that we will be able to profitably deploy the assets represented by these wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations.

DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

Non-Controlling Investments

During 2015, through our wholly-owned subsidiaries American II and American III, we initially made over $10 billion in certain non-controlling investments in Northstar Spectrum, the parent company of Northstar Wireless, and in SNR HoldCo, the parent company of SNR Wireless, respectively. Under the applicable accounting guidance in ASC 810, Northstar Spectrum and SNR HoldCo are considered variable interest entities and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 for further information.

Northstar Investment. Through American II, we own a non-controlling interest in Northstar Spectrum, which is comprised of 85% of the Class B Common Interests and 100% of the Class A Preferred Interests of Northstar Spectrum. Northstar Manager is the sole manager of Northstar Spectrum and owns a controlling interest in Northstar Spectrum, which is comprised of 15% of the Class B Common Interests of Northstar Spectrum. As of March 31, 2018,

the total equity contributions from American II and Northstar Manager to Northstar Spectrum were approximately $7.621 billion and $133 million, respectively. As of March 31, 2018, the total loans from American II to Northstar Wireless under the Northstar Credit Agreement (as defined below) for payments to the FCC related to the Northstar Licenses (as defined below) were approximately $500 million. See below for further information.

SNR Investment. Through American III, we own a non-controlling interest in SNR HoldCo, which is comprised of 85% of the Class B Common Interests and 100% of the Class A Preferred Interests of SNR HoldCo. SNR Management is the sole manager of SNR HoldCo and owns a controlling interest in SNR HoldCo, which is comprised of 15% of the Class B Common Interests of SNR HoldCo. As of March 31, 2018, the total equity contributions from American III and SNR Management to SNR HoldCo were approximately $5.590 billion and $93 million, respectively. As of March 31, 2018, the total loans from American III to SNR Wireless under the SNR Credit Agreement (as defined below) for payments to the FCC related to the SNR Licenses (as defined below) were approximately $500 million. See below for further information.

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AWS-3 Auction

Northstar Wireless and SNR Wireless each filed applications with the FCC to participate in Auction 97 (the "AWS-3 Auction") for the purpose of acquiring certain AWS-3 Licenses. Each of Northstar Wireless and SNR Wireless applied to receive bidding credits of 25% as designated entities under applicable FCC rules.

Northstar Wireless was the winning bidder for AWS-3 Licenses with gross winning bid amounts totaling approximately $7.845 billion, which after taking into account a 25% bidding credit, was approximately $5.884 billion. SNR Wireless was the winning bidder for AWS-3 Licenses with gross winning bid amounts totaling approximately $5.482 billion, which after taking into account a 25% bidding credit, was approximately $4.112 billion. In addition to the net winning bids, SNR Wireless made a bid withdrawal payment of approximately $8 million.

FCC Order and October 2015 Arrangements. On August 18, 2015, the FCC released a Memorandum Opinion and Order, FCC 15-104 (the "Order") in which the FCC determined, among other things, that DISH Network has a controlling interest in, and is an affiliate of, Northstar Wireless and SNR Wireless, and therefore DISH Network's revenues should be attributed to them, which in turn makes Northstar Wireless and SNR Wireless ineligible to receive the 25% bidding credits (approximately $1.961 billion for Northstar Wireless and $1.370 billion for SNR Wireless).

Letters Exchanged between Northstar Wireless and the FCC Wireless Bureau. As outlined in letters exchanged between Northstar Wireless and the Wireless Telecommunications Bureau of the FCC (the "FCC Wireless Bureau"), Northstar Wireless paid the gross winning bid amounts for 261 AWS-3 Licenses (the "Northstar Licenses") totaling approximately $5.619 billion through the application of funds already on deposit with the FCC. Northstar Wireless also notified the FCC that it would not be paying the gross winning bid amounts for 84 AWS-3 Licenses totaling approximately $2.226 billion.

As a result of the nonpayment of those gross winning bid amounts, the FCC retained those licenses and Northstar Wireless owed the FCC an additional interim payment of approximately $334 million (the "Northstar Interim Payment"), which is equal to 15% of $2.226 billion. The Northstar Interim Payment was recorded as an expense during the fourth quarter 2015. Northstar Wireless immediately satisfied the Northstar Interim Payment through the application of funds already on deposit with the FCC and an additional loan from American II of approximately $69 million. As a result, the FCC will not deem Northstar Wireless to be a "current defaulter" under applicable FCC rules.

In addition, the FCC Wireless Bureau acknowledged that Northstar Wireless' nonpayment of those gross winning bid amounts does not constitute action involving gross misconduct, misrepresentation or bad faith. Therefore, the FCC concluded that such nonpayment will not affect the eligibility of Northstar Wireless, its investors (including DISH Network) or their respective affiliates to participate in future spectrum auctions (including Auction 1000 and any re-auction of the AWS-3 licenses retained by the FCC). At this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction of those AWS-3 licenses.

If the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are greater than or equal to the winning bids of Northstar Wireless, no additional amounts will be owed to the FCC. However, if those winning bids are less than the winning bids of Northstar Wireless, then Northstar Wireless will be responsible for the difference less any overpayment of the Northstar Interim Payment (which will be recalculated as 15% of the winning bids from re-auction or other award) (the "Northstar Re-Auction Payment"). For example, if the winning bids in a re-auction are $1, the Northstar Re-Auction Payment would be approximately $1.892 billion, which is calculated as the difference between $2.226 billion (the Northstar winning bid amounts) and $1 (the winning bids from re-auction) less the resulting $334 million overpayment of the Northstar Interim Payment. As discussed above, at this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction. We cannot predict with any degree of certainty the timing or outcome of any re-auction or the amount of any Northstar Re-Auction Payment.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

DISH Network Guaranty in Favor of the FCC for Certain Northstar Wireless Obligations. On October 1, 2015, DISH Network entered into a guaranty in favor of the FCC (the "FCC Northstar Guaranty") with respect to the Northstar Interim Payment (which was satisfied on October 1, 2015) and any Northstar Re-Auction Payment. The FCC Northstar Guaranty provides, among other things, that during the period between the due date for the payments guaranteed under the FCC Northstar Guaranty and the date such guaranteed payments are paid: (i) Northstar Wireless' payment obligations to American II under the Northstar Credit Agreement will be subordinated to such guaranteed payments; and (ii) DISH Network or American II will withhold exercising certain rights as a creditor of Northstar Wireless.

Letters Exchanged between SNR Wireless and the FCC Wireless Bureau. As outlined in letters exchanged between SNR Wireless and the FCC Wireless Bureau, SNR Wireless paid the gross winning bid amounts for 244 AWS-3 Licenses (the "SNR Licenses") totaling approximately $4.271 billion through the application of funds already on deposit with the FCC and a portion of an additional loan from American III in an aggregate amount of approximately $344 million (which included an additional bid withdrawal payment of approximately $3 million). SNR Wireless also notified the FCC that it would not be paying the gross winning bid amounts for 113 AWS-3 Licenses totaling approximately $1.211 billion.

As a result of the nonpayment of those gross winning bid amounts, the FCC retained those licenses and SNR Wireless owed the FCC an additional interim payment of approximately $182 million (the "SNR Interim Payment"), which is equal to 15% of $1.211 billion. The SNR Interim Payment was recorded as an expense during the fourth quarter 2015. SNR Wireless immediately satisfied the SNR Interim Payment through a portion of an additional loan from American III in an aggregate amount of approximately $344 million. As a result, the FCC will not deem SNR Wireless to be a "current defaulter" under applicable FCC rules.

In addition, the FCC Wireless Bureau acknowledged that SNR Wireless' nonpayment of those gross winning bid amounts does not constitute action involving gross misconduct, misrepresentation or bad faith. Therefore, the FCC concluded that such nonpayment will not affect the eligibility of SNR Wireless, its investors (including DISH Network) or their respective affiliates to participate in future spectrum auctions (including Auction 1000 and any re-auction of the AWS-3 licenses retained by the FCC). At this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction of those AWS-3 licenses.

If the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are greater than or equal to the winning bids of SNR Wireless, no additional amounts will be owed to the FCC. However, if those winning bids are less than the winning bids of SNR Wireless, then SNR Wireless will be responsible for the difference

less any overpayment of the SNR Interim Payment (which will be recalculated as 15% of the winning bids from re-auction or other award) (the "SNR Re-Auction Payment"). For example, if the winning bids in a re-auction are $1, the SNR Re-Auction Payment would be approximately $1.029 billion, which is calculated as the difference between $1.211 billion (the SNR winning bid amounts) and $1 (the winning bids from re-auction) less the resulting $182 million overpayment of the SNR Interim Payment. As discussed above, at this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction. We cannot predict with any degree of certainty the timing or outcome of any re-auction or the amount of any SNR Re-Auction Payment.

DISH Network Guaranty in Favor of the FCC for Certain SNR Wireless Obligations. On October 1, 2015, DISH Network entered into a guaranty in favor of the FCC (the "FCC SNR Guaranty") with respect to the SNR Interim Payment (which was satisfied on October 1, 2015) and any SNR Re-Auction Payment. The FCC SNR Guaranty provides, among other things, that during the period between the due date for the payments guaranteed under the FCC SNR Guaranty and the date such guaranteed payments are paid: (i) SNR Wireless' payment obligations to American III under the SNR Credit Agreement will be subordinated to such guaranteed payments; and (ii) DISH Network or American III will withhold exercising certain rights as a creditor of SNR Wireless.

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On October 27, 2015, the FCC granted the Northstar Licenses to Northstar Wireless and the SNR Licenses to SNR Wireless, respectively, which are recorded in "FCC authorizations" on our Consolidated Balance Sheets. The AWS-3 Licenses are subject to certain interim and final build-out requirements. By October 2021, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 40% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Interim Build-Out Requirement"). By October 2027, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Final Build-Out Requirement"). If the AWS-3 Interim Build-Out Requirement is not met, the AWS-3 License term and the AWS-3 Final Build-Out Requirement may be accelerated by two years (from October 2027 to October 2025) for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement. If the AWS-3 Final Build-Out Requirement is not met, the authorization for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement may terminate. These wireless spectrum licenses expire in October 2027 unless they are renewed by the FCC. There can be no assurances that the FCC will renew these wireless spectrum licenses.

Qui Tam. On September 23, 2016, the United States District Court for the District of Columbia unsealed a qui tam complaint that was filed by Vermont National Telephone Company ("Vermont National") against us; our wholly-owned subsidiaries, American AWS-3 Wireless I L.L.C., American II, American III, and DISH Wireless Holding L.L.C.; Charles W. Ergen (our Chairman) and Cantey M. Ergen (a member of our board of directors); Northstar Wireless; Northstar Spectrum; Northstar Manager; SNR Wireless; SNR HoldCo; SNR Management; and certain other parties. See "Contingencies – Litigation – Vermont National Telephone Company" for further information.

D.C. Circuit Court Opinion. On August 29, 2017, the United States Court of Appeals for the District of Columbia Circuit (the "D.C. Circuit") in SNR Wireless LicenseCo, LLC, et al. v. Federal Communications Commission, 868 F.3d 1021 (D.C. Cir. 2017) (the "Appellate Decision") affirmed the Order in part, and remanded the matter to the FCC to give Northstar Wireless and SNR Wireless an opportunity to seek to negotiate a cure of the issues identified by the FCC in the Order (a "Cure"). On January 26, 2018, SNR Wireless and Northstar Wireless filed a petition for a writ of certiorari, asking the United States Supreme Court to hear an appeal from the Appellate Decision, which the United States Supreme Court denied on June 25, 2018.

Order on Remand. On January 24, 2018, the FCC released an Order on Remand, DA 18-70 (the "Order on Remand") purporting to establish a procedure to afford Northstar Wireless and SNR Wireless the opportunity to implement a Cure pursuant to the Appellate Decision. The Order on Remand provided that Northstar Wireless and SNR Wireless each had until April 24, 2018 to file the necessary documentation to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualifies for the very small business bidding credit that it sought in the AWS-3 Auction. Additionally, the Order on Remand provides that if either Northstar Wireless or SNR Wireless needs additional time to negotiate new or amended agreements, it may request to extend the deadline for such negotiations for an additional 45 days (extending the deadline to June 8, 2018). On April 16, 2018, the FCC approved Northstar

Wireless' and SNR Wireless' requests to extend the deadline for such negotiations for an additional 45 days to June 8, 2018. On June 8, 2018, Northstar Wireless and SNR Wireless each filed amended agreements to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualifies for the very small business bidding credit that it sought in the AWS-3 Auction. The Order on Remand also provided, among other things, until July 23, 2018 for certain third-parties to file comments about any changes to the agreements proposed by Northstar Wireless and SNR Wireless and several third-parties filed comments (with one opposition). On October 22, 2018, Northstar Wireless and SNR Wireless filed a response to the third-party comments.

Northstar Wireless and SNR Wireless have submitted eleven separate requests for meetings with the FCC regarding a Cure. To date, with the lone exception of the Office of former Commissioner Mignon Clyburn, the parties have been refused an audience with the Commissioners and staff of the FCC. Northstar Wireless and SNR Wireless have filed a Joint Application for Review of the Order on Remand requesting, among other things, an iterative negotiation process with the FCC regarding a Cure, which was denied on July 12, 2018. We cannot predict with any degree of certainty the timing or outcome of these proceedings.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Northstar Operative Agreements

Northstar LLC Agreement. Northstar Spectrum is governed by a limited liability company agreement by and between American II and Northstar Manager (the "Northstar Spectrum LLC Agreement"). Pursuant to the Northstar Spectrum LLC Agreement, American II and Northstar Manager made pro-rata equity contributions in Northstar Spectrum.

