EchoStar CORP
Form 10-Q
November 08, 2016
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

ý QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2016.

OR

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

Commission File Number: 001-33807

EchoStar Corporation
(Exact Name of Registrant as Specified in Its Charter)

Nevada	26-1232727
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
100 Inverness Terrace East, Englewood, Colorado	80112-5308
(Address of Principal Executive Offices)	(Zip Code)

(303) 706-4000
(Registrant’s Telephone Number, Including Area Code)

Not Applicable
(Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report)

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 ý No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ý No o

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

Large accelerated filer ý	Accelerated filer o	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

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

As of October 31, 2016, the registrant's outstanding common stock consisted of 46,413,453 shares of Class A common stock and 47,687,039 shares of Class B common stock, each $0.001 par value.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

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

- our reliance on our primary customer, DISH Network Corporation and its subsidiaries (“DISH Network”), for a significant portion of our revenue;
- our ability to implement our strategic initiatives;
- the impact of variable demand and the adverse pricing and regulatory environment for digital set-top boxes;
- dependence on our ability to successfully manufacture and sell our digital set-top boxes in increasing volumes on a cost-effective basis and with acceptable quality;
- our ability to bring advanced technologies to market to keep pace with our customers and competitors;
- risk related to our foreign operations and other uncertainties associated with doing business internationally, including changes in foreign exchange rates between foreign currencies and the United States dollar, economic instability and political disturbances;
- significant risks related to the construction, launch and operation of our satellites, such as the risk of material malfunction on one or more of our satellites, risks resulting from delays of launches of our satellites, changes in the space weather environment that could interfere with the operation of our satellites, and our general lack of commercial insurance coverage on our satellites;
- our failure to adequately anticipate the need for satellite capacity or the inability to obtain satellite capacity for our Hughes segment; and
- the failure of third-party providers of components, manufacturing, installation services and customer support services to appropriately deliver the contracted goods or services.

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 II, Item 1A of this Form 10-Q and in Part I, Item 1A of our most recent Annual Report on Form 10-K (“Form 10-K”) filed with the Securities and Exchange Commission (“SEC”), those discussed in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” herein and in our Form 10-K, and those discussed in other documents we file with the SEC.

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

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

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

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PART I — FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

ECHOSTAR CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except share amounts)
(Unaudited)

	As of September 30, 2016	December 31, 2015
Assets		
Current Assets:		
Cash and cash equivalents	$2,215,708	$924,240
Marketable investment securities, at fair value	803,309	612,338
Trade accounts receivable, net of allowance for doubtful accounts of $13,817 and $12,485, respectively	177,901	179,240
Trade accounts receivable - DISH Network, net of allowance for doubtful accounts of zero	330,300	277,159
Inventory	73,789	67,010
Prepaids and deposits	61,489	56,949
Other current assets	54,993	16,723
Total current assets	3,717,489	2,133,659
Noncurrent Assets:		
Restricted cash and marketable investment securities	13,651	21,002
Property and equipment, net of accumulated depreciation of $3,303,714 and $2,998,074, respectively	3,628,379	3,412,990
Regulatory authorizations, net	548,211	543,812
Goodwill	510,630	510,630
Other intangible assets, net	98,366	132,653
Investments in unconsolidated entities	202,272	209,264
Other receivable - DISH Network	90,359	90,966
Other noncurrent assets, net	167,980	154,510
Total noncurrent assets	5,259,848	5,075,827
Total assets	$8,977,337	$7,209,486
Liabilities and Stockholders’ Equity		
Current Liabilities:		
Trade accounts payable	$225,234	$213,671
Trade accounts payable - DISH Network	1,520	24,682
Current portion of long-term debt and capital lease obligations	37,717	35,698
Deferred revenue and prepayments	62,197	61,881
Accrued compensation	37,083	29,767
Accrued royalties	22,687	22,531
Accrued interest	57,159	8,596
Accrued expenses and other	104,638	130,005
Total current liabilities	548,235	526,831
Noncurrent Liabilities:		

Long-term debt and capital lease obligations, net of unamortized debt issuance costs	3,629,973	2,156,667
Deferred tax liabilities, net	724,839	650,392
Other noncurrent liabilities	95,615	93,954
Total noncurrent liabilities	4,450,427	2,901,013
Total liabilities	4,998,662	3,427,844
Commitments and Contingencies (Note 14)		
Stockholders' Equity:		
Preferred Stock, $.001 par value, 20,000,000 shares authorized:		
Hughes Retail Preferred Tracking Stock, $.001 par value, 13,000,000 shares authorized, 6,290,499 issued and outstanding at each of September 30, 2016 and December 31, 2015	6	6
Common stock, $.001 par value, 4,000,000,000 shares authorized:		
Class A common stock, $.001 par value, 1,600,000,000 shares authorized, 51,890,524 shares issued and 46,358,206 shares outstanding at September 30, 2016 and 51,087,839 shares issued and 45,555,521 shares outstanding at December 31, 2015	52	51
Class B common stock, $.001 par value, 800,000,000 shares authorized, 47,687,039 shares issued and outstanding at each of September 30, 2016 and December 31, 2015	48	48
Class C common stock, $.001 par value, 800,000,000 shares authorized, none issued and outstanding at each of September 30, 2016 and December 31, 2015	—	—
Class D common stock, $.001 par value, 800,000,000 shares authorized, none issued and outstanding at each of September 30, 2016 and December 31, 2015	—	—
Additional paid-in capital	3,813,841	3,776,451
Accumulated other comprehensive loss	(99,167)	(117,233)
Accumulated earnings	276,059	134,317
Treasury stock, at cost	(98,162)	(98,162)
Total EchoStar stockholders' equity	3,892,677	3,695,478
Noncontrolling interest in HSS Tracking Stock	73,928	74,854
Other noncontrolling interests	12,070	11,310
Total stockholders' equity	3,978,675	3,781,642
Total liabilities and stockholders' equity	$8,977,337	$7,209,486

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

ECHOSTAR CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
AND COMPREHENSIVE INCOME (LOSS)
(In thousands, except per share amounts)
(Unaudited)

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2016	2015	2016	2015
Revenue:				
Services and other revenue - DISH Network	$221,867	$236,601	$655,793	$695,358
Services and other revenue - other	278,009	277,640	826,430	824,130
Equipment revenue - DISH Network	156,227	157,184	590,988	577,277
Equipment revenue - other	86,246	89,454	243,126	256,362
Total revenue	742,349	760,879	2,316,337	2,353,127
Costs and Expenses:				
Cost of sales - services and other (exclusive of depreciation and amortization)	213,621	219,686	618,271	645,691
Cost of sales - equipment (exclusive of depreciation and amortization)	200,986	207,989	710,724	706,835
Selling, general and administrative expenses	101,541	91,830	296,377	280,462
Research and development expenses	20,587	19,875	61,761	57,432
Depreciation and amortization	123,633	132,892	370,872	398,547
Total costs and expenses	660,368	672,272	2,058,005	2,088,967
Operating income	81,981	88,607	258,332	264,160
Other Income (Expense):				
Interest income	6,260	2,562	13,729	7,896
Interest expense, net of amounts capitalized	(37,358)	(28,870)	(80,495)	(96,136)
Loss from partial redemption of debt	—	—	—	(5,044)
Gains (losses) on marketable investment securities, net	230	(3,912)	8,179	(5,516)
Other-than-temporary impairment loss on available-for-sale securities	—	(1,243)	—	(5,892)
Equity in earnings (losses) of unconsolidated affiliates, net	5,164	(2,324)	11,181	(2,580)
Other, net	645	2,115	5,900	(4,078)
Total other expense, net	(25,059)	(31,672)	(41,506)	(111,350)
Income before income taxes	56,922	56,935	216,826	152,810
Income tax provision	(19,512)	(28,577)	(75,064)	(65,841)
Net income	37,410	28,358	141,762	86,969
Less: Net income (loss) attributable to noncontrolling interest in HSS Tracking Stock	85	(686)	(926)	(4,020)
Less: Net income attributable to other noncontrolling interests	524	209	946	1,006
Net income attributable to EchoStar	36,801	28,835	141,742	89,983
Less: Net income (loss) attributable to Hughes Retail Preferred Tracking Stock (Note 4)	157	(1,267)	(1,709)	(7,421)
Net income attributable to EchoStar common stock	$36,644	$30,102	$143,451	$97,404
Weighted-average common shares outstanding - Class A and B common stock:				
Basic	93,898	92,500	93,661	92,253

Diluted	94,401	93,493	94,189	93,480
Earnings per share - Class A and B common stock:				
Basic	$0.39	$0.33	$1.53	$1.06
Diluted	$0.39	$0.32	$1.52	$1.04
Comprehensive Income:				
Net income	$37,410	$28,358	$141,762	$86,969
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments	2,483	(32,603)	13,769	(56,009)
Recognition of foreign currency translation loss in net income	—	—	—	1,889
Unrealized gains (losses) on available-for-sale securities and other	10,180	(7,373)	9,695	(8,208)
Recognition of other-than-temporary loss on available-for-sale securities in net income	—	1,243	—	5,892
Recognition of realized gains on available-for-sale securities in net income	(10)	(9)	(5,584)	(29)
Total other comprehensive income (loss), net of tax	12,653	(38,742)	17,880	(56,465)
Comprehensive income (loss)	50,063	(10,384)	159,642	30,504
Less: Comprehensive income (loss) attributable to noncontrolling interest in HSS Tracking Stock	85	(686)	(926)	(4,020)
Less: Comprehensive income attributable to other noncontrolling interests	524	(111)	760	686
Comprehensive income attributable to EchoStar	$49,454	$(9,587)	$159,808	$33,838