On March 31, 2018, American II, Northstar Spectrum, and Northstar Manager amended and restated the Northstar Spectrum LLC Agreement, to, among other things: (i) exchange $6.870 billion of the amounts outstanding and owed by Northstar Wireless to American II pursuant to the Northstar Credit Agreement (as defined below) for 6,870,493 Class A Preferred Interests in Northstar Spectrum (the "Northstar Preferred Interests"); (ii) replace the existing investor protection provisions with the investor protections described by the FCC in Baker Creek Communications, LLC, Memorandum Opinion and Order, 13 FCC Rcd 18709, 18715 (1998); (iii) delete the obligation of Northstar Manager to consult with American II regarding budgets and business plans; and (iv) remove the requirement that Northstar Spectrum's systems be interoperable with ours. The Northstar Preferred Interests: (a) are non-voting; (b) have a 12 percent mandatory quarterly distribution, which can be paid in cash or additional face amount of Northstar Preferred Interests at the sole discretion of Northstar Manager; and (c) have a liquidation preference equal to the then-current face amount of the Northstar Preferred Interests plus accrued and unpaid mandatory quarterly distributions in the event of certain liquidation events or deemed liquidation events (e.g., a merger or dissolution of Northstar Spectrum, or a sale of substantially all of Northstar Spectrum's assets). As a result of the exchange noted in (i) above, a principal amount of $500 million of debt remains under the Northstar Credit Agreement, as described below.

On June 7, 2018, American II, Northstar Spectrum, and Northstar Manager amended and restated the Second Amended and Restated Limited Liability Company Agreement, dated March 31, 2018, by and among American II, Northstar Spectrum, and Northstar Manager, to, among other things: (i) reduce the mandatory quarterly distribution for the Northstar Preferred Interests from 12 percent to eight percent from and after June 7, 2018; (ii) increase the window for Northstar Manager to "put" its interest in Northstar Spectrum to Northstar Spectrum after October 27, 2020 from 30 days to 90 days; (iii) provide an additional 90-day window for Northstar Manager to put its interest in Northstar Spectrum to Northstar Spectrum commencing on October 27, 2021; (iv) provide a right for Northstar Manager to require an appraisal of the fair market value of its interest in Northstar Spectrum at any time from October 27, 2022 through October 27, 2024, coupled with American II having the right to accept the offer to sell from Northstar Manager; (v) allow Northstar Manager to sell its interest in Northstar Spectrum without American II's consent any time after October 27, 2020 (previously October 27, 2025); (vi) allow Northstar Spectrum to conduct an initial public offering without American II's consent any time after October 27, 2022 (previously October 27, 2029); (vii) remove American II's rights of first refusal with respect to Northstar Manager's sale of its interest in Northstar Spectrum or Northstar Spectrum's sale of any AWS-3 Licenses; and (viii) remove American II's tag along rights with respect to Northstar Manager's sale of its interest in Northstar Spectrum.

Northstar Wireless Credit Agreement. On October 1, 2015, American II, Northstar Wireless and Northstar Spectrum amended the First Amended and Restated Credit Agreement dated October 13, 2014, by and among American II, as Lender, Northstar Wireless, as Borrower, and Northstar Spectrum, as Guarantor (as amended, the "Northstar Credit Agreement"), to provide, among other things, that: (i) the Northstar Interim Payment and any Northstar Re-Auction Payment will be made by American II directly to the FCC and will be deemed as loans under the Northstar Credit Agreement; (ii) the FCC is a third-party beneficiary with respect to American II's obligation to pay the Northstar Interim Payment and any Northstar Re-Auction Payment; (iii) in the event that the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are less than the winning bids of Northstar Wireless, the purchaser, assignee or transferee of any AWS-3 Licenses from Northstar Wireless is obligated to pay its pro-rata share of the difference (and Northstar Wireless remains jointly and severally liable for such pro-rata share); and (iv) during the period between the due date for the payments guaranteed under the FCC Northstar Guaranty (as discussed below) and the date such guaranteed payments are paid, Northstar Wireless' payment obligations to American II under the Northstar Credit Agreement will be subordinated to such guaranteed payments.

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On March 31, 2018, American II, Northstar Wireless, and Northstar Spectrum amended and restated the Northstar Credit Agreement, to, among other things: (i) lower the interest rate on the remaining $500 million principal balance under the Northstar Credit Agreement from 12 percent per annum to six percent per annum; (ii) eliminate the higher interest rate that would apply in the case of an event of default; and (iii) modify and/or remove certain obligations of Northstar Wireless to prepay the outstanding loan amounts.

On June 7, 2018, American II, Northstar Wireless, and Northstar Spectrum amended and restated the Northstar Credit Agreement to, among other things: (i) extend the maturity date on the remaining loan balance from seven years to 10 years; and (ii) remove the obligation of Northstar Wireless to obtain American II's consent for unsecured financing and equipment financing in excess of $25 million.

SNR Operative Agreements

SNR LLC Agreement. SNR HoldCo is governed by a limited liability company agreement by and between American III and SNR Management (the "SNR HoldCo LLC Agreement"). Pursuant to the SNR HoldCo LLC Agreement, American III and SNR Management made pro-rata equity contributions in SNR HoldCo.

On March 31, 2018, American III, SNR Holdco, SNR Wireless Management, and John Muleta amended and restated the SNR HoldCo LLC Agreement, to, among other things: (i) exchange $5.065 billion of the amounts outstanding and owed by SNR Wireless to American III pursuant to the SNR Credit Agreement (as defined below) for 5,065,415 Class A Preferred Interests in SNR Holdco (the "SNR Preferred Interests"); (ii) replace the existing investor protection provisions with the investor protections described by the FCC in Baker Creek Communications, LLC, Memorandum Opinion and Order, 13 FCC Rcd 18709, 18715 (1998); (iii) delete the obligation of SNR Management to consult with American III regarding budgets and business plans; and (iv) remove the requirement that SNR Management's systems be interoperable with ours. The SNR Preferred Interests: (a) are non-voting; (b) have a 12 percent mandatory quarterly distribution, which can be paid in cash or additional face amount of SNR Preferred Interests at the sole discretion of SNR Management; and (c) have a liquidation preference equal to the then-current face amount of the SNR Preferred Interests plus accrued and unpaid mandatory quarterly distributions in the event of certain liquidation events or deemed liquidation events (e.g., a merger or dissolution of SNR Holdco, or a sale of substantially all of SNR Holdco's assets). As a result of the exchange noted in (i) above, a principal amount of $500 million of debt remains under the SNR Credit Agreement, as described below.

On June 7, 2018, American III, SNR Holdco, SNR Management, and John Muleta amended and restated the Second Amended and Restated Limited Liability Company Agreement, dated March 31, 2018, by and among American III, SNR Holdco, SNR Management and John Muleta, to, among other things: (i) reduce the mandatory quarterly distribution for the SNR Preferred Interests from 12 percent to eight percent from and after June 7, 2018; (ii) increase the window for SNR Management to "put" its interest in SNR Holdco to SNR Holdco after October 27, 2020 from 30 days to 90 days; (iii) provide an additional 90-day window for SNR Management to put its interest in SNR Holdco to SNR Holdco commencing on October 27, 2021; (iv) provide a right for SNR Management to require an appraisal of the fair market value of its interest in SNR Holdco at any time from October 27, 2022 through October 27, 2024, coupled with American III having the right to accept the offer to sell from SNR Management; (v) allow SNR Management to sell its interest in SNR Holdco without American III's consent any time after October 27, 2020 (previously October 27, 2025); (vi) allow SNR Holdco to conduct an initial public offering without American III's consent any time after October 27, 2022 (previously October 27, 2029); (vii) remove American III's rights of first refusal with respect to SNR Management's sale of its interest in SNR Holdco or SNR Holdco's sale of any AWS-3 Licenses; and (viii) remove American III's tag along rights with respect to SNR Management's sale of its interest in SNR Holdco.

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SNR Credit Agreement. On October 1, 2015, American III, SNR Wireless and SNR HoldCo amended the First Amended and Restated Credit Agreement dated October 13, 2014, by and among American III, as Lender, SNR Wireless, as Borrower, and SNR HoldCo, as Guarantor (as amended, the "SNR Credit Agreement"), to provide, among other things, that: (i) the SNR Interim Payment and any SNR Re-Auction Payment will be made by American III directly to the FCC and will be deemed as loans under the SNR Credit Agreement; (ii) the FCC is a third-party beneficiary with respect to American III's obligation to pay the SNR Interim Payment and any SNR Re-Auction Payment; (iii) in the event that the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are less than the winning bids of SNR Wireless, the purchaser, assignee or transferee of any AWS-3 Licenses from SNR Wireless is obligated to pay its pro-rata share of the difference (and SNR Wireless remains jointly and severally liable for such pro-rata share); and (iv) during the period between the due date for the payments guaranteed under the FCC SNR Guaranty (as discussed below) and the date such guaranteed payments are paid, SNR Wireless' payment obligations to American III under the SNR Credit Agreement will be subordinated to such guaranteed payments.

On March 31, 2018, American III, SNR Wireless, and SNR Holdco amended and restated the SNR Credit Agreement, to, among other things: (i) lower the interest rate on the remaining $500 million principal balance under the SNR Credit Agreement from 12 percent per annum to six percent per annum; (ii) eliminate the higher interest rate that would apply in the case of an event of default; and (iii) modify and/or remove certain obligations of SNR Wireless to prepay the outstanding loan amounts.

On June 7, 2018, American III, SNR Wireless, and SNR Holdco amended and restated the SNR Credit Agreement to, among other things: (i) extend the maturity date on the remaining loan balance from seven years to 10 years; and (ii) remove the obligation of SNR Wireless to obtain American III's consent for unsecured financing and equipment financing in excess of $25 million.

The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate the Northstar Licenses and the SNR Licenses, comply with regulations applicable to the Northstar Licenses and the SNR Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out, integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. There can be no assurance that we will be able to obtain a profitable return on our non-controlling investments in the Northstar Entities and the SNR Entities.

Guarantees

During the third quarter 2009, EchoStar entered into a satellite transponder service agreement for Nimiq 5 through 2024. We sublease this capacity from EchoStar and also guarantee a certain portion of EchoStar's obligation under its satellite transponder service agreement through 2019. As of December 31, 2018, the remaining obligation of our guarantee was $53 million. As of December 31, 2018, we have not recorded a liability on the balance sheet for this guarantee.

Purchase Obligations

Our 2019 purchase obligations primarily consist of binding purchase orders for certain fixed contractual commitments to purchase programming content, receiver systems and related equipment, broadband equipment, digital broadcast operations, transmission costs, streaming delivery technology and infrastructure, engineering services, and other products and services related to the operation of our Pay-TV services. In addition, our 2019 purchase obligations also include equipment related to the network deployment for our wireless business. Our purchase obligations can fluctuate significantly from period to period due to, among other things, management's timing of payments and inventory purchases, and can materially impact our future operating asset and liability balances, and our future working capital requirements.

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Programming Contracts

In the normal course of business, we enter into contracts to purchase programming content in which our payment obligations are generally contingent on the number of Pay-TV subscribers to whom we provide the respective content. These programming commitments are not included in the "Commitments" table above. The terms of our contracts typically range from one to ten years with annual rate increases. Our programming expenses will increase to the extent we are successful in growing our Pay-TV subscriber base. In addition, programming costs per subscriber continue to increase due to contractual price increases and the renewal of long-term programming contracts on less favorable pricing terms.

Rent Expense

Total rent expense for operating leases was $383 million, $407 million and $409 million in 2018, 2017 and 2016, respectively.

Patents and Intellectual Property

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 that we offer or that we may offer in the future. We may not be aware of all intellectual property rights that our products or services may potentially infringe. Damages in patent infringement cases can be substantial, and in certain circumstances can be trebled. Further, we cannot estimate the extent to which we may be required in the future to obtain licenses with respect to patents 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 components of our products and services. We cannot be certain that these persons do not own the rights they claim, that our products do not infringe on these rights, and/or that these rights are not valid. Further, we cannot be certain that we would 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 to avoid infringement.

Contingencies

Separation Agreement

On January 1, 2008, we completed the distribution of our technology and set-top box business and certain infrastructure assets (the "Spin-off") into a separate publicly-traded company, EchoStar. In connection with the Spin-off, we entered into a separation agreement with EchoStar that provides, among other things, for the division of certain liabilities, including liabilities resulting from litigation. Under the terms of the separation agreement, EchoStar has assumed certain liabilities that relate to its 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, generally, EchoStar will only be liable for its acts or omissions following the Spin-off and we 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 our acts or omissions following the Spin-off. On February 28, 2017, we and EchoStar completed the Share Exchange pursuant to which certain assets that were transferred to EchoStar in the Spin-off were transferred back to us. The Share Exchange Agreement contains additional indemnification provisions between us and EchoStar for certain liabilities and legal proceedings.

Litigation

We are involved in a number of legal proceedings (including those described below) concerning matters arising in connection with the conduct of our business activities. Many of these proceedings are at preliminary stages, and many of these proceedings 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 or there is a reasonable possibility that a loss or an additional loss may have been incurred and to determine if accruals are appropriate. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of the possible loss or range of possible loss can be made.

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For certain cases described on the following pages, management is unable to 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; (iii) damages are unsupported and/or exaggerated; (iv) there is uncertainty as to the outcome of pending appeals or motions; (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. For these cases, however, management does not believe, based on currently available information, that the outcomes of these proceedings will have a material adverse effect on our financial condition, though the outcomes could be material to our operating results for any particular period, depending, in part, upon the operating results for such period.

Blue Spike, LLC

On July 6, 2018, Blue Spike, LLC filed a complaint against us and our wholly-owned subsidiaries DISH Network L.L.C. and Dish Network Service L.L.C. in the United States District Court for the Eastern District of Texas. The complaint alleges infringement of Reissued United States Patent RE44,222E1 (the "222 patent"), entitled "Methods, systems and devices for packet watermarking and efficient provisioning of bandwidth"; Reissued United States Patent RE44,307 (the "307 patent"), entitled "Methods, systems and devices for packet watermarking and efficient provisioning of bandwidth"; and United States Patent Nos. 7,287,275B2 (the "275 patent"), entitled "Methods, systems and devices for packet watermarking and efficient provisioning of bandwidth"; 8,473,746 (the "746 patent"), entitled "Methods, systems and devices for packet watermarking and efficient provisioning of bandwidth"; 8,224,705 (the "705 patent"), entitled "Methods, systems and devices for packet watermarking and efficient provisioning of bandwidth"; 7,475,246 (the "246 patent"), entitled "Secure personal content server"; 8,739,295B2 (the "295 patent"), entitled "Secure personal content server"; 9,021,602 (the "602 patent"), entitled "Data Protection and Device"; 9,104,842 (the "842 patent"), entitled "Data Protection and Device"; 9,934,408 (the "408 patent"), entitled "Secure personal content server"; 7,159,116B2 (the "116 patent"), entitled "Systems, methods and devices for trusted transactions"; and 8,538,011B2 (the "011 patent"), entitled "Systems, methods and devices for trusted transactions." On September 5, 2018, pursuant to a joint motion of the parties, the Court ordered the case transferred to the United States District Court for the District of Delaware. In a First Amended Complaint filed on October 12, 2018, Blue Spike dropped its claims for infringement of the 222 patent, the 307 patent, the 275 patent, the 705 patent, and the 746 patent. On November 11, 2018, Blue Spike, LLC dismissed its complaint.

On January 28, 2019, Blue Spike, LLC, along with Blue Spike International, Ltd. and Wistaria Trading Ltd., filed a new action against us and our wholly-owned subsidiaries DISH Network L.L.C. and Dish Network Service L.L.C. in the United States District Court for the District of Delaware. The complaint alleges infringement of the 246 patent, the 295 patent, the 408 patent, the 116 patent, the 011 patent, the 602 patent and the 842 patent, all of which were asserted in the prior action.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages. Each of the plaintiffs is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

ClearPlay, Inc.

On March 13, 2014, ClearPlay, Inc. ("ClearPlay") filed a complaint against us, our wholly-owned subsidiary DISH Network L.L.C., EchoStar, and its then wholly-owned subsidiary EchoStar Technologies L.L.C., in the United States District Court for the District of Utah. The complaint alleges infringement of United States Patent Nos. 6,898,799 (the "799 patent"), entitled "Multimedia Content Navigation and Playback"; 7,526,784 (the "784 patent"), entitled "Delivery of Navigation Data for Playback of Audio and Video Content"; 7,543,318 (the "318 patent"), entitled "Delivery of Navigation Data for Playback of Audio and Video Content"; 7,577,970 (the "970 patent"), entitled "Multimedia Content Navigation and Playback"; and 8,117,282 (the "282 patent"), entitled "Media Player Configured to Receive Playback Filters From Alternative Storage Mediums."

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ClearPlay alleges that the AutoHop™ feature of our Hopper set-top box infringes the asserted patents. On February 11, 2015, the case was stayed pending various third-party challenges before the United States Patent and Trademark Office regarding the validity of certain of the patents asserted in the action. In those third-party challenges, the United States Patent and Trademark Office found that all claims of the 282 patent are unpatentable, and that certain claims of the 784 patent and 318 patent are unpatentable. ClearPlay appealed as to the 784 patent and the 318 patent, and on August 23, 2016, the United States Court of Appeals for the Federal Circuit affirmed the findings of the United States Patent and Trademark Office. On October 31, 2016, the stay was lifted. No trial date has been set.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Contemporary Display LLC

On June 4, 2018, Contemporary Display LLC (“Contemporary”) filed a complaint against us in the United States District Court for the Western District of Texas. The complaint alleges infringement of United States Patent No. 6,028,643 (the “643 patent”), entitled “Multiple-Screen Video Adapter with Television Tuner”; United States Patent No. 6,429,903 (the “903 patent”), entitled “Video Adapter for Supporting at Least One Television Monitor”; United States Patent No. 6,492,997 (the “997 patent”), entitled “Method and System for Providing Selectable Programming in a Multi-Screen Mode”; United States Patent No. 7,500,202 (the “202 patent”), “Remote Control for Navigating Through Content in an Organized and Categorized Fashion”; and United States Patent No. 7,809,842 (the “842 patent”), entitled “Transferring Sessions Between Devices.” The 643 patent and the 903 patent are directed to video adapters for use with multiple displays. The 997 patent is directed to a system for presenting multiple video programs on a display device simultaneously. The 202 patent is directed to a remote control for interacting with a set-top box having programmable features and “operational controls” on at least three sides of the remote control. The 842 patent is directed to a system for managing online communication sessions between multiple devices. Contemporary is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

In a First Amended Complaint filed on August 6, 2018, Contemporary added our wholly owned subsidiary DISH Network L.L.C. as a defendant. In a Second Amended Complaint filed on October 9, 2018, Contemporary named only our wholly owned subsidiary DISH Network L.L.C. as a defendant and dropped certain indirect infringement allegations.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Customedia Technologies, L.L.C.

On February 10, 2016, Customedia Technologies, L.L.C. ("Customedia") filed a complaint against us and our wholly-owned subsidiary DISH Network L.L.C. in the United States District Court for the Eastern District of Texas. The complaint alleges infringement of four patents: United States Patent No. 8,719,090 (the "090 patent"); United States Patent No. 9,053,494 (the "494 patent"); United States Patent No. 7,840,437 (the "437 patent"); and United States Patent No. 8,955,029 (the "029 patent"). Each patent is entitled "System for Data Management And On-Demand Rental And Purchase Of Digital Data Products." Customedia alleges infringement in connection with our addressable advertising services, our DISH Anywhere feature, and our Pay-Per-View and video-on-demand offerings. Customedia is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

In December 2016 and January 2017, DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of the asserted claims of each of the asserted patents. On June 12, 2017, the United States Patent and Trademark Office agreed to institute proceedings on our petitions challenging the 090 patent and the 437 patent; on July 18, 2017, it agreed to institute proceedings on our petitions challenging the 029 patent; and on July 28, 2017, it agreed to institute proceedings on our petitions challenging the 494 patent.

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These instituted proceedings cover all asserted claims of each of the asserted patents. The litigation in the District Court has been stayed since August 8, 2017 pending resolution of the proceedings at the United States Patent and Trademark Office.

Pursuant to an agreement between the parties, on December 20, 2017, DISH Network L.L.C. dismissed its petitions challenging the 029 patent in the United States Patent and Trademark Office, and on January 9, 2018, the parties dismissed their claims, counterclaims and defenses as to that patent in the litigation. On March 5, 2018, the United States Patent and Trademark Office conducted a trial on the remaining petitions. On June 11, 2018, the United States Patent and Trademark Office issued final written decisions on DISH Network L.L.C.'s petitions challenging the 090 patent and it invalidated all of the asserted claims. On July 25, 2018, the United States Patent and Trademark Office issued final written decisions on DISH Network L.L.C.'s petitions challenging the 437 patent and the 494 patent and it invalidated all of the asserted claims. Customedia has filed notices of appeal from all of the final written decisions adverse to it, and DISH Network L.L.C. has cross-appealed to the extent that its petitions were not successful. On January 30, 2019, DISH Network L.L.C. dismissed its cross-appeals related to the 090 patent.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Dragon Intellectual Property, LLC

On December 20, 2013, Dragon Intellectual Property, LLC ("Dragon IP") filed complaints against our wholly-owned subsidiary DISH Network L.L.C., as well as Apple Inc.; AT&T, Inc.; Charter Communications, Inc.; Comcast Corp.; Cox Communications, Inc.; DirecTV; Sirius XM Radio Inc.; Time Warner Cable Inc. and Verizon Communications, Inc., in the United States District Court for the District of Delaware, alleging infringement of United States Patent No. 5,930,444 (the "444 patent"), which is entitled "Simultaneous Recording and Playback Apparatus." Dragon IP alleges that various of our DVR receivers infringe the 444 patent. Dragon IP is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein. On December 23, 2014, DISH Network L.L.C. filed a petition before the United States Patent and Trademark Office challenging the validity of certain claims of the 444 patent. On April 10, 2015, the Court granted DISH Network L.L.C.'s motion to stay the action in light of DISH Network L.L.C.'s petition and certain other defendants' petitions pending before the United States Patent and Trademark Office challenging the validity of certain claims of the 444 patent. On July 17, 2015, the United States Patent and Trademark Office agreed to institute a proceeding on our petition. Pursuant to a stipulation between the parties, on April 27, 2016, the Court entered an order of non-infringement and judgment in favor of DISH Network

L.L.C. On June 15, 2016, the United States Patent and Trademark Office entered an order that the patent claims being asserted against DISH Network L.L.C. with respect to the 444 patent are unpatentable. On August 8, 2016, Dragon filed notices of appeal with respect to the Court's judgment and the United States Patent and Trademark Office's decision and, on October 5, 2017, the United States Court of Appeals for the Federal Circuit heard oral argument. On November 1, 2017, the United States Court of Appeals for the Federal Circuit affirmed the unpatentability of the 444 patent based on the petition filed in the United States Patent and Trademark Office by DISH Network L.L.C., and dismissed as moot the appeal of the order of non-infringement from the District Court.

On December 1, 2017, Dragon IP filed a petition for panel rehearing with the United States Court of Appeals for the Federal Circuit, which the Court of Appeals denied on January 31, 2018. On March 16, 2018, Dragon IP filed a petition asking the United States Supreme Court to hear a further appeal on the constitutionality of the procedure by which the United States Patent and Trademark Office invalidated the asserted claims of the 444 patent. That petition was dismissed on June 18, 2018. Dragon IP's case against DISH Network L.L.C. is now concluded.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Grecia

On March 27, 2015, William Grecia ("Grecia") filed a complaint against our wholly-owned subsidiary DISH Network L.L.C. in the United States District Court for the Northern District of Illinois, alleging infringement of United States Patent No. 8,533,860 (the "860 patent"), which is entitled "Personalized Digital Media Access System – PDMAS Part II." Grecia alleges that we violate the 860 patent in connection with our digital rights management. Grecia is the named inventor on the 860 patent. On June 22, 2015, the case was transferred to the United States District Court for the Northern District of California. On November 18, 2015, Grecia filed an amended complaint adding allegations that we infringe United States Patent No. 8,402,555 (the "555 patent"), which is entitled "Personalized Digital Media Access System (PDMAS)." Grecia is the named inventor on the 555 patent. Grecia alleges that we violate the 555 patent in connection with our digital rights management. Grecia dismissed his action with prejudice on February 3, 2016.

On February 3, 2016, Grecia filed a new complaint against our wholly-owned subsidiary DISH Network L.L.C. in the United States District Court for the Northern District of California, alleging infringement of United States Patent No. 8,887,308 (the "308 patent"), which is entitled "Digital Cloud Access – PDMAS Part III," on which Grecia is also the named inventor. Grecia alleges that we violate the 308 patent in connection with our DISH Anywhere feature. On July 29, 2016, DISH Network L.L.C. filed a petition before the United States Patent and Trademark Office challenging the validity of certain claims of the 308 patent. On January 19, 2017, the United States Patent and Trademark Office declined to institute a proceeding on our petition. The litigation in the District Court, which had been stayed since June 13, 2016 pending resolution of DISH Network L.L.C.'s petition to the United States Patent and Trademark Office, was further stayed on February 23, 2017 pending a claim construction order from the United States District Court for the Southern District of New York in a separate action in which Grecia is asserting the same patent. On September 4, 2018, the Court entered a scheduling order, effectively lifting the stay. On November 12, 2018, the parties filed a stipulation to dismiss the matter with prejudice. This matter is now concluded.

IPA Technologies Inc.

On December 9, 2016, IPA Technologies Inc. ("IPA") filed suit against us and our wholly-owned subsidiary DISH Network L.L.C. in the United States District Court for the District of Delaware. IPA alleges that our Voice Remote with Hopper 3 infringes United States Patent Number 6,742,021 (the "021 patent"), which is entitled "Navigating Network-based Electronic Information Using Spoken Input with Multimodal Error Feedback"; United States Patent Number 6,523,061 (the "061 patent"), which is entitled "System, Method, and Article of Manufacture for Agent-Based

Navigation in a Speech-Based Data Navigation System"; and United States Patent Number 6,757,718 (the "718 patent"), which is entitled "Mobile Navigation of Network-Based Electronic Information Using Spoken Input." IPA is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein. On December 20, 2017, we and DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of select claims of each of the asserted patents. On April 10, 2018, the litigation in the District of Delaware was dismissed with prejudice, and on April 23, 2018, DISH Network L.L.C.'s and our petitions before the United States Patent and Trademark Office were terminated. This matter is now concluded.