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

ECHOSTAR CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	For the Nine Months Ended September 30,	
	2016	2015
Cash Flows from Operating Activities:		
Net income	$141,762	$86,969
Adjustments to reconcile net income to net cash flows from operating activities:		
Depreciation and amortization	370,872	398,547
Equity in losses (earnings) of unconsolidated affiliates, net	(11,181)	2,580
Loss from partial redemption of debt	—	5,044
Loss (gain) and impairment on marketable investment securities, net	(8,179)	11,408
Stock-based compensation	11,953	16,204
Deferred tax provision	71,422	63,421
Dividends received from unconsolidated entities	15,000	5,000
Proceeds from sale of trading securities	7,140	380
Changes in current assets and current liabilities, net	(47,013)	(274)
Changes in noncurrent assets and noncurrent liabilities, net	8,097	3,457
Other, net	14,836	15,187
Net cash flows from operating activities	574,709	607,923
Cash Flows from Investing Activities:		
Purchases of marketable investment securities	(883,288)	(345,391)
Sales and maturities of marketable investment securities	643,865	669,393
Purchases of property and equipment	(533,669)	(585,902)
Refunds and other receipts related to capital expenditures	24,087	105,750
Changes in restricted cash and marketable investment securities	7,351	(313)
Investments in unconsolidated entities	(1,636)	(64,655)
Acquisition of regulatory authorization	—	(3,428)
Expenditures for externally marketed software	(17,991)	(16,905)
Other, net	1,462	(50)
Net cash flows from investing activities	(759,819)	(241,501)
Cash Flows from Financing Activities:		
Proceeds from issuance of long-term debt	1,500,000	—
Payments of debt issuance costs	(6,275)	—
Repayment of 6 1/2% Senior Secured Notes Due 2019 and related premium	—	(113,300)
Repayment of other debt and capital lease obligations	(30,615)	(35,303)
Net proceeds from Class A common stock options exercised and stock issued under the Employee Stock Purchase Plan	16,157	19,893
Other, net	(3,373)	1,525
Net cash flows from financing activities	1,475,894	(127,185)
Effect of exchange rates on cash and cash equivalents	684	(9,185)
Net increase in cash and cash equivalents	1,291,468	230,052
Cash and cash equivalents, beginning of period	924,240	549,053
Cash and cash equivalents, end of period	$2,215,708	$779,105

Supplemental Disclosure of Cash Flow Information:		
Cash paid for interest (including capitalized interest)	$97,044	$102,335
Capitalized interest	$70,386	$44,335
Cash paid for income taxes	$9,187	$5,185
Employee benefits paid in Class A common stock	$11,126	$10,711
Property and equipment financed under capital lease obligations	$7,172	$5,551
Increase (decrease) in capital expenditures included in accounts payable, net	$21,951	$10,297
Reduction of capital lease obligation for AMC-15 and AMC-16 satellites	$—	$4,500

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

ECHOSTAR CORPORATION
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

Note 1. Organization and Business Activities

Principal Business

EchoStar Corporation (which, together with its subsidiaries, is referred to as "EchoStar," the "Company," "we," "us" and/or "our") is a holding company that was organized in October 2007 as a corporation under the laws of the State of Nevada. We are a global provider of satellite service operations, video delivery solutions, digital set-top boxes, broadband satellite technologies and broadband services for home and office customers. We deliver innovative network technologies, managed services, and various communications solutions for enterprise and government customers. Our Class A common stock is publicly traded on the Nasdaq Global Select Market ("Nasdaq") under the symbol "SATS."

We currently operate in the following three business segments:

- Hughes — which provides broadband satellite technologies and broadband services to home and office customers and network technologies, managed services and communication solutions to domestic and international consumer, enterprise and government customers. The Hughes segment also provides managed services, hardware, and satellite services to large enterprises and government customers, and designs, provides and installs gateway and terminal equipment to customers for other satellite systems.
- EchoStar Technologies — which designs, develops and distributes secure end-to-end video technology solutions including digital set-top boxes and related products and technology, primarily for satellite TV service providers and telecommunication companies. Our EchoStar Technologies segment also provides digital broadcast operations, including satellite uplinking/downlinking, transmission services, signal processing, conditional access management, and other services, primarily to DISH Network Corporation and its subsidiaries ("DISH Network") and Dish Mexico, S. de R.L. de C.V. ("Dish Mexico"), a joint venture we entered into in 2008. In addition, we provide our TV Anywhere technology through Slingbox® units directly to consumers via retail outlets and online, as well as to the pay-TV operator market. Beginning in 2015, this segment also includes Move Networks, our over-the-top ("OTT"), Streaming Video on Demand ("SVOD") platform business, which primarily provides support services to DISH Network's Sling TV™ service ("Sling TV").
- EchoStar Satellite Services ("ESS") — which uses certain of our owned and leased in-orbit satellites and related licenses to provide satellite service operations and video delivery solutions on a full-time and occasional-use basis primarily to DISH Network, Dish Mexico, United States ("U.S.") government service providers, internet service providers, broadcast news organizations, programmers, and private enterprise customers.

Our operations also include real estate and other activities that have not been assigned to our operating segments, including costs incurred in certain satellite development programs and other business development activities, expenses of various corporate departments, and our centralized treasury operations, including income from our investment portfolio and interest expense on our debt.

In 2008, DISH Network completed its distribution to us of its digital set-top box business, certain infrastructure, and other assets and related liabilities, including certain of its satellites, uplink and satellite transmission assets, and real estate (the "Spin-off"). Since the Spin-off, EchoStar and DISH Network have operated as separate publicly-traded companies. However, as a result of the Satellite and Tracking Stock Transaction described in Note 4 below and in our most recent Annual Report on Form 10-K, DISH Network owns Hughes Retail Preferred Tracking Stock representing an aggregate 80.0% economic interest in the residential retail satellite broadband business of our Hughes segment.

The tracking stock is an equity security and the rights of DISH Network, as the holder of the tracking stock, in our assets are subject to the claims of our creditors. In addition, a substantial majority of the voting power of the shares of EchoStar and DISH Network is owned beneficially by Charles W. Ergen, our Chairman, and by certain trusts established by Mr. Ergen for the benefit of his family.

Note 2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the U.S. ("GAAP") and with the instructions to Form 10-Q and Article 10 of Regulation S-X for interim financial information. Accordingly, these financial statements do not include all of the information and notes required for complete financial statements prepared in conformity with GAAP. In our opinion, all adjustments (consisting of normal recurring adjustments) considered necessary for a fair presentation have been included. Our results of operations for the interim periods presented are not necessarily indicative of the results that may be expected for the full year. For further information, refer to the consolidated financial statements and notes thereto included in our Form 10-K for the year ended December 31, 2015.

Principles of Consolidation

We consolidate all entities in which we have a controlling financial interest. We are deemed to have a controlling financial interest in variable interest entities where we are the primary beneficiary. We are deemed to have a controlling financial interest in other entities when we own more than 50 percent of the outstanding voting shares and other shareholders do not have substantive rights to participate in management. For entities we control but do not wholly own, we record a noncontrolling interest within stockholders' equity for the portion of the entity's equity attributed to the noncontrolling ownership interests. As of September 30, 2016 and December 31, 2015, noncontrolling interests consist primarily of HSS Tracking Stock owned by DISH Network, as described in Note 4 below. All significant intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires us to make certain estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the balance sheets, the reported amounts of revenue and expense for each reporting period, and certain information disclosed in the notes to our condensed consolidated financial statements. Estimates are used in accounting for, among other things, amortization periods for deferred subscriber acquisition costs, revenue recognition using the percentage-of-completion method, allowances for doubtful accounts, allowances for sales returns and rebates, warranty obligations, self-insurance obligations, deferred taxes and related valuation allowances, uncertain tax positions, loss contingencies, fair value of financial instruments, fair value of stock-based compensation awards, fair value of assets and liabilities acquired in business combinations, lease classifications, asset impairment testing, useful lives and methods for depreciation and amortization of long-lived assets, and certain royalty obligations. We base our estimates and assumptions on historical experience, observable market inputs and on various other factors that we believe to be relevant under the circumstances. Due to the inherent uncertainty involved in making estimates, actual results may differ from previously estimated amounts, and such differences may be material to our condensed consolidated financial statements. Changing economic conditions may increase the inherent uncertainty in the estimates and assumptions indicated above. We review our estimates and assumptions periodically and the effects of revisions are reflected in the period they occur or prospectively if the revised estimate affects future periods.

Fair Value Measurements

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

- Level 1, defined as observable inputs being quoted prices in active markets for identical assets;
- Level 2, defined as observable inputs other than quoted prices included in Level 1, including quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which significant inputs and significant value drivers are observable in active markets; and

- Level 3, defined as unobservable inputs for which little or no market data exists, consistent with characteristics of the asset or liability that would be considered by market participants in a transaction to purchase or sell the asset or liability.

Transfers between levels in the fair value hierarchy are considered to occur at the beginning of the quarterly accounting period. There were no transfers between levels for each of the nine months ended September 30, 2016 or 2015.

As of September 30, 2016 and December 31, 2015, the carrying amounts of our cash and cash equivalents, trade accounts receivable, net of allowance for doubtful accounts, accounts payable and accrued liabilities were equal to or approximated fair value due to their short-term nature or proximity to current market rates.

Fair values of our current marketable investment securities are based on a variety of observable market inputs. For our investments in publicly traded equity securities and U.S. government securities, fair value ordinarily is determined based on a Level 1 measurement that reflects quoted prices for identical securities in active markets. Fair values of our investments in other marketable debt securities generally are based on Level 2 measurements as the markets for such debt securities are less active. Trades of identical debt securities on or near the measurement date are considered a strong indication of fair value. Matrix pricing techniques that consider par value, coupon rate, credit quality, maturity and other relevant features also may be used to determine fair value of our investments in marketable debt securities.

Fair values for our publicly traded debt are based on quoted market prices in less active markets and are categorized as Level 2 measurements. The fair values of our privately held debt are Level 2 measurements and are estimated to approximate their carrying amounts based on the proximity of their interest rates to current market rates. As of September 30, 2016 and December 31, 2015, the fair values of our in-orbit incentive obligations, based on measurements categorized within Level 2 of the fair value hierarchy, approximated their carrying amounts of $75.2 million and $79.3 million, respectively. We use fair value measurements from time to time in connection with impairment testing and the assignment of purchase consideration to assets and liabilities of acquired companies. Those fair value measurements typically include significant unobservable inputs and are categorized within Level 3 of the fair value hierarchy.

Research and Development

Costs incurred in research and development activities generally are expensed as incurred. A significant portion of our research and development costs are incurred in connection with the specific requirements of a customer’s order. In such instances, the amounts for these customer funded development efforts are included in cost of sales.

Cost of sales includes research and development costs incurred in connection with customer’s orders of approximately $22.6 million and $15.2 million for the three months ended September 30, 2016 and 2015, respectively, and $48.9 million and $45.7 million for the nine months ended September 30, 2016 and 2015, respectively. In addition, we incurred other research and development expenses of approximately $20.6 million and $19.9 million for the three months ended September 30, 2016 and 2015, respectively, and $61.8 million and $57.4 million for the nine months ended September 30, 2016 and 2015, respectively.

Capitalized Software Costs

Costs related to the procurement and development of software for internal-use and externally marketed software are capitalized and amortized using the straight-line method over the estimated useful life of the software, not in excess of five years. Capitalized costs of internal-use software are included in “Property and equipment, net” and capitalized costs of externally marketed software are included in “Other noncurrent assets, net” in our condensed consolidated balance sheets. Externally marketed software is generally installed in the equipment we sell to customers. We conduct software program reviews for externally marketed capitalized software costs at least annually, or as events and circumstances warrant such a review, to determine if capitalized software development costs are recoverable and to ensure that costs associated with programs that are no longer generating revenue are expensed. As of September 30, 2016 and December 31, 2015, the net carrying amount of externally marketed software was $73.6 million and $62.8 million, respectively, of which $45.6 million and $32.6 million, respectively is under development and not yet placed in service. We capitalized costs related to the development of externally marketed software of $6.2 million and $5.3 million for the three months ended September 30, 2016 and 2015, respectively, and $18.5 million and $17.0 million for the nine months ended September 30, 2016 and 2015, respectively. We recorded amortization expense relating to the development of externally marketed software of $2.5 million and $2.2 million for the three months ended September 30, 2016 and 2015, respectively, and $7.2 million and $6.1 million for the nine months ended September 30, 2016 and 2015, respectively. The weighted average useful life of our externally marketed software was approximately three years as of September 30, 2016.

New Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers ("ASU 2014-09"). It outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The core principle of the revenue model is that "an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services." In August 2015, the FASB issued Accounting Standards Update No. 2015-14, which deferred the mandatory effective date of ASU 2014-09 by one year. As a result, public entities are required to adopt the new revenue standard in annual periods beginning after December 15, 2017 and in interim periods within those annual periods. The standard may be applied either retrospectively to prior periods or as a cumulative-effect adjustment as of the date of adoption. Early adoption is permitted, but not before annual periods beginning after December 15, 2016. In March 2016, the FASB issued Accounting Standards Update No. 2016-08, Principal versus Agent Considerations, which clarifies the implementation guidance on principal versus agent considerations. In April 2016, the FASB issued Accounting Standards Update No. 2016-10, Identifying Performance Obligations and Licensing, which amends guidance on identifying performance obligations and accounting for licenses of intellectual property. In May 2016, the FASB issued Accounting Standards Update No. 2016-12, Narrow-Scope Improvements and Practical Expedients, which addresses collectibility, noncash consideration, completed contracts at transition, a practical expedient for contract modifications at transition, and an accounting policy election related to the presentation of sales taxes and other similar taxes collected from customers. We have not determined when we will adopt the new revenue standard or selected the transition method that we will apply upon adoption. We continue to evaluate the impact of the new standard and available adoption methods on our consolidated financial statements. We are in the process of evaluating arrangements with customers and identifying differences in accounting between new and old standards.

In February 2015, the FASB issued Accounting Standards Update No. 2015-02, Consolidation (Topic 810): Amendments to the Consolidation Analysis ("ASU 2015-02"). This standard amends the consolidation guidance for variable interest entities and general partners' investments in limited partnerships and similar entities. ASU 2015-02 was effective for annual periods beginning after December 15, 2015 and interim periods within those annual periods, and required either a retrospective or a modified retrospective approach as of the beginning of the fiscal year of adoption. We adopted ASU 2015-02 in the first quarter of 2016. The adoption of the standard did not impact our consolidated financial statements.

In April 2015, the FASB issued Accounting Standards Update No. 2015-03, Simplifying the Presentation of Debt Issuance Costs ("ASU 2015-03"). This standard requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of debt liability, consistent with debt discounts or premiums. ASU 2015-03 was effective for annual periods beginning after December 15, 2015 and interim periods within those annual periods, and required a retrospective approach to adoption. We adopted ASU 2015-03 in the first quarter of 2016. Upon adoption, we presented unamortized debt issuance cost previously reported in "Other noncurrent assets, net" with a carrying amount of $31.3 million as of December 31, 2015, as a reduction of our "Long-term debt and capital lease obligations, net of unamortized debt issuance costs".

In January 2016, the FASB issued Accounting Standards Update No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities (“ASU 2016-01”). This update substantially revises standards for the recognition, measurement and presentation of financial instruments, including requiring all equity investments to be measured at fair value with changes in the fair value recognized through net income. It also amends certain disclosure requirements associated with the fair value of financial instruments. ASU 2016-01 is effective for annual periods beginning after December 15, 2017, including interim periods within those annual periods, with early adoption permitted for certain requirements. We are assessing the impact of adopting this new accounting standard on our consolidated financial statements and related disclosures.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, Leases (“ASU 2016-02”). This standard requires lessees to recognize assets and liabilities for all leases with lease terms more than 12 months, including leases classified as operating leases. The standard also modifies the definition of a lease and the criteria for classifying leases as operating leases or financing leases. ASU 2016-02 is effective for annual periods beginning after December 15, 2018 and interim periods within those periods. Early adoption is permitted. We are assessing the impact of adopting this new accounting standard on our consolidated financial statements and related disclosures.

In March 2016, the FASB issued Accounting Standards Update No. 2016-09, Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09"), which simplifies the accounting for share-based payment awards. This update requires all excess tax benefits and deficiencies to be recognized as income tax expense or benefit and permits an entity to make an entity-wide policy election to either estimate forfeitures or recognize forfeitures as they occur. ASU 2016-09 is effective for annual periods beginning after December 15, 2016 and interim periods within those periods. The update specifies requirements for retrospective, modified retrospective or prospective application for the various amendments contained in the update. We are assessing the impact of adopting this new accounting standard on our consolidated financial statements and related disclosures.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13, Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"), which introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments. It also modifies the impairment model for available-for-sale debt securities and provides for a simplified accounting model for purchased financial assets with credit deterioration since their origination. ASU 2016-13 is effective for annual periods beginning after December 15, 2019 and interim periods within those periods. Early adoption is permitted. We are assessing the impact of adopting this new accounting standard on our consolidated financial statements and related disclosures.

In October 2016, the FASB issued Accounting Standards Update No. 2016-16, Intra-Entity Transfers of Assets Other Than Inventory ("ASU 2016-16"), which improves the accounting for the income tax consequences of intra-entity transfers of assets other than inventory. ASU 2016-16 is effective for annual periods beginning after December 15, 2017 and interim periods within those periods. Early adoption is permitted. We are assessing the impact of adopting this new accounting standard on our consolidated financial statements and related disclosures.

Note 3. Earnings per Share

We present basic earnings per share ("EPS") and diluted EPS for our Class A and Class B common stock. The EchoStar Tracking Stock (see Note 4 for definitions and a further discussion of the preferred tracking stock, the EchoStar Group and the Hughes Retail Group) is a participating security that shares in our consolidated earnings and therefore, we apply the two-class method to calculate EPS. Under the two-class method, we allocate net income or loss attributable to EchoStar between common stock and the EchoStar Tracking Stock considering both dividends declared on each class of stock and the participation rights of each class of stock in undistributed earnings. Based on the 51.89% economic interest in the Hughes Retail Group, represented by the EchoStar Tracking Stock, we allocate undistributed earnings to the EchoStar Tracking Stock based on 51.89% of the attributed net income or loss of the Hughes Retail Group. Moreover, because the reported amount of "Net income attributable to EchoStar" in our condensed consolidated statements of operations and comprehensive income (loss) excludes DISH Network's 28.11% economic interest (represented by the HSS Tracking Stock) in the net loss of the Hughes Retail Group (reported as a noncontrolling interest), the amount of consolidated net income or loss allocated to holders of Class A and Class B common stock effectively excludes an aggregate 80.0% of the attributed net loss of the Hughes Retail Group.

Basic EPS for our Class A and Class B common stock excludes potential dilution and is computed by dividing "Net income attributable to EchoStar common stock" by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if our common stock awards were exercised or vested. The potential dilution from common stock awards was computed using the treasury stock method based on the average market value of our Class A common stock during the period. The calculation of our diluted weighted-average common shares outstanding excluded options to purchase shares of our Class A common stock, whose effect would be anti-dilutive, of 3.6 million shares for each of the three and nine months ended September 30, 2016, and 3.1 million shares and 2.0 million shares for the three and nine months ended September 30, 2015, respectively.

The following table presents basic and diluted EPS amounts for all periods and the corresponding weighted-average shares outstanding used in the calculations.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2016	2015	2016	2015
	(In thousands, except per share amounts)			
Net income attributable to EchoStar	$36,801	$28,835	$141,742	$89,983
Less: Net loss attributable to EchoStar Tracking Stock	157	(1,267)	(1,709)	(7,421)
Net income attributable to EchoStar common stock	$36,644	$30,102	$143,451	$97,404
Weighted-average common shares outstanding :				
Class A and B common stock:				
Basic	93,898	92,500	93,661	92,253
Dilutive impact of stock awards outstanding	503	993	528	1,227
Diluted	94,401	93,493	94,189	93,480
Earnings per share:				
Class A and B common stock:				
Basic	$0.39	$0.33	$1.53	$1.06
Diluted	$0.39	$0.32	$1.52	$1.04

Note 4. Hughes Retail Preferred Tracking Stock

Satellite and Tracking Stock Transaction

In February 2014, EchoStar entered into agreements with certain subsidiaries of DISH Network pursuant to which, effective March 1, 2014, (i) EchoStar issued shares of its newly authorized Hughes Retail Preferred Tracking Stock (the “EchoStar Tracking Stock”) and Hughes Satellite Systems Corporation (“HSS”), a subsidiary of EchoStar, also issued shares of its newly authorized Hughes Retail Preferred Tracking Stock (the “HSS Tracking Stock” and together with the EchoStar Tracking Stock, the “Tracking Stock”) to DISH Network in exchange for five satellites (EchoStar I, EchoStar VII, EchoStar X, EchoStar XI, and EchoStar XIV), including the assumption of related in-orbit incentive obligations, and $11.4 million in cash and (ii) DISH Network began receiving certain satellite services on these five satellites from us (the “Satellite and Tracking Stock Transaction”). The Tracking Stock tracks the economic performance of the residential retail satellite broadband business of our Hughes segment, including certain operations, assets and liabilities attributed to such business (collectively, the “Hughes Retail Group” or “HRG”). The shares of the Tracking Stock issued to DISH Network represent an aggregate 80.0% economic interest in the Hughes Retail Group (the shares issued as EchoStar Tracking Stock represent a 51.89% economic interest in the Hughes Retail Group and the shares issued as HSS Tracking Stock represent a 28.11% economic interest in the Hughes Retail Group.) In addition to the remaining 20.0% economic interest in the Hughes Retail Group, EchoStar retains all economic interest in the wholesale satellite broadband business and other businesses of EchoStar. The Satellite and Tracking Stock Transaction was consistent with the long-term strategy of the Company to increase the scale of its satellite services business, which provides high-margin revenues, while continuing to benefit from the growth of the satellite broadband business. As a result of the additional satellites received in the Satellite and Tracking Stock Transaction, EchoStar increased short-term cash flow that it believes better positions it to achieve its strategic objectives.