LightSquared/Harbinger Capital Partners LLC (LightSquared Bankruptcy)

As previously disclosed in our public filings, L-Band Acquisition, LLC ("LBAC"), our wholly-owned subsidiary, entered into a Plan Support Agreement (the "PSA") with certain senior secured lenders to LightSquared LP (the "LightSquared LP Lenders") on July 23, 2013, which contemplated the purchase by LBAC of substantially all of the assets of LightSquared LP and certain of its subsidiaries (the "LBAC Bid") that are debtors and debtors in possession in the LightSquared bankruptcy cases pending in the United States Bankruptcy Court for the Southern District of New York (the "Bankruptcy Court"), which cases are jointly administered under the caption In re LightSquared Inc., et. al., Case No. 12 12080 (SCC).

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Pursuant to the PSA, LBAC was entitled to terminate the PSA in certain circumstances, certain of which required three business days' written notice, including, without limitation, in the event that certain milestones specified in the PSA were not met. On January 7, 2014, LBAC delivered written notice of termination of the PSA to the LightSquared LP Lenders. As a result, the PSA terminated effective on January 10, 2014, and the LBAC Bid was withdrawn.

On August 6, 2013, Harbinger Capital Partners LLC and other affiliates of Harbinger (collectively, "Harbinger"), a shareholder of LightSquared Inc., filed an adversary proceeding against us, LBAC, EchoStar, Charles W. Ergen (our Chairman), SP Special Opportunities, LLC ("SPSO") (an entity controlled by Mr. Ergen), and certain other parties, in the Bankruptcy Court. Harbinger alleged, among other things, claims based on fraud, unfair competition, civil conspiracy and tortious interference with prospective economic advantage related to certain purchases of LightSquared secured debt by SPSO. Subsequently, LightSquared intervened to join in certain claims alleged against certain defendants other than us, LBAC and EchoStar.

On October 29, 2013, the Bankruptcy Court dismissed all of the claims in Harbinger's complaint in their entirety, but granted leave for LightSquared to file its own complaint in intervention. On November 15, 2013, LightSquared filed its complaint, which included various claims against us, EchoStar, Mr. Ergen and SPSO. On December 2, 2013, Harbinger filed an amended complaint, asserting various claims against SPSO. On December 12, 2013, the Bankruptcy Court dismissed several of the claims asserted by LightSquared and Harbinger. The surviving claims included, among others, LightSquared's claims against SPSO for declaratory relief, breach of contract and statutory disallowance; LightSquared's tortious interference claim against us, EchoStar and Mr. Ergen; and Harbinger's claim against SPSO for statutory disallowance. These claims proceeded to a non-jury trial on January 9, 2014. In its Post-Trial Findings of Fact and Conclusions of Law entered on June 10, 2014, the Bankruptcy Court rejected all claims against us and EchoStar, and it rejected some but not all claims against the other defendants. On July 7, 2015, the United States District Court for the Southern District of New York denied Harbinger's motion for an interlocutory appeal of certain Bankruptcy Court orders in the adversary proceeding.

We intend to vigorously defend any claims against us in this proceeding and cannot predict with any degree of certainty the outcome of this proceeding or determine the extent of any potential liability or damages.

Michael Heskiaoff, Marc Langenohl, and Rafael Mann

On July 10, 2015, Messrs. Michael Heskiaoff and Marc Langenohl, purportedly on behalf of themselves and all others similarly situated, filed suit against our subsidiary Sling Media, Inc. (now known as "Sling Media L.L.C.," which we acquired as a result of the completion of the Share Exchange on February 28, 2017) in the United States District Court for the Southern District of New York. The complaint alleges that Sling Media Inc.'s display of advertising to its customers violates a number of state statutes dealing with consumer deception. On September 25, 2015, the plaintiffs filed an amended complaint, and Mr. Rafael Mann, purportedly on behalf of himself and all others similarly situated, filed an additional complaint alleging similar causes of action. On November 16, 2015, the cases were consolidated. On August 12, 2016, the Court granted our motion to dismiss the consolidated case. On September 12, 2016, the plaintiffs moved the Court for leave to file an amended complaint, which we opposed. On March 22, 2017, the Court denied the plaintiffs' motion for leave to file an amended complaint and entered judgment in favor of Sling Media L.L.C. On April 17, 2017, the plaintiffs filed a notice of appeal to the United States Court of Appeals for the Second Circuit, which heard oral argument on November 7, 2017. On November 22, 2017, the United States Court of Appeals for the Second Circuit affirmed the trial court's judgment in favor of Sling Media L.L.C. This matter is now concluded.

Multimedia Content Management LLC

On July 25, 2018, Multimedia Content Management LLC ("Multimedia") filed a complaint against us in the United States District Court for the Western District of Texas. Multimedia alleges that we infringe United States Patent No. 8,799,468 (the "468 patent"), entitled "System for Regulating Access to and Distributing Content in a Network," and United States Patent No. 9,465,925 (the "925 patent"), entitled "System for Regulating Access to and Distributing Content in a Network," in connection with impulse pay per view content offerings on certain set-top boxes. Multimedia is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

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We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Realtime Data LLC and Realtime Adaptive Streaming LLC

On June 6, 2017, Realtime Data LLC d/b/a IXO ("Realtime") filed an amended complaint in the United States District Court for the Eastern District of Texas (the "Original Texas Action") against us; our wholly-owned subsidiaries DISH Network L.L.C., DISH Technologies L.L.C. (then known as EchoStar Technologies L.L.C.), Sling TV L.L.C. and Sling Media L.L.C.; EchoStar, and EchoStar's wholly-owned subsidiary HNS; and Arris Group, Inc. Realtime's initial complaint in the Original Texas Action, filed on February 14, 2017, had named only EchoStar and HNS as defendants.

The amended complaint in the Original Texas Action alleges infringement of United States Patent No. 8,717,204 (the "204 patent"), entitled "Methods for encoding and decoding data"; United States Patent No. 9,054,728 (the "728 patent"), entitled "Data compression systems and methods"; United States Patent No. 7,358,867 (the "867 patent"), entitled "Content independent data compression method and system"; United States Patent No. 8,502,707 (the "707 patent"), entitled "Data compression systems and methods"; United States Patent No. 8,275,897 (the "897 patent"), entitled "System and methods for accelerated data storage and retrieval"; United States Patent No. 8,867,610 (the "610 patent"), entitled "System and methods for video and audio data distribution"; United States Patent No. 8,934,535 (the "535 patent"), entitled "Systems and methods for video and audio data storage and distribution"; and United States Patent No. 8,553,759 (the "759 patent"), entitled "Bandwidth sensitive data compression and decompression." Realtime alleges that DISH, Sling TV, Sling Media and Arris streaming video products and services compliant with various versions of the H.264 video compression standard infringe the 897 patent, the 610 patent and the 535 patent, and that the data compression system in Hughes' products and services infringe the 204 patent, the 728 patent, the 867 patent, the 707 patent and the 759 patent.

On July 19, 2017, the Court severed Realtime's claims against us, DISH Network L.L.C., Sling TV L.L.C., Sling Media L.L.C. and Arris Group, Inc. (alleging infringement of the 897 patent, the 610 patent and the 535 patent) from the Original Texas Action into a separate action in the United States District Court for the Eastern District of Texas (the "Second Texas Action"). On August 31, 2017, Realtime dismissed the claims against us, Sling TV L.L.C., Sling Media Inc., and Sling Media L.L.C. from the Second Texas Action and refiled these claims (alleging infringement of

the 897 patent, the 610 patent and the 535 patent) against Sling TV L.L.C., Sling Media Inc., and Sling Media L.L.C. in a new action in the United States District Court for the District of Colorado (the "Colorado Action"). Also on August 31, 2017, Realtime dismissed EchoStar Technologies L.L.C. from the Original Texas Action, and on September 12, 2017, added it as a defendant in an amended complaint in the Second Texas Action. On November 6, 2017, Realtime filed a joint motion to dismiss the Second Texas Action without prejudice, which the Court entered on November 8, 2017.

On October 10, 2017, Realtime Adaptive Streaming LLC ("Realtime Adaptive Streaming") filed suit against our wholly-owned subsidiaries DISH Network L.L.C. and EchoStar Technologies L.L.C., as well as Arris Group, Inc., in a new action in the United States District Court for the Eastern District of Texas (the "Third Texas Action"), alleging infringement of the 610 patent and the 535 patent. Also on October 10, 2017, an amended complaint was filed in the Colorado Action, substituting Realtime Adaptive Streaming as the plaintiff instead of Realtime, and alleging infringement of only the 610 patent and the 535 patent, but not the 897 patent. On November 6, 2017, Realtime Adaptive Streaming filed a joint motion to dismiss the Third Texas Action without prejudice, which the court entered on November 8, 2017. Also on November 6, 2017, Realtime Adaptive Streaming filed a second amended complaint in the Colorado Action, adding our wholly-owned subsidiaries DISH Network L.L.C. and DISH Technologies L.L.C., as well as Arris Group, Inc., as defendants.

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As a result, neither we nor any of our subsidiaries is a defendant in the Original Texas Action; the Court has dismissed without prejudice the Second Texas Action and the Third Texas Action; and our wholly-owned subsidiaries DISH Network L.L.C., DISH Technologies L.L.C., Sling TV L.L.C. and Sling Media L.L.C. as well as Arris Group, Inc., are defendants in the Colorado Action, which now has Realtime Adaptive Streaming as the named plaintiff. The Court has set trial for December 16, 2019.

On July 3, 2018, Sling TV L.L.C., Sling Media L.L.C., DISH Network L.L.C., and DISH Technologies L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of each of the asserted patents. On January 31, 2019, the United States Patent and Trademark Office agreed to institute proceedings on our petitions challenging all asserted claims of each of the asserted patents.

Realtime Adaptive Streaming is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Rothschild Broadcast Distribution Systems, LLC

On August 2, 2018, Rothschild Broadcast Distribution Systems, LLC (“Rothschild”) filed a complaint against us in the United States District Court for the Eastern District of Texas. The complaint, which accuses the DISH Anywhere feature, alleges infringement of United States Patent 8,856,221 (the “221 patent”), entitled “System and Method for Storing Broadcast Content in a Cloud-based Computing Environment.” Rothschild, an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein, has filed more than 35 patent infringement cases since 2015. On October 10, 2018, the Court granted Rothschild’s motion to dismiss the case without prejudice. This matter is now concluded.

Telemarketing Litigation

On March 25, 2009, our wholly-owned subsidiary DISH Network L.L.C. was sued in a civil action by the United States Attorney General and several states in the United States District Court for the Central District of Illinois (the "FTC Action"), alleging violations of the Telephone Consumer Protection Act ("TCPA") and the Telemarketing Sales Rule ("TSR"), as well as analogous state statutes and state consumer protection laws. The plaintiffs alleged that we, directly and through certain independent third-party retailers and their affiliates, committed certain telemarketing violations. On December 23, 2013, the plaintiffs filed a motion for summary judgment, which indicated for the first time that the state plaintiffs were seeking civil penalties and damages of approximately $270 million and that the federal plaintiff was seeking an unspecified amount of civil penalties (which could substantially exceed the civil penalties and damages being sought by the state plaintiffs). The plaintiffs were also seeking injunctive relief that if granted would, among other things, enjoin DISH Network L.L.C., whether acting directly or indirectly through authorized telemarketers or independent third-party retailers, from placing any outbound telemarketing calls to market or promote its goods or services for five years, and enjoin DISH Network L.L.C. from accepting activations or sales from certain existing independent third-party retailers and from certain new independent third-party retailers, except under certain circumstances. We also filed a motion for summary judgment, seeking dismissal of all claims. On December 12, 2014, the Court issued its opinion with respect to the parties' summary judgment motions. The Court found that DISH Network L.L.C. was entitled to partial summary judgment with respect to one claim in the action. In addition, the Court found that the plaintiffs were entitled to partial summary judgment with respect to ten claims in the action, which included, among other things, findings by the Court establishing DISH Network L.L.C.'s liability for a substantial amount of the alleged outbound telemarketing calls by DISH Network L.L.C. and certain of its independent third-party retailers that were the subject of the plaintiffs' motion. The Court did not issue any injunctive relief and did not make any determination on civil penalties or damages, ruling instead that the scope of any injunctive relief and the amount of any civil penalties or damages were questions for trial.

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In pre-trial disclosures, the federal plaintiff indicated that it intended to seek up to $900 million in alleged civil penalties, and the state plaintiffs indicated that they intended to seek as much as $23.5 billion in alleged civil penalties and damages. The plaintiffs also modified their request for injunctive relief. Their requested injunction, if granted, would have enjoined DISH Network L.L.C. from placing outbound telemarketing calls unless and until: (i) DISH Network L.L.C. hired a third-party consulting organization to perform a review of its call center operations; (ii) such third-party consulting organization submitted a telemarketing compliance plan to the Court and the federal plaintiff; (iii) the Court held a hearing on the adequacy of the plan; (iv) if the Court approved the plan, DISH Network L.L.C. implemented the plan and verified to the Court that it had implemented the plan; and (v) the Court issued an order permitting DISH Network L.L.C. to resume placing outbound telemarketing calls. The plaintiffs' modified request for injunctive relief, if granted, would have also enjoined DISH Network L.L.C. from accepting customer orders solicited by certain independent third-party retailers unless and until a similar third-party review and Court approval process was followed with respect to the telemarketing activities of its independent third-party retailer base to ensure compliance with the TSR.