EchoStar and HSS have adopted policy statements (the “Policy Statements”) setting forth management and allocation policies for purposes of attributing all of the business and operations of EchoStar to either the Hughes Retail Group or the “EchoStar Group,” which is defined as all other operations of EchoStar, including all existing and future businesses, other than the Hughes Retail Group. Among other things, the Policy Statements govern how assets, liabilities, revenue and expenses are attributed or allocated between HRG and the EchoStar Group. Such attributions and allocations generally do not affect the amounts reported in our consolidated financial statements, except for the attribution of stockholders’ equity and net income or loss between the holders of Tracking Stock and common stock. The Policy Statements also do not significantly affect the way that management assesses operating performance and allocates resources within our Hughes segment.

We provide unaudited attributed financial information for HRG and the EchoStar Group in an exhibit to our periodic reports on Form 10-Q and Annual Report on Form 10-K. For a description of the Tracking Stock and the initial recording of the Satellite and Tracking Stock Transaction in our consolidated financial statements, as well as the purpose and effect of the transaction on the Company and the Company's Class A common stock, see Note 4 to the consolidated financial statements in our most recent Annual Report on Form 10-K.

As of September 30, 2016, DISH Network held 6.3% and 7.5% of the aggregate number of outstanding shares of EchoStar and HSS capital stock, respectively.

Note 5. Other Comprehensive Income (Loss) and Related Tax Effects

We have not recognized any tax effects on foreign currency translation adjustments because they are not expected to result in future taxable income or deductions. We have not recognized any tax effects on unrealized gains or losses on available-for-sale securities because such gains or losses would affect the amount of existing capital loss carryforwards for which the related deferred tax asset has been fully offset by a valuation allowance.

Accumulated other comprehensive loss includes cumulative foreign currency translation losses of $110.3 million and $124.3 million as of September 30, 2016 and December 31, 2015, respectively.

Reclassifications out of accumulated other comprehensive loss for the three and nine months ended September 30, 2016 and 2015 were as follows:

Accumulated Other Comprehensive Loss Components	Affected Line Item in our Condensed Consolidated Statements of Operations	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
		2016	2015	2016	2015
		(In thousands)			
Recognition of realized gains on available-for-sale securities in net income (1)	Gains (losses) on marketable investment securities, net	$(10)	$(9)	$(5,584)	$(29)
Recognition of other-than-temporary impairment loss on available-for-sale securities in net income (2)	Other-than-temporary impairment loss on available-for-sale securities	—	1,243	—	5,892
Recognition of foreign currency translation losses in net income (3)	Other, net	—	—	—	1,889
Total reclassifications, net of tax and noncontrolling interests		$(10)	$1,234	$(5,584)	$7,752

(1) When available-for-sale securities are sold, the related unrealized gains and losses that were previously recognized in other comprehensive income (loss) are reclassified and recognized as "Gains (losses) on marketable investment securities, net" in our condensed consolidated statements of operations and comprehensive income (loss).

(2) In June 2015 and September 2015, we recorded other-than-temporary impairment losses on shares of certain common stock included in our strategic equity securities.

(3) As a result of the deconsolidation of several of our European subsidiaries in connection with our investment in SmarDTV SA in May 2015, the related cumulative translation adjustments that were previously recognized in other comprehensive income (loss) were reclassified and recognized as a loss within "Other income (expense)" in our condensed consolidated statements of operations and comprehensive income (loss). See Note 6 for further discussion.

Note 6. Investment Securities

Our marketable investment securities, restricted cash and cash equivalents, and investments in unconsolidated entities consisted of the following:

	As of	
	September 30, 2016	December 31, 2015
	(In thousands)	
Marketable investment securities—current, at fair value:		
Corporate bonds	$711,984	$562,236
Strategic equity securities	59,653	38,864
Other	31,672	11,238
Total marketable investment securities—current	803,309	612,338
Restricted marketable investment securities (1)	12,970	13,227
Total	816,279	625,565
Restricted cash and cash equivalents (1)	681	7,775
Investments in unconsolidated entities—noncurrent:		
Cost method	81,174	81,174
Equity method	121,098	128,090
Total investments in unconsolidated entities—noncurrent	202,272	209,264
Total marketable investment securities, restricted cash and cash equivalents, and investments in unconsolidated entities	$1,019,232	$842,604

(1) Restricted marketable investment securities and restricted cash and cash equivalents are included in “Restricted cash and marketable investment securities” in our condensed consolidated balance sheets.

Marketable Investment Securities

Our marketable investment securities portfolio consists of various debt and equity instruments, which generally are classified as available-for-sale or trading securities depending on our investment strategy for those securities. The value of our investment portfolio depends on the value of such securities and other instruments comprising the portfolio.

Corporate Bonds

Our corporate bond portfolio includes debt instruments issued by individual corporations, primarily in the industrial and financial services industries.

Strategic Equity Securities

Our strategic investment portfolio consists of investments in shares of common stock of public companies, which are highly speculative and have experienced and continue to experience volatility. We did not receive any dividend income for the three and nine months ended September 30, 2016 or 2015.

For the three and nine months ended September 30, 2016, “Gains (losses) on marketable investment securities, net” included losses of zero and $1.0 million, respectively, related to trading securities that we held as of September 30, 2016. For each of the three and nine months ended September 30, 2015, “Gains (losses) on marketable investment securities, net” included losses of$3.9 million and $5.5 million, respectively, related to trading securities that we held as of September 30, 2015.

Other

Our other current marketable investment securities portfolio includes investments in various debt instruments, including U.S. government bonds and mutual funds.

Restricted Cash and Marketable Investment Securities

As of September 30, 2016 and December 31, 2015, our restricted marketable investment securities, together with our restricted cash, included amounts required as collateral for our letters of credit or surety bonds.

Unrealized Gains (Losses) on Available-for-Sale Securities

The components of our available-for-sale investments are summarized in the table below.

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
	(In thousands)			
As of September 30, 2016				
Debt securities:				
Corporate bonds	$711,651	$481	$(148)	$711,984
Other (including restricted)	40,051	17	—	40,068
Equity securities - strategic	43,328	11,645	(833)	54,140
Total	$795,030	$12,143	$(981)	$806,192
As of December 31, 2015				
Debt securities:				
Corporate bonds	$562,849	$10	$(623)	$562,236
Other (including restricted)	24,495	—	(30)	24,465
Equity securities - strategic	20,855	7,748	(82)	28,521
Total	$608,199	$7,758	$(735)	$615,222

As of September 30, 2016, restricted and non-restricted available-for-sale securities included debt securities of $684.4 million with contractual maturities of one year or less and $67.7 million with contractual maturities greater than one year. We may realize proceeds from certain investments prior to their contractual maturity as a result of our ability to sell these securities prior to their contractual maturity.

Available-for-Sale Securities in a Loss Position

The following table reflects the length of time that our available-for-sale securities have been in an unrealized loss position. We do not intend to sell these securities before they recover or mature, and it is more likely than not that we will hold these securities until they recover or mature. We believe that changes in the estimated fair values of these securities are primarily related to temporary market conditions.

	As of			
	September 30, 2016		December 31, 2015	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
	(In thousands)			
Less than 12 months	$271,067	$ (973)	$364,160	$ (609)
12 months or more	1,564	(8)	149,889	(126)
Total	$272,631	$ (981)	$514,049	$ (735)

Sales of Marketable Investment Securities

We recognized gains from the sales of our available-for-sale securities of de minimis and $5.6 million for the three and nine months ended September 30, 2016, respectively, and de minimis gains for each of the three and nine months ended September 30, 2015. We recognized de minimis losses from the sales of our available-for-sale securities for each of the three and nine months ended September 30, 2016 and 2015.

Proceeds from sales of our available-for-sale securities totaled $4.0 million for each of the three months ended September 30, 2016 and 2015, and $35.8 million and $94.2 million for the nine months ended September 30, 2016 and 2015, respectively.

Fair Value Measurements

Our current marketable investment securities are measured at fair value on a recurring basis as summarized in the table below. As of September 30, 2016 and December 31, 2015, we did not have investments that were categorized within Level 3 of the fair value hierarchy.

	As of					
	September 30, 2016			December 31, 2015		
	Total	Level 1	Level 2	Total	Level 1	Level 2
	(In thousands)					
Cash equivalents (including restricted)	$2,143,205	$3,052	$2,140,153	$840,950	$38,771	$802,179
Debt securities:						
Corporate bonds	$711,984	$—	$711,984	$562,236	$—	$562,236
Other (including restricted)	44,642	12,956	31,686	24,465	12,078	12,387
Equity securities - strategic	59,653	59,653	—	38,864	38,864	—
Total marketable investment securities	$816,279	$72,609	$743,670	$625,565	$50,942	$574,623

Investments in Unconsolidated Entities — Noncurrent

We have several strategic investments in certain non-publicly traded equity securities that are accounted for using either the equity or the cost method of accounting. Our ability to realize value from our strategic investments in companies that are not publicly traded depends on the success of those companies' businesses and their ability to obtain sufficient capital to execute their business plans. Because private markets are not as liquid as public markets, there is also increased risk that we will not be able to sell these investments, or that when we desire to sell them we will not be able to obtain fair value for them.

We recorded cash distributions from certain of our investments accounted for using the equity method of $5.0 million and $15.0 million for the three and nine months ended September 30, 2016, respectively. We recorded cash distributions from certain of our investments accounted for using the equity method of $5.0 million for each of the three and nine months ended September 30, 2015. These cash distributions were determined to be a return on investment and reported in cash flows from operating activities in our condensed consolidated statement of cash flows.

In June 2015, we made an equity investment in WorldVu Satellites Limited ("OneWeb"), a global low-earth orbit satellite service company. OneWeb plans to develop and operate a global network of low-earth orbit Ku-band satellites to provide internet access to fixed and mobile terminals. We do not exercise significant influence over the management of OneWeb; accordingly, we account for the investment using the cost method.

In May 2015, we acquired a 22.5% interest in the equity and subordinated debt of SmarDTV SA ("SmarDTV"), a Swiss subsidiary of Kudelski SA that offers set-top boxes and conditional access modules, in exchange for cash of $13.9 million and the contribution of several of our European subsidiaries to SmarDTV. We recorded our initial investment in SmarDTV at $20.0 million, representing our estimate of the investment's fair value using discounted cash flow techniques. Our estimate included significant unobservable inputs related to SmarDTV’s future operations and is categorized within Level 3 of the fair value hierarchy. As of the acquisition date, we deconsolidated the contributed entities and recognized a $2.6 million loss within “Other income (expense)” in our condensed consolidated statements of operations and comprehensive income (loss), consisting of: (i) a $0.7 million loss resulting from our initial investment (at fair value) being less than the sum of our $13.9 million cash payment and the carrying amount of the net assets of the deconsolidated entities and (ii) the reclassification from accumulated other comprehensive loss of $1.9 million in foreign currency translation adjustments related to the deconsolidated entities. The net assets of the deconsolidated entities included property and equipment of $6.7 million and cash of $0.8 million. We have the ability to exercise significant influence over SmarDTV and therefore account for our investment using the equity method. We and SmarDTV also entered into a services agreement pursuant to which our EchoStar Technologies segment purchases certain engineering services from SmarDTV. See Note 16 for information about our related party transactions with SmarDTV subsequent to the date of our initial investment.

Note 7. Trade Accounts Receivable

Our trade accounts receivable consisted of the following:

	As of September 30, 2016	December 31, 2015
	(In thousands)	
Trade accounts receivable	$165,532	$168,714
Contracts in process, net	26,186	23,011
Total trade accounts receivable	191,718	191,725
Allowance for doubtful accounts	(13,817)	(12,485)
Trade accounts receivable - DISH Network	330,300	277,159
Total trade accounts receivable, net	$508,201	$456,399

As of September 30, 2016 and December 31, 2015, progress billings offset against contracts in process amounted to $3.9 million and $2.9 million, respectively.

Note 8. Inventory

Our inventory consisted of the following:

	As of September 30, 2016	December 31, 2015
	(In thousands)	
Finished goods	$56,985	$ 52,839
Raw materials	7,697	9,042
Work-in-process	9,107	5,129
Total inventory	$73,789	$ 67,010

As a result of our decision in July 2016 not to proceed with our direct-to-consumer security and home automation solution product offering and associated services, “Selling, general and administrative expenses” of our EchoStar Technologies segment for the three and nine months ended September 30, 2016 includes a $9.1 million adjustment to reduce inventory to its estimated net realizable value.

Note 9. Property and Equipment

Property and equipment consisted of the following:

	Depreciable Life (In Years)	As of September 30, 2016	December 31, 2015
		(In thousands)	
Land	—	$42,453	$41,457
Buildings and improvements	1-40	370,417	367,947
Furniture, fixtures, equipment and other	1-12	1,329,692	1,254,325
Customer rental equipment	2-4	662,994	588,430
Satellites - owned	2-15	2,381,120	2,381,120
Satellites acquired under capital leases	10-15	782,845	665,518
Construction in progress	—	1,362,572	1,112,267
Total property and equipment		6,932,093	6,411,064
Accumulated depreciation		(3,303,714)	(2,998,074)
Property and equipment, net		$3,628,379	$3,412,990

Construction in progress consisted of the following:

	As of September 30, 2016	December 31, 2015
	(In thousands)	
Progress amounts for satellite construction, including prepayments under capital leases and launch services costs	$1,154,066	$963,103
Satellite related equipment	160,702	126,373
Other	47,804	22,791
Construction in progress	$1,362,572	$1,112,267

Construction in progress included the following owned and leased satellites under construction or undergoing in-orbit testing as of September 30, 2016.

Satellites	Segment	Expected Launch Date
EchoStar XIX	Other	Fourth quarter of 2016
EchoStar XXI	Other	Fourth quarter of 2016/ First quarter of 2017
EchoStar XXIII	Other	Fourth quarter of 2016/ First quarter of 2017
EchoStar 105/SES-11	ESS	First half of 2017
Telesat T19V (“63 West”) (1)	Hughes	Second quarter of 2018

(1) We entered into a satellite services agreement and made prepayments for certain capacity on this satellite once launched, but are not a party to the construction contract.

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

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2016	2015	2016	2015
	(In thousands)			
Satellites	$46,965	$51,436	$140,895	$149,677
Furniture, fixtures, equipment and other	31,162	29,104	89,247	89,504
Customer rental equipment	28,652	30,839	86,789	91,550
Buildings and improvements	3,065	3,325	9,218	10,183
Total depreciation expense	$109,844	$114,704	$326,149	$340,914

Satellites

As of September 30, 2016, we utilized in support of our operations, 18 of our owned and leased satellites in geosynchronous orbit, approximately 22,300 miles above the equator. We depreciate our owned satellites on a straight-line basis over the estimated useful life of each satellite. Three of our satellites are accounted for as capital leases and are depreciated on a straight-line basis over their respective lease terms. We utilized one satellite that is accounted for as an operating lease and not included in property and equipment as of September 30, 2016.

Recent Developments

Eutelsat 65 West A. The Eutelsat 65 West A satellite was launched in March 2016 and our Hughes segment began to offer consumer broadband services in Brazil using our leased Ka-band payload on the satellite in July 2016.

EchoStar XXI and EchoStar XXIII. Due to anomalies experienced by our launch providers, the expected launch dates of our EchoStar XXI and EchoStar XXIII satellites have been delayed; however, we currently expect to launch both satellites in the fourth quarter of 2016 or the first quarter of 2017. We are in the process of evaluating the implications of these delays, including, without limitation, potential increased costs, regulatory and contractual milestone compliance and other satellite resource allocations. We have regulatory obligations to meet certain milestones by the fourth quarter of 2016 regarding the operations of the EchoStar XXI satellite across the European Union. We may need to seek extensions of certain of these requirements, which may or may not be granted and, if granted, may be subject to penalties, additional conditions or requirements. We also have regulatory obligations to meet certain in-service milestones by the second quarter of 2017 for our Brazilian license at 45 west longitude for the Ka, Ku, and S-band frequency bands. While we expect the EchoStar XXIII satellite to meet our regulatory milestone for the Ku-band, if we do miss our milestone, we may be subject to the imposition of penalties, additional conditions or other requirements.

EchoStar 105/SES-11. Due to anomalies experienced by our launch provider, the expected launch date of our EchoStar 105/SES-11 satellite has been delayed until the first half of 2017. Our Ku-band payload on the EchoStar 105/SES-11 satellite will replace our current capacity on the AMC-15 satellite.

Satellite Anomalies

Our satellites may experience anomalies from time to time, some of which may have a significant adverse impact on their remaining useful lives, the commercial operation of the satellites or our operating results. We are not aware of any anomalies with respect to our owned or leased satellites that have had any such material adverse effect during the nine months ended September 30, 2016. There can be no assurance, however, that anomalies will not have any such adverse impacts in the future. In addition, there can be no assurance that we can recover critical transmission capacity in the event one or more of our in-orbit satellites were to fail.

Note 10. Goodwill, Regulatory Authorizations and Other Intangible Assets

Goodwill

The excess of the cost of an acquired business over the fair values of net tangible and identifiable intangible assets at the time of the acquisition is recorded as goodwill. Goodwill is assigned to the reporting units within our operating segments and is subject to impairment testing annually, or more frequently when events or changes in circumstances indicate the fair value of a reporting unit is more likely than not less than its carrying amount.

As of September 30, 2016 and December 31, 2015, approximately $504.2 million of our goodwill was assigned to reporting units of our Hughes segment and $6.4 million was assigned to the Move Networks reporting unit of our EchoStar Technologies segment. We test this goodwill for impairment annually in the second quarter and third quarter, respectively. Based on our qualitative assessment of impairment of our Hughes segment goodwill in the second quarter of 2016, we determined that it was not more likely than not that the fair values of the Hughes segment reporting units were less than the corresponding carrying amounts, including goodwill.

Regulatory Authorizations

Regulatory authorizations included amounts with finite and indefinite useful lives, as follows:

	As of December 31, 2015	Additions	Currency Translation Adjustment	As of September 30, 2016
	(In thousands)			
Finite useful lives:				
Cost	$82,007	$—	$ 8,957	$ 90,964
Accumulated amortization	(9,852)	(3,508)	(1,050)	(14,410)
Net	72,155	(3,508)	7,907	76,554
Indefinite lives	471,657	—	—	471,657
Total regulatory authorizations, net	$543,812	$(3,508)	$ 7,907	$ 548,211

Other Intangible Assets

Our other intangible assets, which are subject to amortization, consisted of the following:

	Weighted Average Useful Life (in Years)	As of September 30, 2016			December 31, 2015		
		Cost	Accumulated Amortization	Carrying Amount	Cost	Accumulated Amortization	Carrying Amount
		(In thousands)					
Customer relationships	8	$293,932	$(232,017)	$61,915	$293,932	$(213,543)	$80,389
Contract-based	4	69,440	(69,440)	—	255,366	(251,493)	3,873
Technology-based	7	137,197	(122,526)	14,671	137,337	(111,840)	25,497
Trademark portfolio	20	29,700	(7,920)	21,780	29,700	(6,806)	22,894
Total other intangible assets		$530,269	$(431,903)	$98,366	$716,335	$(583,682)	$132,653

Customer relationships are amortized predominantly in relation to the expected contribution of cash flow to the business over the life of the intangible asset. Other intangible assets are amortized on a straight-line basis over the periods the assets are expected to contribute to our cash flows. Intangible asset amortization expense, including amortization of regulatory authorizations with finite lives and externally marketed capitalized software, was $13.8 million and $18.2 million for the three months ended September 30, 2016 and 2015, respectively, and $44.7 million and $57.6 million for the nine months ended September 30, 2016 and 2015, respectively.