The first phase of the bench trial took place January 19, 2016 through February 11, 2016. In closing briefs, the federal plaintiff indicated that it still was seeking $900 million in alleged civil penalties; the California state plaintiff indicated that it was seeking $100 million in alleged civil penalties and damages for its state law claims (in addition to any amounts sought on its federal law claims); the Ohio state plaintiff indicated that it was seeking approximately $10 million in alleged civil penalties and damages for its state law claims (in addition to any amounts sought on its federal law claims); and the Illinois and North Carolina state plaintiffs did not state the specific alleged civil penalties and damages that they were seeking; but the state plaintiffs took the general position that any damages award less than $1.0 billion (presumably for both federal and state law claims) would not raise constitutional concerns. Under the Eighth Amendment of the United States Constitution, excessive fines may not be imposed.

On October 3, 2016, the plaintiffs further modified their request for injunctive relief, and were seeking, among other things, to enjoin DISH Network L.L.C., whether acting directly or indirectly through authorized telemarketers or independent third-party retailers, from placing any outbound telemarketing calls to market or promote its goods or services for five years, and enjoin DISH Network L.L.C. from accepting activations or sales from some or all existing independent third-party retailers. The second phase of the bench trial, which commenced on October 25, 2016 and concluded on November 2, 2016, covered the plaintiffs' requested injunctive relief, as well as certain evidence related to the state plaintiffs' claims.

On June 5, 2017, the Court issued Findings of Fact and Conclusions of Law and entered Judgment ordering DISH Network L.L.C. to pay an aggregate amount of $280 million to the federal and state plaintiffs. The Court also issued a Permanent Injunction (the "Injunction") against DISH Network L.L.C. that imposes certain ongoing compliance requirements on DISH Network L.L.C., which include, among other things: (i) the retention of a telemarketing-compliance expert to prepare a plan to ensure that DISH Network L.L.C. and certain independent

third-party retailers will continue to comply with telemarketing laws and the Injunction; (ii) certain telemarketing records retention and production requirements; and (iii) certain compliance reporting and monitoring requirements. In addition to the compliance requirements under the Injunction, within ninety (90) days after the effective date of the Injunction, DISH Network L.L.C. is required to demonstrate that it and certain independent third-party retailers are in compliance with the Safe Harbor Provisions of the TSR and TCPA and have made no prerecorded telemarketing calls during the five (5) years prior to the effective date of the Injunction (collectively, the "Demonstration Requirements"). If DISH Network L.L.C. fails to prove that it meets the Demonstration Requirements, it will be barred from conducting any outbound telemarketing for two (2) years. If DISH Network L.L.C. fails to prove that a particular independent third-party retailer meets the Demonstration Requirements, DISH Network L.L.C. will be barred from accepting orders from that independent third-party retailer for two (2) years. On July 3, 2017, DISH Network L.L.C. filed two motions with the Court: (1) to alter or amend the Judgment or in the alternative to amend the Findings of Fact and Conclusions of Law; and (2) to clarify, alter and amend the Injunction. On August 10, 2017, the Court: (a) denied the motion to alter or amend the Judgment or in the alternative to amend the Findings of Fact and Conclusions of Law; and (b) allowed, in part, the motion to clarify, alter and amend the Injunction, and entered an Amended Permanent Injunction (the "Amended Injunction").

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Among other things, the Amended Injunction provided DISH Network L.L.C a thirty (30) day extension to meet the Demonstration Requirements, expanded the exclusion of certain independent third-party retailers from the Demonstration Requirements, and clarified that, with regard to independent third-party retailers, the Amended Injunction only applied to their telemarketing of DISH TV goods and services. On October 10, 2017, DISH Network L.L.C. filed a notice of appeal to the United States Court of Appeals for the Seventh Circuit, which heard oral argument on September 17, 2018.

During the second quarter 2017, we recorded $255 million of "Litigation expense" related to the FTC Action on our Consolidated Statements of Operations and Comprehensive Income (Loss). We recorded $25 million of "Litigation expense" related to the FTC Action during periods prior to 2017. Our total accrual at December 31, 2018 and 2017 related to the FTC Action was $280 million and is included in "Other accrued expenses" on our Consolidated Balance Sheets. Any eventual payments made with respect to the FTC Action may not be deductible for tax purposes, which had a negative impact on our effective tax rate for the year ended December 31, 2017. The tax deductibility of any eventual payments made with respect to the FTC Action may change, based upon, among other things, further developments in the FTC Action, including final adjudication of the FTC Action.

We may also from time to time be subject to private civil litigation alleging telemarketing violations. For example, a portion of the alleged telemarketing violations by an independent third-party retailer at issue in the FTC Action are also the subject of a certified class action filed against DISH Network L.L.C. in the United States District Court for the Middle District of North Carolina (the "Krakauer Action"). Following a five-day trial, on January 19, 2017, a jury in that case found that the independent third-party retailer was acting as DISH Network L.L.C.'s agent when it made the 51,119 calls at issue in that case, and that class members are eligible to recover $400 in damages for each call made in violation of the TCPA. On March 7, 2017, DISH Network L.L.C. filed motions with the Court for judgment as a matter of law and, in the alternative, for a new trial, which the Court denied on May 16, 2017. On May 22, 2017, the Court ruled that the violations were willful and knowing, and trebled the damages award to $1,200 for each call made in violation of TCPA. On April 5, 2018, the Court entered a $61 million judgment in favor of the class. On May 4, 2018, DISH Network L.L.C. filed a notice of appeal to the United States Court of Appeals for the Fourth Circuit. During the second quarter 2017, we recorded $41 million of "Litigation expense" related to the Krakauer Action on our Consolidated Statements of Operations and Comprehensive Income (Loss). We recorded $20 million of "Litigation expense" related to the Krakauer Action during the fourth quarter 2016. Our total accrual related to the Krakauer Action at December 31, 2018 and 2017 was $61 million and is included in "Other accrued expenses" on our Consolidated Balance Sheets.

We intend to vigorously defend these cases. We cannot predict with any degree of certainty the outcome of these suits.

Telemarketing Shareholder Derivative Litigation

On October 19, 2017, Plumbers Local Union No. 519 Pension Trust Fund ("Plumbers Local 519"), a purported shareholder of the Company, filed a putative shareholder derivative action in the District Court for Clark County, Nevada alleging, among other things, breach of fiduciary duty claims against the following current and former members of the Company's Board of Directors: Charles W. Ergen; James DeFranco; Cantey M. Ergen; Steven R. Goodbarn; David K. Moskowitz; Tom A. Ortolf; Carl E. Vogel; George R. Brokaw; and Gary S. Howard (collectively, the "Director Defendants"). In its complaint, Plumbers Local 519 contends that, by virtue of their alleged failure to appropriately ensure the Company's compliance with telemarketing laws, the Director Defendants exposed the Company to liability for telemarketing violations, including those in the Krakauer Action. It also contends that the Director Defendants caused the Company to pay improper compensation and benefits to themselves and others who allegedly breached their fiduciary duties to the Company. Plumbers Local 519 alleges causes of action for breach of fiduciary duties of loyalty and good faith, gross mismanagement, abuse of control, corporate waste and unjust enrichment. Plumbers Local 519 is seeking an unspecified amount of damages.

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On November 13, 2017, City of Sterling Heights Police and Fire Retirement System ("Sterling Heights"), a purported shareholder of the Company, filed a putative shareholder derivative action in the District Court for Clark County, Nevada. Sterling Heights makes substantially the same allegations as Plumbers Union 519, and alleges causes of action against the Director Defendants for breach of fiduciary duty, waste of corporate assets and unjust enrichment. Sterling Heights is seeking an unspecified amount of damages. Pursuant to a stipulation of the parties, on January 4, 2018, the District Court agreed to consolidate the Sterling Heights action with the Plumbers Local 519 action, and on January 12, 2018, the plaintiffs filed an amended consolidated complaint that largely duplicates the original Plumbers Local 519 complaint. Our Board of Directors has established a Special Litigation Committee to review the factual allegations and legal claims in this action. On May 15, 2018, the District Court granted the Special Litigation Committee's motion to stay the case pending its investigation. The Special Litigation Committee's report was filed on November 27, 2018, and recommended that the Company not pursue the claims asserted by the derivative plaintiffs. On December 20, 2018, the Special Litigation Committee filed a motion for summary judgment seeking deferral to its determination that the claims should be dismissed.

We cannot predict with any degree of certainty the outcome of these suits or determine the extent of any potential liability or damages.

TQ Delta, LLC

On July 17, 2015, TQ Delta, LLC ("TQ Delta") filed a complaint against us and our wholly-owned subsidiaries DISH DBS Corporation and DISH Network L.L.C. in the United States District Court for the District of Delaware. The Complaint alleges infringement of United States Patent No. 6,961,369 (the "369 patent"), which is entitled "System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System"; United States Patent No. 8,718,158 (the "158 patent"), which is entitled "System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System"; United States Patent No. 9,014,243 (the "243 patent"), which is entitled "System and Method for Scrambling Using a Bit Scrambler and a Phase Scrambler"; United States Patent No. 7,835,430 (the "430 patent"), which is entitled "Multicarrier Modulation Messaging for Frequency Domain Received Idle Channel Noise Information"; United States Patent No. 8,238,412 (the "412 patent"), which is entitled "Multicarrier Modulation Messaging for Power Level per Subchannel Information"; United States Patent No. 8,432,956 (the "956 patent"), which is entitled "Multicarrier Modulation Messaging for Power Level per Subchannel Information"; and United States Patent No. 8,611,404 (the "404 patent"), which is entitled "Multicarrier Transmission System with Low Power Sleep Mode and Rapid-On Capability." On September 9, 2015, TQ Delta filed a first amended complaint that added allegations of infringement of United States Patent No. 9,094,268 (the "268 patent"), which is entitled "Multicarrier Transmission System With Low Power Sleep Mode and Rapid-On Capability." On May 16, 2016, TQ Delta filed a second amended complaint that added EchoStar Corporation and its then wholly-owned subsidiary EchoStar Technologies L.L.C. as defendants. TQ Delta alleges that our satellite TV service, Internet service, set-top boxes, gateways, routers, modems, adapters and networks that operate in accordance with one or more Multimedia over Coax Alliance Standards infringe

the asserted patents. TQ Delta has filed actions in the same court alleging infringement of the same patents against Comcast Corp., Cox Communications, Inc., DirecTV, Time Warner Cable Inc. and Verizon Communications, Inc. TQ Delta is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

On July 14, 2016, TQ Delta stipulated to dismiss with prejudice all claims related to the 369 patent and the 956 patent. On July 20, 2016, we filed petitions with the United States Patent and Trademark Office challenging the validity of all of the patent claims of the 404 patent and the 268 patent that have been asserted against us. Third parties have filed petitions with the United States Patent and Trademark Office challenging the validity of all of the patent claims that have been asserted against us in the action. On November 4, 2016, the United States Patent and Trademark Office agreed to institute proceedings on the third-party petitions related to the 158 patent, the 243 patent, the 412 patent and the 430 patent. On December 20, 2016, pursuant to a stipulation of the parties, the Court stayed the case until the resolution of all petitions to the United States Patent and Trademark Office challenging the validity of all of the patent claims at issue. On January 19, 2017, the United States Patent and Trademark Office granted our motions to join the instituted petitions on the 430 and 158 patents.