Note 11. Debt and Capital Lease Obligations

The following table summarizes the carrying amounts and fair values of our debt:

		As of			
	Effective	September 30, 2016		December 31, 2015	
	Interest Rate	Carrying Amount	Fair Value	Carrying Amount	Fair Value
		(In thousands)			
6 1/2% Senior Secured Notes due 2019	6.959%	$990,000	$1,084,674	$990,000	$1,071,675
7 5/8% Senior Unsecured Notes due 2021	8.062%	900,000	962,973	900,000	954,000
5 1/4% Senior Secured Notes due 2026	5.317%	750,000	742,500	—	—
6 5/8% Senior Unsecured Notes due 2026	6.685%	750,000	726,765	—	—
Other		—	—	803	803
Less: Unamortized debt issuance costs		(33,616)	—	(31,276)	—
Subtotal		3,356,384	$3,516,912	1,859,527	$2,026,478
Capital lease obligations		311,306		332,838	
Total debt and capital lease obligations		3,667,690		2,192,365	
Less: Current portion		(37,717)		(35,698)	
Long-term debt and capital lease obligations, net of unamortized debt issuance costs		$3,629,973		$2,156,667	

The fair values of our debt are estimates categorized within Level 2 of the fair value hierarchy.

On May 6, 2016, HSS offered to repurchase for cash all or any part of its outstanding 6 1/2% Senior Secured Notes due 2019 (the “2019 Senior Secured Notes”) and its outstanding 7 5/8% Senior Notes due 2021 (the “2021 Senior Unsecured 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. The Change of Control Offers expired on June 6, 2016, with none of the 2019 Senior Secured Notes or the 2021 Senior Unsecured Notes tendered for repurchase.

Issuance of Secured and Unsecured Notes

On July 27, 2016, HSS issued $750 million aggregate principal amount of 5.250% Senior Secured Notes due August 1, 2026 (the “2026 Senior Secured Notes”) pursuant to an Indenture dated July 27, 2016 (the “2016 Secured Indenture”) at an issue price of 100% of their aggregate principal amount and $750 million aggregate principal amount of 6.625% Senior Unsecured Notes due August 1, 2026 (the “2026 Senior Unsecured Notes” and together with the 2026 Senior Secured Notes, the “2026 Notes”) pursuant to an Indenture dated July 27, 2016 (the “2016 Unsecured Indenture” and together with the 2016 Secured Indenture, the “2016 Indentures”) at an issue price of 100% of their aggregate principal amount. Interest on the 2026 Notes will be payable semi-annually on February 1 and August 1 of each year commencing February 1, 2017.

The 2026 Notes are redeemable, in whole or in part at any time at a redemption price equal to 100% of the principal amount, plus accrued and unpaid interest to the date of redemption and a “make-whole” premium calculated under the 2016 Indentures. HSS may also redeem up to 10% of the outstanding 2026 Senior Secured Notes per year prior to August 1, 2020 at a redemption price equal to 103% of the principal amount thereof plus accrued and unpaid interest to the date of redemption. In addition, HSS may, at any time prior to August 1, 2019, with the net cash proceeds from certain equity offerings or capital contributions, redeem up to 35% of the 2026 Senior Secured Notes, at 105.25% of the principal amount, and up to 35% of the 2026 Senior Unsecured Notes, at a redemption price equal to 106.625% of the principal amount plus, in each case, accrued and unpaid interest on the 2026 Notes being redeemed to the date of redemption.

The 2026 Senior Secured Notes are:

- secured obligations of HSS;
- secured by security interests in substantially all existing and future tangible and intangible assets of HSS and certain of its subsidiaries on a first priority basis, subject to certain exceptions;

- ranked equally and ratably with the existing 2019 Senior Secured Notes;
- effectively junior to HSS' obligations that are secured by assets that are not part of the collateral that secures the 2026 Senior Secured Notes, in each case, to the extent of the value of the collateral securing such obligations;
- effectively senior to HSS' existing and future unsecured obligations to the extent of the value of the collateral securing the 2026 Senior Secured Notes, after giving effect to permitted liens as provided in the 2016 Secured Indenture;
- senior in right of payment to all existing and future obligations of HSS that are expressly subordinated to the 2026 Senior Secured Notes;
- structurally junior to any existing and future obligations of any of HSS' subsidiaries that do not guarantee the 2026 Senior Secured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of HSS' subsidiaries, which guarantees rank equally with all of the guarantors' existing and future unsubordinated indebtedness and effectively senior to such guarantors' existing and future obligations to the extent of the value of the assets securing the 2026 Senior Secured Notes.

The 2026 Senior Unsecured Notes are:

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

The 2026 Notes are guaranteed by the same HSS subsidiary guarantors that currently guarantee the 2019 Senior Secured Notes and the 2021 Senior Unsecured Notes.

Subject to certain exceptions, the 2016 Indentures contain restrictive covenants that, among other things, impose limitations on HSS' ability and, in certain instances, the ability of certain of HSS' subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on HSS' capital stock or repurchase HSS' capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on the ability of certain of HSS' subsidiaries to pay dividends, make distributions, make other payments, or transfer assets to HSS or its subsidiaries.

In the event of a Change of Control, as defined in the 2016 Indentures, HSS would be required to make an offer to repurchase all or any part of a holder's 2026 Notes at a purchase price equal to 101.0% of the aggregate principal amount thereof, together with accrued and unpaid interest to the date of repurchase.

The 2016 Indentures provide for customary events of default, including, among other things, nonpayment, breach of the covenants in the 2016 Indentures, payment defaults or acceleration of other indebtedness, a failure to pay certain judgments and certain events of bankruptcy, insolvency and reorganization. If any event of default occurs and is continuing, the trustee or the holders of at least 25% in principal amount of the applicable then outstanding 2026 Notes may declare all the applicable 2026 Notes to be due and payable immediately, together with any accrued and unpaid interest.

As discussed above, HSS and certain of its subsidiaries have granted a first priority security interest in substantially all of their assets, subject to certain exceptions and permitted liens, to secure HSS' obligations under the 2019 Senior Secured Notes and the 2026 Senior Secured Notes.

Under the terms of a registration rights agreement, HSS has agreed to register notes having substantially identical terms as the 2026 Notes with the SEC as part of an offer to exchange freely tradable exchange notes for the 2026 Notes.

Note 12. Income Taxes

Our tax provision for interim periods is determined using an estimate of our annual effective tax rate, adjusted for discrete items, if any, that are taken into account in the relevant period. Each quarter we update our estimate of the annual effective tax rate, and if our estimated tax rate changes, we make a cumulative adjustment.

Our quarterly tax provision, and our quarterly estimate of our annual effective tax rate, is subject to significant volatility due to several factors, including income and losses from investments for which we have a full valuation allowance, changes in tax laws and relative changes in unrecognized tax benefits. Additionally, our effective tax rate can be more or less volatile based on the amount of pre-tax income. For example, the impact of discrete items and non-deductible expenses on our effective tax rate is greater when our pre-tax income is lower.

Income tax expense was approximately $75.1 million and $65.8 million for the nine months ended September 30, 2016 and 2015, respectively. Our estimated effective income tax rate was 34.6% and 43.1% for the nine months ended September 30, 2016 and 2015, respectively. The variations in our current year effective tax rate from the U.S. federal statutory rate for the nine months ended September 30, 2016 were primarily due to research and experimentation credits, partially offset by various permanent tax differences. The variations in our effective tax rate from the U.S. federal statutory rate for the nine months ended September 30, 2015 were primarily due to the increase in our valuation allowance associated with certain foreign losses and realized and unrealized losses that are capital in nature, partially offset by research and experimentation tax credits.

Note 13. Stock-Based Compensation

We maintain stock incentive plans to attract and retain officers, directors and key employees. Stock awards under these plans include both performance based and non-performance based stock incentives. We granted stock options and other incentive awards to our employees and nonemployee directors to acquire 137,470 shares and 27,990 shares of our Class A common stock for the three months ended September 30, 2016 and 2015, respectively, and 722,350 shares and 911,970 shares of our Class A common stock for the nine months ended September 30, 2016 and 2015, respectively.

In 2015, we granted 100,000 restricted stock units (“RSUs”). The RSUs vested based on the attainment of certain quarterly company performance criteria for the second, third and fourth quarters of 2015. In 2015, 66,666 of the RSUs vested and in February 2016 the remaining 33,334 RSUs vested.

Total non-cash, stock-based compensation expense for all of our employees is shown in the following table for the three and nine months ended September 30, 2016 and 2015 and was assigned to the same expense categories as the base compensation for such employees:

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2016	2015	2016	2015
	(In thousands)			
Research and development expenses	$731	$1,270	$2,491	$3,318
Selling, general and administrative expenses	2,894	4,646	9,462	12,886
Total stock-based compensation	$3,625	$5,916	$11,953	$16,204

As of September 30, 2016, total unrecognized stock-based compensation cost, net of estimated forfeitures, related to our unvested stock awards was $29.7 million.

Note 14. Commitments and Contingencies

Commitments

As of September 30, 2016, our satellite-related obligations were approximately $786.0 million. Our satellite-related obligations primarily include payments pursuant to agreements for the construction of the EchoStar XIX, EchoStar XXI, EchoStar XXIII, and EchoStar 105/SES-11 satellites; payments pursuant to launch services contracts and regulatory authorizations; executory costs for our capital lease satellites; costs under satellite service agreements; and in-orbit incentives relating to certain satellites, as well as commitments for long-term satellite operating leases and satellite service arrangements.

Contingencies

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

Separation Agreement

In connection with the Spin-off, we entered into a separation agreement with DISH Network that provides, among other things, for the division of certain liabilities, including liabilities resulting from litigation. Under the terms of the separation agreement, we have assumed certain liabilities that relate to our business, including certain designated liabilities for acts or omissions that occurred prior to the Spin-off. Certain specific provisions govern intellectual property related claims under which, generally, we will only be liable for our acts or omissions following the Spin-off and DISH Network will indemnify us for any liabilities or damages resulting from intellectual property claims relating to the period prior to the Spin-off, as well as DISH Network's acts or omissions following the Spin-off.