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DISH NETWORK CORPORATION

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On February 9, 2017, the United States Patent and Trademark Office agreed to institute proceedings on our petition related to the 404 patent, and on February 13, 2017, the United States Patent and Trademark Office agreed to institute proceedings on our petition related to the 268 patent. On February 27, 2017, the United States Patent and Trademark Office granted our motions to join the instituted petitions on the 243 and 412 patents. On October 26, 2017, the United States Patent and Trademark Office issued final written decisions on the petitions challenging the 158 patent, the 243 patent, the 412 patent and the 430 patent, and it invalidated all of the asserted claims of those patents. On February 7, 2018, the United States Patent and Trademark Office issued final written decisions on the petitions challenging the 404 patent, and it invalidated all of the asserted claims of that patent on the basis of our petition. On February 10, 2018, the United States Patent and Trademark Office issued a final written decision on our petition challenging the 268 patent, and it invalidated all of the asserted claims. On March 12, 2018, the United States Patent and Trademark Office issued a final written decision on a third-party petition challenging the 268 patent, and it invalidated all of the asserted claims. All asserted claims have now been invalidated by the United States Patent and Trademark Office. TQ Delta has filed notices of appeal from the nine final written decisions adverse to it.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Turner Network Sales

On October 6, 2017, Turner Network Sales, Inc. (“Turner”) filed a complaint against our wholly-owned subsidiary DISH Network L.L.C. in the United States District Court for the Southern District of New York. The operative First Amended Complaint alleges that DISH Network L.L.C. improperly calculated and withheld licensing fees owing to Turner in connection with its carriage of CNN and other networks. Turner claims damages of $183 million. On December 14, 2017, DISH Network L.L.C. filed its operative first amended counterclaims against Turner. In the counterclaims, DISH Network L.L.C. seeks a declaratory judgment that it properly calculated the licensing fees owed to Turner for carriage of CNN, and also alleges claims for unrelated breaches of the parties’ affiliation agreement.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Uniloc

On January 31, 2019, Uniloc 2017 LLC ("Uniloc") filed a complaint against our wholly owned subsidiary Sling TV L.L.C. in the United States District Court for the District of Colorado. The Complaint alleges infringement of United States Patent No. 6,519,005 (the 005 patent), which is entitled "Method of Concurrent Multiple-Mode Motion Estimation for Digital Video"; United States Patent No. 6,895,118 (the 118 patent), which is entitled "Method of Coding Digital Image Based on Error Concealment"; United States Patent No. 9,721,273 (the 273 patent), which is entitled "System and Method for Aggregating and Providing Audio and Visual Presentations Via a Computer Network"); and United States Patent No. 8,407,609 (the 609 patent), which is entitled "System and Method for Providing and Tracking the Provision of Audio and Visual Presentations Via a Computer Network." Uniloc is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

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Vermont National Telephone Company

On September 23, 2016, the United States District Court for the District of Columbia unsealed a qui tam complaint that was filed by Vermont National Telephone Company ("Vermont National") against us; our wholly-owned subsidiaries, American AWS-3 Wireless I L.L.C., American II, American III, and DISH Wireless Holding L.L.C.; Charles W. Ergen (our Chairman) and Cantey M. Ergen (a member of our board of directors); Northstar Wireless; Northstar Spectrum; Northstar Manager; SNR Wireless; SNR HoldCo; SNR Management; and certain other parties. The complaint was unsealed after the United States Department of Justice notified the Court that it had declined to intervene in the action. The complaint is a civil action that was filed under seal on May 13, 2015 by Vermont National, which participated in the AWS-3 Auction through its wholly-owned subsidiary, VTel Wireless. The complaint alleges violations of the federal civil False Claims Act (the "FCA") based on, among other things, allegations that Northstar Wireless and SNR Wireless falsely claimed bidding credits of 25% in the AWS-3 Auction when they were allegedly under the de facto control of DISH Network and, therefore, were not entitled to the bidding credits as designated entities under applicable FCC rules. Vermont National seeks to recover on behalf of the United States government approximately $10 billion, which reflects the $3.3 billion in bidding credits that Northstar Wireless and SNR Wireless claimed in the AWS-3 Auction, trebled under the FCA. Vermont National also seeks civil penalties of not less than $5,500 and not more than $11,000 for each violation of the FCA. On March 2, 2017, the United States District Court for the District of Columbia entered a stay of the litigation until such time as the United States Court of Appeals for the District of Columbia (the "D.C. Circuit") issued its opinion in SNR Wireless LicenseCo, LLC, et al. v. F.C.C. The D.C. Circuit issued its opinion on August 29, 2017 and remanded the matter to the FCC for further proceedings. See "Commitments – DISH Network Non-Controlling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses" above for further information. Thereafter, the Court maintained the stay until it was lifted on October 26, 2018. On February 11, 2019, the Court granted Vermont National's unopposed motion for leave to file an amended complaint.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of this proceeding or determine the extent of any potential liability or damages.

Waste Disposal Inquiry

The California Attorney General and the Alameda County (California) District Attorney are investigating whether certain of our waste disposal policies, procedures and practices are in violation of the California Business and Professions Code and the California Health and Safety Code. We expect that these entities will seek injunctive and monetary relief. The investigation appears to be part of a broader effort to investigate waste handling and disposal processes of a number of industries. While we are unable to predict the outcome of this investigation, we do not

believe that the outcome will have a material effect on our results of operations, financial condition or cash flows.

Other

In addition to the above actions, we are subject to various other legal proceedings and claims that arise in the ordinary course of business, including, among other things, disputes with programmers regarding fees. In our opinion, the amount of ultimate liability with respect to any of these actions is unlikely to materially affect our financial condition, results of operations or liquidity, though the outcomes could be material to our operating results for any particular period, depending, in part, upon the operating results for such period.

15. Segment Reporting

Operating segments are components of an enterprise for which separate financial information is available and regularly evaluated by the chief operating decision maker(s) of an enterprise. Operating income is the primary measure used by our chief operating decision maker to evaluate segment operating performance. We currently operate two primary business segments: (1) Pay-TV; and (2) Wireless. See Note 1 for further information.

All other and eliminations primarily include intersegment eliminations related to intercompany debt and the related interest income and interest expense, which are eliminated in consolidation.

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DISH NETWORK CORPORATION

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The total assets, revenue and operating income by segment were as follows:

	As of December 31,	
	2018	2017
	(In thousands)	
Total assets:		
Pay-TV	$ 28,981,608	$ 28,353,581
Wireless	24,433,458	23,377,088
Eliminations	(22,828,054)	(21,956,903)
Total assets	$ 30,587,012	$ 29,773,766

	Pay-TV	Wireless (1)	All Other & Eliminations	Consolidated Total
	(In thousands)			
Year Ended December 31, 2018				
Total revenue	$ 13,621,198	$ 580	$ (476)	$ 13,621,302
Depreciation and amortization	698,336	13,688	—	712,024
Operating income (loss)	2,187,675	(40,054)	—	2,147,621
Interest income	1,495,371	—	(1,450,612)	44,759
Interest expense, net of amounts capitalized	(1,013,062)	(452,556)	1,450,612	(15,006)
Other, net	8,957	2,844	—	11,801
Income tax (provision) benefit, net	(650,858)	117,174	—	(533,684)
Net income (loss)	2,028,083	(372,592)	—	1,655,491
Year Ended December 31, 2017				
Total revenue	$ 14,391,375	$ —	$ —	$ 14,391,375
Depreciation and amortization	788,237	29,327	—	817,564
Operating income (loss)	1,759,130	(191,365)	—	1,567,765
Interest income	1,306,298	—	(1,265,292)	41,006
Interest expense, net of amounts capitalized	(1,068,231)	(260,233)	1,265,292	(63,172)
Other, net	104,482	6	—	104,488
Income tax (provision) benefit, net	(473,370)	988,690	—	515,320

Net income (loss)	1,628,309	537,098	—	2,165,407
Year Ended December 31, 2016				
Total revenue	$ 15,212,302	$ —	$ —	$ 15,212,302
Depreciation and amortization	877,342	43,860	—	921,202
Operating income (loss)	2,383,388	(64,127)	—	2,319,261
Interest income	1,006,243	3,745	(978,820)	31,168
Interest expense, net of amounts capitalized	(876,375)	(155,586)	978,820	(53,141)
Other, net	32,867	86,448	—	119,315
Income tax (provision) benefit, net	(934,024)	68,206	—	(865,818)
Net income (loss)	1,612,099	(61,314)	—	1,550,785

(1) Operating income (loss) for the wireless segment was positively impacted for the year ended December 31, 2018 by a decrease in depreciation expense associated with the T1 satellite, which was impaired during 2017.

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Geographic Information. Revenue is attributed to geographic regions based upon the location where the goods and services are provided. All subscriber-related revenue was derived from the United States. Substantially all of our long-lived assets reside in the United States.

The following table summarizes revenue by geographic region:

	For the Years Ended December 31,		
Revenue:	2018	2017	2016
	(In thousands)		
United States	$ 13,578,254	$ 14,351,558	$ 15,111,832
Canada and Mexico	43,048	39,817	100,470
Total revenue	$ 13,621,302	$ 14,391,375	$ 15,212,302

The revenue from external customers disaggregated by major revenue source was as follows:

	For the Years Ended December 31,		
Category:	2018	2017	2016
	(In thousands)		
Pay-TV video and related revenue	$ 13,197,994	$ 13,877,196	$ 14,576,699
Broadband revenue	258,094	383,216	457,240
Equipment sales and other revenue	165,214	130,963	178,363
Total	$ 13,621,302	$ 14,391,375	$ 15,212,302

16. Contract Balances

Our valuation and qualifying accounts as of December 31, 2018, 2017 and 2016 were as follows:

Allowance for doubtful accounts	Deductions

	Balance at Beginning of Year	Charged to Costs and Expenses		Balance at End of Year
	(In thousands)			
For the years ended:				
December 31, 2018	$ 15,511	$ 98,575	$ (97,120)	$ 16,966
December 31, 2017	$ 18,399	$ 124,126	$ (127,014)	$ 15,511
December 31, 2016	$ 22,965	$ 153,792	$ (158,358)	$ 18,399

Deferred revenue related to contracts with our customers is recorded in “Deferred revenue and other” and “Long-term deferred revenue and other long-term liabilities” on our Consolidated Balance Sheets. Changes in deferred revenue related to contracts with our customers were as follows:

	Contract Liabilities
	(In thousands)
Balance as of December 31, 2017	$ 699,597
Recognition of unearned revenue	(6,855,912)
Deferral of revenue	6,791,333
Balance as of December 31, 2018	$ 635,018

We apply a practical expedient and do not disclose the value of the remaining performance obligations for contracts that are less than one year in duration, which represent a substantial majority of our revenue. As such, the amount of revenue related to unsatisfied performance obligations is not necessarily indicative of our future revenue.

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17. Quarterly Financial Data (Unaudited)

Our quarterly results of operations are summarized as follows:

	For the Three Months Ended			
	March 31	June 30	September 30	December 31
	(In thousands, except per share data)			
Year ended December 31, 2018:				
Total revenue	$ 3,458,487	$ 3,460,845	$ 3,395,141	$ 3,306,829
Operating income (loss)	529,506	572,660	562,703	482,752
Net income (loss)	385,321	460,286	452,598	357,286
Net income (loss) attributable to DISH Network	367,560	438,717	431,734	337,080
Basic net income (loss) per share attributable to DISH Network	$ 0.79	$ 0.94	$ 0.92	$ 0.72
Diluted net income (loss) per share attributable to DISH Network	$ 0.70	$ 0.83	$ 0.82	$ 0.64
Year ended December 31, 2017:				
Total revenue	$ 3,680,361	$ 3,643,632	$ 3,583,454	$ 3,483,928
Operating income (loss)	607,320	252,103	449,051	259,291
Net income (loss)	390,075	58,762	315,265	1,401,305
Net income (loss) attributable to DISH Network	375,715	40,116	297,375	1,385,483
Basic net income (loss) per share attributable to DISH Network	$ 0.81	$ 0.09	$ 0.64	$ 2.97
Diluted net income (loss) per share attributable to DISH Network	$ 0.76	$ 0.09	$ 0.57	$ 2.64

18. Related Party Transactions

Related Party Transactions with EchoStar

Following the Spin-off, we and EchoStar have operated as separate publicly-traded companies and neither entity has any ownership interest in the other. However, a substantial majority of the voting power of the shares of both companies is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established by Mr. Ergen for the benefit of his family.

In connection with and following the Spin-off, we and EchoStar have entered into certain agreements pursuant to which we obtain certain products, services and rights from EchoStar, EchoStar obtains certain products, services and rights from us, and we and EchoStar have indemnified each other against certain liabilities arising from our respective businesses. In connection with the Share Exchange, we and EchoStar and certain of their subsidiaries entered into certain agreements covering, among other things, tax matters, employee matters, intellectual property matters and the provision of transitional services. In addition, certain agreements that we had with EchoStar have terminated, and we entered into certain new agreements with EchoStar. As the Share Exchange was a transaction between entities that are under common control, accounting rules require that our Consolidated Financial Statements include the results of the Transferred Businesses for all periods presented, including periods prior to the completion of the Share Exchange. Intercompany transactions between the Transferred Businesses and us, including, among others, the sale of set-top boxes and broadcast services from EchoStar to us, have been eliminated to the extent possible, including the margin EchoStar received on those sales. See Note 2 for further information. We also may enter into additional agreements with EchoStar in the future. The following is a summary of the terms of our principal agreements with EchoStar that may have an impact on our financial condition and results of operations.

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“Trade accounts receivable”

As of December 31, 2018 and 2017, trade accounts receivable from EchoStar was $4 million and $2 million, respectively. These amounts are recorded in “Trade accounts receivable” on our Consolidated Balance Sheets.

“Trade accounts payable”

As of December 31, 2018 and 2017, trade accounts payable to EchoStar was $14 million and $42 million, respectively. These amounts are recorded in “Trade accounts payable” on our Consolidated Balance Sheets.

“Equipment sales and other revenue”

During the years ended December 31, 2018, 2017 and 2016, we received $8 million, $3 million and $2 million, respectively, for services provided to EchoStar. These amounts are recorded in “Equipment sales and other revenue” on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these revenues are discussed below.

Real Estate Lease Agreements. We have entered into lease agreements pursuant to which we lease certain real estate to EchoStar. The rent on a per square foot basis for each of the leases is comparable to per square foot rental rates of similar commercial property in the same geographic areas, and EchoStar is responsible for its portion of the taxes, insurance, utilities and maintenance of the premises. The term of each lease is set forth below:

- El Paso Lease Agreement. During 2012, we began leasing certain space at 1285 Joe Battle Blvd., El Paso, Texas to EchoStar for an initial period ending on August 1, 2015, which also provides EchoStar with renewal options for four consecutive three-year terms. During the second quarter 2015, EchoStar exercised its first renewal option for a period ending on August 1, 2018 and in April 2018 EchoStar exercised its second renewal option for a period ending in August 2021.