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/or seek an indeterminate amount of damages. We regularly evaluate the status of the legal proceedings in which we are involved to assess whether a loss is probable or there is a reasonable possibility that a loss or an additional loss may have been incurred and to determine if accruals are appropriate. We record an accrual for litigation and other loss contingencies when we determine that a loss is probable and the amount of the loss can be reasonably estimated. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of possible loss or range of loss can be made. There can be no assurance that legal proceedings against us will be resolved in amounts that will not differ from the amounts of our recorded accruals. Legal fees and other costs of defending litigation are charged to expense as incurred.

For certain cases described below, management is unable to predict with any degree of certainty the outcome or provide a meaningful estimate of the possible loss or range of possible loss because, among other reasons, (i) the proceedings are in various stages; (ii) damages have not been sought or specified; (iii) damages are unsupported, indeterminate and/or exaggerated in management’s opinion; (iv) there is uncertainty as to the outcome of pending 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 are involved (as with many patent-related cases). 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, operating results or cash flows, though there is no assurance that the resolution and outcomes of these proceedings, individually or in the aggregate, will not be material to our financial condition, operating results or cash flows for any particular period, depending, in part, upon the operating results for such period.

We intend to vigorously defend the proceedings against us. In the event that a court ultimately rules against us, we may be subject to adverse consequences, including, without limitation, substantial damages, which may include treble damages, fines, penalties, compensatory damages and/or other equitable or injunctive relief that could require us to materially modify our business operations or certain products or services that we offer to our consumers. In addition, adverse decisions against DISH Network in the proceedings described below could decrease the number of products and components we sell to DISH Network, which could have a material adverse effect on our business operations and our financial condition, results of operation and cash flows.

California Institute of Technology

On October 1, 2013, the California Institute of Technology (“Caltech”) filed suit against two of our subsidiaries, Hughes Communications, Inc. and Hughes Network Systems, LLC (“HNS”), as well as against DISH Network, DISH Network L.L.C., and dishNET Satellite Broadband L.L.C., in the United States District Court for the Central District of California alleging infringement of United States Patent Nos. 7,116,710; 7,421,032; 7,916,781; and 8,284,833, each of which is entitled “Serial Concatenation of Interleaved Convolutional Codes forming Turbo-Like Codes.” Caltech asserted that encoding data as specified by the DVB-S2 standard infringes each of the asserted patents. In the operative Amended Complaint, served on March 6, 2014, Caltech claims that the Hopper^{TM} set-top box that we design and sell to DISH Network, as well as certain of our Hughes segment’s satellite broadband products and services, infringe the asserted patents by implementing the DVB-S2 standard. On February 17, 2015, Caltech filed a second complaint in the same district against the same defendants alleging that HNS’ Gen4 HT1000 and HT1100 products infringe the same patents asserted in the first case. On May 25, 2016, we, the DISH Network defendants and Caltech entered into a settlement agreement pursuant to which the Court dismissed with prejudice all of the claims in these actions on May 31, 2016.

ClearPlay, Inc.

On March 13, 2014, ClearPlay, Inc. (“ClearPlay”) filed a complaint against EchoStar Corporation and our subsidiary, EchoStar Technologies L.L.C., as well as against DISH Network and DISH Network 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, entitled “Multimedia Content Navigation and Playback”; 7,526,784, entitled “Delivery of Navigation Data for Playback of Audio and Video Content”; 7,543,318, entitled “Delivery of Navigation Data for Playback of Audio and Video Content”; 7,577,970, entitled “Multimedia Content Navigation and Playback”; and 8,117,282, entitled “Media Player Configured to Receive Playback Filters From Alternative Storage Mediums.” ClearPlay alleges that the AutoHop™ feature of the Hopper™ set-top box infringes the asserted patents. On February 11, 2015, the Court stayed the case pending various third-party challenges before the United

States Patent and Trademark Office regarding the validity of certain of the patents ClearPlay asserted in the case. 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 and 318 patents, 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.

CRFD Research, Inc. (a subsidiary of Marathon Patent Group, Inc.)

On January 17, 2014, CRFD Research, Inc. (“CRFD”) filed a complaint against EchoStar Corporation and our subsidiary, EchoStar Technologies L.L.C., as well as against DISH Network, DISH DBS Corporation and DISH Network L.L.C., in United States District Court for the District of Delaware, alleging infringement of United States Patent No. 7,191,233 (the “233 patent”). The 233 patent is entitled “System for Automated, Mid-Session, User-Directed, Device-to-Device Session Transfer System,” and relates to transferring an ongoing software session from one device to another. CRFD alleges that certain of our set-top boxes infringe the 233 patent. On the same day, CRFD filed patent infringement complaints against AT&T Inc.; Comcast Corp.; DirecTV; Time Warner Cable Inc.; Cox Communications, Inc.; Level 3 Communications, Inc.; Akamai Technologies, Inc.; Cablevision Systems Corp. and Limelight Networks, Inc. On January 26, 2015, we and DISH Network filed a petition before the United States Patent and Trademark Office challenging the validity of certain claims of the 233 patent, which was subsequently instituted along with two third-party petitions also challenging the validity of certain claims of the 233 patent. On June 4, 2015, the litigation in the District Court was ordered stayed pending resolution of our petition before the United States Patent and Trademark Office, and on January 16, 2016, the United States Patent and Trademark Office held oral arguments on the merits of the petition. On June 1, 2016, the Patent and Trademark Office found that four of the challenged thirty claims were unpatentable. On July 5, 2016, CRFD filed a notice of appeal to the United States Court of Appeals for the Federal Circuit. CRFD is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

Elbit

On January 23, 2015, Elbit Systems Land and C4I LTD and Elbit Systems of America Ltd. (together referred to as “Elbit”) filed a complaint against our subsidiary HNS, as well as against Black Elk Energy Offshore Operations, LLC, Bluetide Communications, Inc. and Helm Hotels Group, in the United States District Court for the Eastern District of Texas, alleging infringement of United States Patent Nos. 6,240,073 (the “073 patent”) and 7,245,874 (“874 patent”). The 073 patent is entitled “Reverse Link for a Satellite Communication Network” and the 874 patent is entitled “Infrastructure for Telephony Network.” Elbit alleges that the 073 patent is infringed by broadband satellite systems that practice the Internet Protocol Over Satellite standard. Elbit alleges that the 874 patent is infringed by the manufacture and sale of broadband satellite systems that provide cellular backhaul service via connections to E1 or T1 interfaces at cellular backhaul base stations. On April 2, 2015, Elbit filed an amended complaint removing Helm Hotels Group as a defendant, but making similar allegations against a new defendant, Country Home Investments, Inc. On November 3 and 4, 2015, and January 22, 2016, the defendants filed petitions before the United States Patent and Trademark Office challenging the validity of the patents in suit, which the Patent and Trademark Office subsequently declined to institute. On April 13, 2016, the defendants answered Elbit’s complaint. Trial is scheduled to commence on July 31, 2017.

The Hopper Litigation

On May 24, 2012, DISH Network L.L.C., filed suit in the United States District Court for the Southern District of New York against American Broadcasting Companies, Inc. (“ABC”), CBS Corporation (“CBS”), Fox Entertainment Group, Inc., Fox Television Holdings, Inc., Fox Cable Network Services, L.L.C. (collectively, “Fox”) and NBCUniversal Media, LLC (“NBC”). The lawsuit sought a declaratory judgment that DISH Network L.L.C is not infringing any defendant’s copyright, or breaching any defendant’s retransmission consent agreement, by virtue of the PrimeTime Anytime^{TM} and AutoHop^{TM} features of the Hopper^{TM} set-top boxes we design and sell to DISH Network. A consumer can use the PrimeTime Anytime feature at his or her option, to record certain primetime programs airing on ABC, CBS, Fox, and/or NBC up to every night, and to store those recordings for up to eight days. A consumer can use the AutoHop feature at his or her option, to watch certain recordings the subscriber made with our PrimeTime Anytime feature, commercial-free, if played back at a certain point after the show’s original airing.

Later on May 24, 2012, (i) Fox Broadcasting Company, Twentieth Century Fox Film Corp. and Fox Television Holdings, Inc. filed a lawsuit against DISH Network and DISH Network L.L.C. (collectively, "DISH") in the United States District Court for the Central District of California, alleging that the PrimeTime Anytime feature, the AutoHop feature, as well as DISH's use of Slingbox unit's placeshifting functionality infringe their copyrights and breach their retransmission consent agreements, (ii) NBC Studios LLC, Universal Network Television, LLC, Open 4Business Productions LLC and NBCUniversal Media, LLC filed a lawsuit against DISH in the United States District Court for the Central District of California, alleging that the PrimeTime Anytime feature and the AutoHop feature infringe their copyrights, and (iii) CBS Broadcasting Inc., CBS Studios Inc. and Survivor Productions LLC filed a lawsuit against DISH in the United States District Court for the Central District of California, alleging that the PrimeTime Anytime feature and the AutoHop feature infringe their copyrights.

As a result of certain parties' competing counterclaims and venue-related motions brought in both the New York and California actions, as described below, and certain networks filing various amended complaints, the claims proceeded in the following venues: (1) the copyright and contract claims regarding the ABC and CBS parties in New York; and (2) the copyright and contract claims regarding the Fox and NBC parties in California.

California Actions. On August 17, 2012, the NBC plaintiffs filed a first amended complaint in their California action adding EchoStar Corporation and our subsidiary EchoStar Technologies L.L.C. to the NBC litigation, alleging various claims of copyright infringement. Pursuant to a settlement agreement between the parties, on June 16, 2016, the parties filed a stipulation to dismiss with prejudice the NBC action, which was granted on June 20, 2016.