- 90 Inverness Lease Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, EchoStar leases certain space from us at 90 Inverness Circle East, Englewood, Colorado for a period ending in

February 2022. EchoStar has the option to renew this lease for four three-year periods.

· Cheyenne Lease Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, EchoStar leases certain space from us at 530 EchoStar Drive, Cheyenne, Wyoming for a period ending in February 2019. In August 2018, EchoStar exercised its option to renew this lease for a one-year period ending in February 2020. EchoStar has the option to renew this lease for twelve one-year periods.

· Gilbert Lease Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, EchoStar leases certain space from us at 801 N. DISH Dr., Gilbert, Arizona for a period ending in March 2019. In August 2018, EchoStar exercised its option to renew this lease for a one-year period ending in February 2020. EchoStar has the option to renew this lease for twelve one-year periods.

· American Fork Occupancy License Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, we acquired the lease for certain space at 796 East Utah Valley Drive, American Fork, Utah, and we sublease certain space at this location to EchoStar for a period ending in August 2017. In June 2017, EchoStar exercised its five-year renewal option for a period ending in August 2022.

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Collocation and Antenna Space Agreements. In connection with the completion of the Share Exchange, effective March 1, 2017, we entered into certain agreements pursuant to which we will provide certain collocation and antenna space to HNS through February 2022 at the following locations: Cheyenne, Wyoming; Gilbert, Arizona; New Braunfels, Texas; Monee, Illinois; Englewood, Colorado; and Spokane, Washington. During August 2017, we entered into certain other agreements pursuant to which we will provide certain collocation and antenna space to HNS through August 2022 at the following locations: Monee, Illinois and Spokane, Washington. HNS has the option to renew each of these agreements for four three-year periods. HNS may terminate certain of these agreements with 180 days' prior written notice to us at the following locations: New Braunfels, Texas; Englewood, Colorado; and Spokane, Washington. The fees for the services provided under these agreements depend, among other things, on the number of racks leased and/or antennas present at the location.

"Subscriber-related expenses"

During the years ended December 31, 2018, 2017 and 2016, we incurred $42 million, $71 million and $92 million, respectively, of subscriber-related expenses for services provided to us by EchoStar. These amounts are recorded in "Subscriber-related expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these expenses are discussed below.

Hughes Broadband Distribution Agreement. Effective October 1, 2012, dishNET Satellite Broadband L.L.C. ("dishNET Satellite Broadband"), our indirect wholly-owned subsidiary, and HNS entered into a Distribution Agreement (the "Distribution Agreement") pursuant to which dishNET Satellite Broadband has the right, but not the obligation, to market, sell and distribute the HNS satellite Internet service (the "Service"). dishNET Satellite Broadband pays HNS a monthly per subscriber wholesale service fee for the Service based upon the subscriber's service level, and, beginning January 1, 2014, certain volume subscription thresholds. The Distribution Agreement also provides that dishNET Satellite Broadband has the right, but not the obligation, to purchase certain broadband equipment from HNS to support the sale of the Service. On February 20, 2014, dishNET Satellite Broadband and HNS amended the Distribution Agreement which, among other things, extended the initial term of the Distribution Agreement through March 1, 2024.

Thereafter, the Distribution Agreement automatically renews for successive one year terms unless either party gives written notice of its intent not to renew to the other party at least 180 days before the expiration of the then-current term. Upon expiration or termination of the Distribution Agreement, the parties will continue to provide the Service to the then-current dishNET subscribers pursuant to the terms and conditions of the Distribution Agreement.

For the years ended December 31, 2018, 2017 and 2016, under the Distribution Agreement, we purchased broadband equipment from HNS of zero, zero and $9 million, respectively. These amounts are initially included in "Inventory" and are subsequently capitalized as "Property and equipment, net" on our Consolidated Balance Sheets or expensed as "Subscriber acquisition costs" or "Subscriber-related expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss) when the equipment is deployed.

During the first quarter 2017, we transitioned our wholesale arrangement with Hughes under the Distribution Agreement to an authorized representative arrangement and entered into the MSA with HNS. See "Hughes Broadband Master Services Agreement" below for further information.

"Satellite and transmission expenses"

During the years ended December 31, 2018, 2017 and 2016, we incurred $315 million, $353 million and $357 million, respectively, for satellite capacity leased from EchoStar and telemetry, tracking and control and other professional services provided to us by EchoStar. EchoStar is a supplier of the vast majority of our transponder capacity. These amounts are recorded in "Satellite and transmission expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these expenses are discussed below.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Satellite Capacity Leased from EchoStar. We have entered into certain satellite capacity agreements pursuant to which we lease certain capacity on certain satellites owned or leased by EchoStar. The fees for the services provided under these satellite capacity agreements depend, among other things, upon the orbital location of the applicable satellite, the number of transponders that are leased on the applicable satellite and the length of the lease. See “Pay-TV Satellites” in Note 8 for further information. The term of each lease is set forth below:

- EchoStar VII, X, XI and XIV. On March 1, 2014, we began leasing all available capacity from EchoStar on the EchoStar VII, X, XI and XIV satellites. The term of each satellite capacity agreement generally terminates upon the earlier of: (i) the end-of-life of the satellite; (ii) the date the satellite fails; or (iii) a certain date, which depends upon, among other things, the estimated useful life of the satellite. We generally have the option to renew each satellite capacity agreement on a year-to-year basis through the end of the respective satellite’s life. There can be no assurance that any options to renew such agreements will be exercised. The satellite capacity agreement for EchoStar VII expired on June 30, 2018.

- EchoStar IX. We lease certain satellite capacity from EchoStar on EchoStar IX. Subject to availability, we generally have the right to continue to lease satellite capacity from EchoStar on EchoStar IX on a month-to-month basis.

- EchoStar XII. The lease for EchoStar XII expired as of September 30, 2017.

- EchoStar XVI. In December 2009, we entered into a transponder service agreement with EchoStar to lease all of the capacity on EchoStar XVI, a DBS satellite, after its service commencement date. EchoStar XVI was launched in November 2012 to replace EchoStar XV at the 61.5 degree orbital location and is currently in service. Effective December 21, 2012, we and EchoStar amended the transponder service agreement to, among other things, change the initial term to generally expire upon the earlier of: (i) the end-of-life or replacement of the satellite; (ii) the date the satellite fails; (iii) the date the transponder(s) on which service is being provided under the agreement fails; or (iv) four years following the actual service commencement date. In July 2016, we and EchoStar amended the transponder service agreement to, among other things, extend the initial term by one additional year and to reduce the term of the first renewal option by one year. Prior to expiration of the initial term, we had the option to renew for an additional five-year period. In May 2017, we exercised our first renewal option for an additional five-year period ending in January 2023. We also have the option to renew for an additional five-year period prior to expiration of the first renewal period in January 2023. There can be no assurance that the option to renew this agreement will be exercised. During 2018, we and EchoStar further amended the agreement to, among other things, allow us to place and use certain satellites at the 61.5 degree orbital location.

Nimiq 5 Agreement. During 2009, EchoStar entered into a fifteen-year satellite service agreement with Telesat Canada ("Telesat") to receive service on all 32 DBS transponders on the Nimiq 5 satellite at the 72.7 degree orbital location (the "Telesat Transponder Agreement"). During 2009, EchoStar also entered into a satellite service agreement (the "DISH Nimiq 5 Agreement") with us, pursuant to which we currently receive service from EchoStar on all 32 of the DBS transponders covered by the Telesat Transponder Agreement. We have also guaranteed certain obligations of EchoStar under the Telesat Transponder Agreement. See discussion under "Guarantees" in Note 14.

Under the terms of the DISH Nimiq 5 Agreement, we make certain monthly payments to EchoStar that commenced in 2009 when the Nimiq 5 satellite was placed into service and continue through the service term. Unless earlier terminated under the terms and conditions of the DISH Nimiq 5 Agreement, the service term will expire ten years following the date the Nimiq 5 satellite was placed into service. Upon expiration of the initial term, we have the option to renew the DISH Nimiq 5 Agreement on a year-to-year basis through the end-of-life of the Nimiq 5 satellite. Upon in-orbit failure or end-of-life of the Nimiq 5 satellite, and in certain other circumstances, we have certain rights to receive service from EchoStar on a replacement satellite. There can be no assurance that any options to renew the DISH Nimiq 5 Agreement will be exercised or that we will exercise our option to receive service on a replacement satellite.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

QuetzSat-1 Lease Agreement. During 2008, EchoStar entered into a ten-year satellite service agreement with SES Latin America S.A. ("SES"), which provides, among other things, for the provision by SES to EchoStar of service on 32 DBS transponders on the QuetzSat-1 satellite. During 2008, EchoStar also entered into a transponder service agreement ("QuetzSat-1 Transponder Agreement") with us pursuant to which we receive service from EchoStar on 24 DBS transponders. QuetzSat-1 was launched on September 29, 2011 and was placed into service during the fourth quarter 2011 at the 67.1 degree orbital location while we and EchoStar explored alternative uses for the QuetzSat-1 satellite. In the interim, EchoStar provided us with alternate capacity at the 77 degree orbital location. During the first quarter 2013, we and EchoStar entered into an agreement pursuant to which we sublease five DBS transponders back to EchoStar. In January 2013, QuetzSat-1 was moved to the 77 degree orbital location and we commenced commercial operations at that location in February 2013.

Unless earlier terminated under the terms and conditions of the QuetzSat-1 Transponder Agreement, the initial service term will expire in November 2021. Upon expiration of the initial term, we have the option to renew the QuetzSat-1 Transponder Agreement on a year-to-year basis through the end-of-life of the QuetzSat-1 satellite. Upon an in-orbit failure or end-of-life of the QuetzSat-1 satellite, and in certain other circumstances, we have certain rights to receive service from EchoStar on a replacement satellite. There can be no assurance that any options to renew the QuetzSat-1 Transponder Agreement will be exercised or that we will exercise our option to receive service on a replacement satellite.

103 Degree Orbital Location/SES-3. In May 2012, EchoStar 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 orbital location (the "103 Spectrum Rights"). In June 2013, we and EchoStar entered into a spectrum development agreement (the "DISH 103 Spectrum Development Agreement") pursuant to which we may use and develop the 103 Spectrum Rights. Both the 103 Spectrum Development Agreement and DISH 103 Spectrum Development Agreement were terminated on March 31, 2018.

In connection with the 103 Spectrum Development Agreement, in May 2012, EchoStar also entered into a ten-year service agreement with Ciel pursuant to which EchoStar leases certain satellite capacity from Ciel on the SES-3 satellite at the 103 degree orbital location (the "103 Service Agreement"). In June 2013, we and EchoStar entered into an agreement pursuant to which we lease certain satellite capacity from EchoStar on the SES-3 satellite (the "DISH 103 Service Agreement"). Under the terms of the DISH 103 Service Agreement, we make certain monthly payments to EchoStar through the service term. Both the 103 Service Agreement and DISH 103 Service Agreement were terminated on March 31, 2018.

TT&C Agreement. Effective January 1, 2012, we entered into a telemetry, tracking and control ("TT&C") agreement pursuant to which we receive TT&C services from EchoStar for certain satellites (the "TT&C Agreement"). In February 2018, we amended the TT&C Agreement to, among other things, extend the term for one-year with four automatic one-year renewal periods. The fees for services provided under the 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. We and EchoStar are able to terminate the TT&C Agreement for any reason upon 12 months' notice.

DBSD North America Agreement. On March 9, 2012, we completed the DBSD Transaction. During the second quarter 2011, EchoStar acquired Hughes. Prior to our acquisition of DBSD North America and EchoStar's acquisition of Hughes, DBSD North America and HNS entered into an agreement pursuant to which HNS provides, among other things, hosting, operations and maintenance services for DBSD North America's satellite gateway and associated ground infrastructure. This agreement generally may be terminated by us at any time for convenience.

TerreStar Agreement. On March 9, 2012, we completed the TerreStar Transaction. Prior to our acquisition of substantially all the assets of TerreStar and EchoStar's acquisition of Hughes, TerreStar and HNS entered into various agreements pursuant to which HNS provides, among other things, hosting, operations and maintenance services for TerreStar's satellite gateway and associated ground infrastructure. These agreements generally may be terminated by us at any time for convenience.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Hughes Equipment and Services Agreement. In February 2019, we and HNS entered into an agreement pursuant to which HNS will provide us with HughesNet Service and HughesNet equipment for the transmission of certain data related to our next-generation 5G-capable network, focused on supporting narrowband IoT. This agreement has an initial term of five years 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.

"General and administrative expenses"

During the years ended December 31, 2018, 2017 and 2016, we incurred $21 million, $29 million and $14 million, respectively, for general and administrative expenses for services provided to us by EchoStar. These amounts are recorded in "General and administrative expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these expenses are discussed below.

Real Estate Lease Agreements. We have entered into lease agreements pursuant to which we lease certain real estate from EchoStar. The rent on a per square foot basis for each of the leases is comparable to per square foot rental rates of similar commercial property in the same geographic area, and EchoStar is responsible for its portion of the taxes, insurance, utilities and maintenance of the premises. The term of each lease is set forth below:

- Meridian Lease Agreement. The lease for all of 9601 S. Meridian Blvd. in Englewood, Colorado was for a period ending on December 31, 2018. In December 2018, we and EchoStar amended this lease to, among other things, extend the term thereof for one additional year until December 31, 2019.

- Santa Fe Lease Agreement. The lease for all of 5701 S. Santa Fe Dr. in Littleton, Colorado was for a period ending on December 31, 2018. In December 2018, we and EchoStar amended this lease to, among other things, extend the term thereof for one additional year until December 31, 2019.

- Cheyenne Lease Agreement. The lease for certain space at 530 EchoStar Drive in Cheyenne, Wyoming is for a period ending on December 31, 2031. In connection with the completion of the Share Exchange, EchoStar transferred ownership of a portion of this property to us, and, effective March 1, 2017, we and EchoStar amended this lease agreement to (i) terminate the lease of certain space at the portion of the property that was transferred to us and (ii) provide for the continued lease to us of certain space at the portion of the property that EchoStar retained.

- 100 Inverness Lease Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, we lease certain space from EchoStar at 100 Inverness Terrace East, Englewood, Colorado for a period ending in December 2020. This agreement may be terminated by either party upon 180 days' prior notice.

Professional Services Agreement. Prior to 2010, in connection with the Spin-off, we entered into various agreements with EchoStar including the Transition Services Agreement, Satellite Procurement Agreement and Services Agreement, which all expired on January 1, 2010 and were replaced by a Professional Services Agreement. During 2009, we and EchoStar agreed that EchoStar shall continue to have the right, but not the obligation, to receive the following services from us, among others, certain of which were previously provided under the 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, we and EchoStar agreed that we shall continue to have the right, but not the obligation, to engage EchoStar to manage the process of procuring new satellite capacity for us (previously provided under the Satellite Procurement Agreement) and receive logistics, procurement and quality assurance services from EchoStar (previously provided under the Services Agreement) and other support services. The Professional Services Agreement renewed on January 1, 2018 for an additional one-year period until January 1, 2019 and renews automatically for successive one-year periods thereafter, unless terminated earlier by either party upon at least 60 days' notice. However, either party may terminate the Professional Services Agreement in part with respect to any particular service it receives for any reason upon at least 30 days' notice. In connection with the completion of the Share Exchange on February 28, 2017, DISH Network and EchoStar amended the Professional Services Agreement to, among other things, provide certain transition services to each other related to the Share Exchange Agreement.

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Revenue for services provided by us to EchoStar under the Professional Services Agreement is recorded in "Equipment sales and other revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Other Agreements - EchoStar

Tax Sharing Agreement. In connection with the Spin-off, we entered into a tax sharing agreement (the "Tax Sharing Agreement") with EchoStar which governs our 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 us, and we will indemnify EchoStar for such taxes. However, we are not liable for and will not indemnify EchoStar 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 Internal Revenue Code of 1986, as amended (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 takes or fails to take; or (iii) any action that EchoStar takes that is inconsistent with the information and representations furnished to the Internal Revenue Service ("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 is solely liable for, and will indemnify us for, any resulting taxes, as well as any losses, claims and expenses. The Tax Sharing Agreement will only 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 our consolidated federal income tax returns for certain tax years prior to and for the year of the Spin-off, during the third quarter 2013, we and EchoStar agreed upon a supplemental allocation of the tax benefits arising from certain tax items resolved in the course of the IRS' examination of these consolidated tax returns. As a result, we agreed to pay EchoStar $84 million of the tax benefit we received or will receive. This resulted in a reduction of our recorded unrecognized tax benefits and this amount was reclassified to a long-term payable to EchoStar within "Long-term deferred revenue and other long-term liabilities" on our Consolidated Balance Sheets during the third quarter 2013. Any payment to EchoStar, including accrued interest, will be made at such time as EchoStar would have otherwise been able to realize such tax benefit. In addition, during the third quarter 2013, we and EchoStar agreed upon a tax sharing arrangement for filing certain combined state income tax returns and a method of allocating the respective tax liabilities between us and EchoStar for such combined returns, through the taxable period ending on December 31, 2017 (the "State Tax Arrangement"). During the third quarter 2018, we and EchoStar amended the Tax Sharing Agreement and the 2013 agreements (the "Amendment").

Under the Amendment, among other things, we are entitled to apply the benefit of EchoStar's 2009 net operating losses to our federal tax return for the year ended December 31, 2008, in exchange for paying EchoStar over time the value of the net annual federal income taxes paid by EchoStar that would have been otherwise offset by their 2009 net operating loss. In addition, the Amendment extends the term of the State Tax Arrangement for filing certain combined state income tax returns to the earlier to occur of (1) termination of the Tax Sharing Agreement, (2) a change in control of either us or EchoStar or, (3) for any particular state, if we and EchoStar no longer file a combined tax return for such state.

We and EchoStar file combined income tax returns in certain states. In 2015 and 2014, EchoStar earned and recognized a tax benefit for certain state income tax credits that EchoStar estimates it would be unable to utilize in the future if it had filed separately from us. In addition, EchoStar earned and recognized tax benefits for certain federal income tax credits, a portion of which were allocated to us under IRS rules for affiliated companies. We expect to utilize these tax credits to reduce our federal and state income tax payable in the future. In accordance with accounting rules that apply to transfers of assets between entities under common control, we recorded a capital contribution of less than $1 million for each of the years ended December 31, 2018, 2017 and 2016, respectively, in "Additional paid-in capital" on our Consolidated Balance Sheets representing the amount that we estimate is more likely than not to be realized by us as a result of our utilization of these tax credits earned. Any payments made to EchoStar related to the utilization of these credits will be recorded as a reduction to "Additional paid-in capital" on our Consolidated Balance Sheets.

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DISH NETWORK CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Tax Matters Agreement. In connection with the completion of the Share Exchange, we and EchoStar entered into a Tax Matters Agreement, which governs certain rights, responsibilities and obligations 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 for periods prior to the Share Exchange, and we are responsible for all tax returns and tax liabilities for the Transferred Businesses from and after the Share Exchange. Both we and EchoStar have made certain tax-related representations and are subject to various tax-related covenants after the consummation of the Share Exchange. Both we and EchoStar 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, we have agreed to indemnify EchoStar if the Transferred Businesses are acquired, either directly or indirectly (e.g., via an acquisition of us), 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 described above, which continues in full force and effect.

TiVo. On April 29, 2011, we and EchoStar entered into a settlement agreement with TiVo Inc. (“TiVo”). The settlement resolved all pending litigation between us and EchoStar, on the one hand, and TiVo, on the other hand, including litigation relating to alleged patent infringement involving certain DISH TV digital video recorders, or DVRs.

Under the settlement agreement, all pending litigation was dismissed with prejudice and all injunctions that permanently restrain, enjoin or compel any action by us or EchoStar were dissolved. We and EchoStar are jointly responsible for making payments to TiVo in the aggregate amount of $500 million, including an initial payment of $300 million and the remaining $200 million in six equal annual installments between 2012 and 2017. Pursuant to the terms and conditions of the agreements entered into in connection with the Spin-off of EchoStar from us, we made the initial payment to TiVo in May 2011, except for the contribution from EchoStar totaling approximately $10 million, representing an allocation of liability relating to EchoStar’s sales of DVR-enabled receivers to an international customer. Future payments were allocated between us and EchoStar based on historical sales of certain licensed products, with us being responsible for 95% of each annual payment. Pursuant to the Share Exchange Agreement, we were responsible for EchoStar’s allocation of the final payment to TiVo, which was paid July 31, 2017.

Patent Cross-License Agreements. In December 2011, we and EchoStar entered into separate patent cross-license agreements with the same third party whereby: (i) EchoStar and such third-party licensed their respective patents to each other subject to certain conditions; and (ii) we and such third-party licensed our respective patents to each other subject to certain conditions (each, a “Cross-License Agreement”). Each Cross License Agreement covers patents acquired by the respective party prior to January 1, 2017 and aggregate payments under both Cross-License Agreements total less than $10 million. Each Cross License Agreement also contains an option to extend each

Cross-License Agreement to include patents acquired by the respective party prior to January 1, 2022. In December 2016, we and EchoStar independently exercised our respective options to extend each Cross-License Agreement. The aggregate additional payments to such third-party was less than $3 million. Since the aggregate payments under both Cross-License Agreements were based on the combined annual revenues of us and EchoStar, we and EchoStar agreed to allocate our respective payments to such third party based on our respective percentage of combined total revenue.

Rovi License Agreement. On August 19, 2016, we entered into a ten-year patent license agreement (the "Rovi License Agreement") with Rovi Corporation ("Rovi") and, for certain limited purposes, EchoStar. EchoStar is a party to the Rovi License Agreement solely with respect to certain provisions relating to the prior patent license agreement between EchoStar and Rovi. There are no payments between us and EchoStar under the Rovi License Agreement.

Sale of Orange, New Jersey Properties. In October 2016, we and EchoStar sold two parcels of real estate owned separately by us and EchoStar in Orange, New Jersey to a third party pursuant to a purchase and sale agreement. Pursuant to the agreement, we and EchoStar separately received our respective payments from the buyer.

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Invidi. In November 2010 and April 2011, EchoStar made investments in Invidi in exchange for shares of Invidi's Series D Preferred Stock. In November 2016, we, DIRECTV, LLC, a wholly-owned indirect subsidiary of AT&T Inc., and Cavendish Square Holding B.V., an affiliate of WPP plc, entered into a series of agreements to acquire Invidi. As a result of the transaction, EchoStar sold its ownership interest in Invidi on the same terms offered to the other shareholders of Invidi. The transaction closed in January 2017.

Hughes Broadband Master Services Agreement. In March 2017, DISH Network L.L.C. ("DNLLC") and HNS entered into the MSA pursuant to which DNLLC, among other things: (i) has the right, but not the obligation, to market, promote and solicit orders for the Hughes broadband satellite service and related equipment; and (ii) installs Hughes service equipment with respect to activations generated by DNLLC. Under the MSA, HNS will make certain payments to DNLLC for each Hughes service activation generated, and installation performed, by DNLLC. Payments from HNS for services provided are recorded in "Subscriber-related revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The MSA has an initial term of five years with automatic renewal for successive one year terms. After the first anniversary of the MSA, either party has the ability to terminate the 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 MSA, HNS will continue to provide the Hughes service to subscribers and make certain payments to DNLLC pursuant to the terms and conditions of the MSA. For the years ended December 31, 2018 and 2017, we purchased broadband equipment from HNS of $21 million and $22 million under the MSA, respectively.

Employee Matters Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, we and EchoStar entered into an Employee Matters Agreement that addresses the transfer of employees from EchoStar to us, including certain benefit and compensation matters and the allocation of responsibility for employee-related liabilities relating to current and past employees of the Transferred Businesses. We assumed employee-related liabilities relating to the Transferred Businesses as part of the Share Exchange, except that EchoStar will be responsible for certain existing employee-related litigation as well as certain pre-Share Exchange compensation and benefits for employees transferring to us in connection with the Share Exchange.

Intellectual Property and Technology License Agreement. In connection with the completion of the Share Exchange, effective March 1, 2017, we and EchoStar entered into an Intellectual Property and Technology License Agreement ("IPTLA"), pursuant to which we and EchoStar 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, EchoStar granted to us a license to its intellectual property and technology for use by us, among other things, in connection with our continued operation of the Transferred Businesses acquired pursuant to the Share Exchange Agreement, including a limited license to use the "ECHOSTAR" trademark during a transition period. EchoStar retains full ownership of the "ECHOSTAR" trademark. In addition, we granted a license back to EchoStar, among other things, for the continued use of all intellectual property and technology transferred to us pursuant to the Share Exchange Agreement that is used in EchoStar's retained businesses.

Related Party Transactions with NagraStar L.L.C.

As a result of the completion of the Share Exchange on February 28, 2017, we own a 50% interest in NagraStar, a joint venture that is our primary provider of encryption and related security systems intended to assure that only authorized customers have access to our programming. Certain payments related to NagraStar are recorded in "Subscriber-related expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss). In addition, certain other payments are initially included in "Inventory" and are subsequently capitalized as "Property and equipment, net" on our Consolidated Balance Sheets or expensed as "Subscriber acquisition costs" or "Subscriber-related expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss) when the equipment is deployed. We record all payables in "Trade accounts payable" or "Other accrued expenses" on our Consolidated Balance Sheets. Our investment in NagraStar is accounted for using the equity method.

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The table below summarizes our transactions with NagraStar.

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Purchases (including fees):			
Purchases from NagraStar	$ 72,162	$ 71,167	$ 84,459

	As of December 31,	
	2018	2017
	(In thousands)	
Amounts Payable and Commitments:		
Amounts payable to NagraStar	$ 9,871	$ 16,685
Commitments to NagraStar	$ 3,888	$ 4,927

Related Party Transactions with Dish Mexico

Dish Mexico, S. de R.L. de C.V. (“Dish Mexico”) is an entity that provides direct-to-home satellite services in Mexico, which is owned 49% by EchoStar. We provide certain broadcast services and sell hardware such as digital set-top boxes and related components to Dish Mexico, which are recorded in “Equipment sales and other revenue” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

The table below summarizes our transactions with Dish Mexico:

	For the Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Sales:			
Digital receivers and related components	$ 1,227	$ 1,891	$ 52,324

Uplink services	$ 5,426	$ 3,994	$ 4,059

	As of December 31,	
	2018	2017
	(In thousands)	
Amounts Receivable:		
Amounts receivable from Dish Mexico	$ 1,370	$ 3,027