In addition, on February 21, 2013, the Fox plaintiffs filed a second motion for preliminary injunction against: (i) DISH Network, seeking to enjoin the Hopper TransfersTM feature in the second-generation Hopper set-top box, alleging breach of a retransmission consent agreement; and (ii) EchoStar Technologies L.L.C. and DISH Network, seeking to enjoin the Slingbox unit's placeshifting functionality in the second-generation Hopper set-top box, alleging copyright infringement by both defendants, and breach of the earlier-mentioned retransmission consent agreement by DISH Network. On January 12, 2015, the Court entered an order ruling on the parties' respective summary judgment motions, holding that: (a) the Slingbox unit's placeshifting functionality and the PrimeTime Anytime, AutoHop and Hopper Transfers features do not violate copyright law; (b) certain quality assurance copies (which were discontinued in November 2012) did violate copyright law; and (c) the Slingbox unit's placeshifting functionality, the Hopper Transfers feature and certain quality assurance copies breach DISH's retransmission consent agreement with Fox. Pursuant to a settlement agreement between us, DISH Network and the Fox plaintiffs, on February 10, 2016, we, DISH Network and the Fox plaintiffs filed a stipulation to dismiss with prejudice all of our respective claims pending in the California Court. That motion was granted on February 11, 2016.

New York Actions. On October 9, 2012, the ABC plaintiffs filed copyright counterclaims in the New York action against EchoStar Technologies, L.L.C., with the CBS plaintiffs filing similar copyright counterclaims in the New York action against EchoStar Technologies L.L.C. on October 12, 2012. Additionally, the CBS plaintiffs filed a counterclaim alleging that DISH Network fraudulently concealed the AutoHop feature when negotiating the renewal of its CBS retransmission consent agreement.

Pursuant to a settlement between us and the ABC parties, during March 2014, the ABC parties withdrew their appeal to the United States Court of Appeals for the Second Circuit; we and the ABC parties filed a stipulation on March 4, 2014 to dismiss without prejudice all of our respective claims pending in the United States District Court for the Southern District of New York; and the ABC parties granted a covenant not to sue. The Court ordered such dismissal on March 6, 2014. Pursuant to a settlement between us and the CBS parties, on December 10, 2014, we and the CBS parties filed a stipulation to dismiss with prejudice all of our respective claims pending in the New York Court. The Court ordered such dismissal on December 10, 2014.

These matters related to the Hopper litigation are now concluded.

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. 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 dismissed the consolidated case due to plaintiffs' failure to state a claim. On September 12, 2016, the plaintiffs moved the Court for leave to file an amended complaint.

Realtime Data LLC

On May 8, 2015, Realtime Data LLC ("Realtime") filed suit against EchoStar Corporation and our subsidiary HNS in the United States District Court for the Eastern District of Texas alleging infringement of United States Patent Nos. 7,378,992, entitled "Content Independent Data Compression Method and System"; 7,415,530, entitled "System and Methods for Accelerated Data Storage and Retrieval"; and 8,643,513, entitled "Data Compression System and Methods." On September 14, 2015, Realtime amended its complaint, additionally alleging infringement of United States Patent No. 9,116,908, entitled "System and Methods for Accelerated Data Storage and Retrieval." Realtime generally alleges that the asserted patents are infringed by certain HNS data compression products and services. Over April 29, 2016 and May 5, 2016, the defendants filed petitions before the United States Patent and Trademark Office challenging the validity of the asserted patents. The United States Patent and Trademark Office has instituted proceedings on each of those petitions. Realtime is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

Shareholder Derivative Litigation

On December 5, 2012, Greg Jacobi, purporting to sue derivatively on behalf of EchoStar Corporation, filed suit (the "Jacobi Litigation") against Charles W. Ergen, Michael T. Dugan, R. Stanton Dodge, Tom A. Ortolf, C. Michael Schroeder, Joseph P. Clayton, David K. Moskowitz, and EchoStar Corporation in the United States District Court for the District of Nevada. The complaint alleges that a March 2011 attempted grant of 1.5 million stock options to Charles Ergen breached defendants' fiduciary duties, resulted in unjust enrichment, and constituted a waste of corporate assets.

On December 18, 2012, Chester County Employees' Retirement Fund, derivatively on behalf of EchoStar Corporation, filed a suit (the "Chester County Litigation") against Charles W. Ergen, Michael T. Dugan, R. Stanton Dodge, Tom A. Ortolf, C. Michael Schroeder, Anthony M. Federico, Pradman P. Kaul, Joseph P. Clayton, and EchoStar Corporation in the United States District Court for the District of Colorado. The complaint similarly alleges that the March 2011 attempted grant of 1.5 million stock options to Charles Ergen breached defendants' fiduciary duties, resulted in unjust enrichment, and constituted a waste of corporate assets.

On February 22, 2013, the Chester County Litigation was transferred to the District of Nevada, and on April 3, 2013, the Chester County Litigation was consolidated into the Jacobi Litigation. Oral argument on a motion to dismiss the Jacobi Litigation was held February 21, 2014. On April 11, 2014, the Chester County Litigation was stayed pending resolution of the motion to dismiss. On March 30, 2015, the Court dismissed the Jacobi Litigation, with leave for Jacobi to amend his complaint by April 20, 2015. On April 20, 2015, Jacobi filed an amended complaint, which on June 12, 2015, we moved to dismiss. On March 17, 2016, the Court dismissed the amended Jacobi Litigation, and on July 25, 2016, Jacobi filed an appeal brief with the United States Court of Appeals for the Ninth Circuit. Our answering brief was filed on September 22, 2016.

Of the attempted grant of 1.5 million options to Mr. Ergen in 2011, only 800,000 were validly granted and remain outstanding.

Technology Development and Licensing, LLC

On January 22, 2009, Technology Development and Licensing, LLC (“TDL”) filed suit against EchoStar Corporation and DISH Network in the United States District Court for the Northern District of Illinois alleging infringement of United States Patent No. Re. 35,952, which relates to certain favorite channel features. TDL is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein. The case has been stayed since July 2009, pending two reexamination petitions before the United States Patent and Trademark Office, which concluded in August 2015 resulting in 42 out of the 53 claims of the 952 patent being invalidated. As a result, the case resumed in August 2015. A trial date has not been set.

TQ Beta LLC

On June 30, 2014, TQ Beta LLC (“TQ Beta”) filed suit against DISH Network, DISH DBS Corporation, DISH Network L.L.C., as well as EchoStar Corporation and our subsidiaries, EchoStar Technologies, L.L.C, HSS, and Sling Media, Inc., in the United States District Court for the District of Delaware, alleging infringement of United States Patent No. 7,203,456 (the “456 patent”), which is entitled “Method and Apparatus for Time and Space Domain Shifting of Broadcast Signals.” TQ Beta alleges that the Hopper, Hopper with Sling, ViP 722 and ViP 722k DVR devices, as well as the DISH Anywhere service and DISH Anywhere mobile application, infringe the 456 patent, but has not specified the amount of damages that it seeks. TQ Beta is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein. During August 2015, EchoStar Corporation and DISH Network L.L.C. filed petitions before the United States Patent and Trademark Office challenging the validity of certain claims of the 456 patent, and in February 2016, the United States Patent and Trademark Office agreed to institute proceedings on our petitions. On February 25, 2016, the case was stayed pending resolution of these proceedings before the United States Patent and Trademark Office, and the Court vacated all pending court dates and deadlines.

TQ Delta LLC

On July 17, 2015, TQ Delta, LLC (“TQ Delta”) filed a complaint against DISH Network, DISH DBS Corporation and DISH Network L.L.C. in the United States District Court for the District of Delaware. On May 16, 2016, TQ Delta filed a second amended complaint that added EchoStar Corporation and EchoStar Technologies L.L.C. as defendants. That 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”; and 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.” TQ Delta alleges that satellite TV services, Internet services, 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. Trial has been set for November 13, 2017. 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, DISH Network filed petitions with the United States Patent and Trademark Office challenging the validity of all of the patent claims of the 404 patent and 268 patent asserted against it, and other parties have also filed petitions with the United States Patent and Trademark Office challenging the validity of all of the patent claims asserted in the action.

Two-Way Media Ltd.

On February 17, 2016, Two-Way Media Ltd. (“TWM”) filed a complaint against EchoStar Corporation and our subsidiaries, EchoStar Technologies L.L.C., EchoStar Satellite Services L.L.C., and Sling Media, Inc., as well as against DISH Network Corporation, DISH DBS Corporation, DISH Network L.L.C., DISH Network Service L.L.C., Sling TV Holding L.L.C., Sling TV L.L.C., and Sling TV Purchasing L.L.C. TWM brought the suit in the United States District Court for the District of Colorado, alleging infringement of United States Patent Nos. 5,778,187; 5,983,005; 6,434,622; and 7,266,686, each entitled “Multicasting Method and Apparatus”; and 9,124,607, entitled “Methods and Systems for Playing Media.” TWM alleges that the Sling TV, Sling International, DISH Anywhere, and DISHWorld services, as well as the Slingbox units and DISH DVRs incorporating Slingbox technology, infringe the asserted patents. TWM is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

Other

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

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

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

Note 15.   Segment Reporting

Operating segments are business components of an enterprise for which separate financial information is available and regularly evaluated by the chief operating decision maker ("CODM"), who for EchoStar is the Company's Chief Executive Officer. Under this definition, we operate in three primary business segments, Hughes, EchoStar Technologies and EchoStar Satellite Services as described in Note 1 of these condensed consolidated financial statements.

The primary measure of segment profitability that is reported regularly to our CODM is earnings before interest, taxes, depreciation and amortization, or EBITDA. Our segment operating results do not include real estate and other activities, costs incurred in certain satellite development programs and other business development activities, expenses of various corporate departments and our centralized treasury operations, including income from our investment portfolio and interest expense on our debt. These activities are accounted for in the "All Other and Eliminations" column in the table below. Total assets by segment have not been reported herein because the information is not provided to our CODM on a regular basis. The Hughes Retail Group is included in our Hughes segment and our CODM reviews separate HRG financial information only to the extent such information is included in our periodic filings with the SEC. Therefore, we do not consider HRG to be a separate operating segment.

Transactions between segments were not significant for the three and nine months ended September 30, 2016 or 2015.

The following table presents revenue, EBITDA, and capital expenditures for each of our operating segments.

	Hughes	EchoStar Technologies	EchoStar Satellite Services	All Other and Eliminations	Consolidated Total
	(In thousands)				
For the Three Months Ended September 30, 2016					
External revenue	$355,090	$ 282,865	$101,308	$3,086	$742,349
Intersegment revenue	$786	$ 187	$172	$(1,145)	$—
Total revenue	$355,876	$ 283,052	$101,480	$1,941	$742,349
EBITDA	$112,018	$ 9,346	$83,700	$5,980	$211,044
Capital expenditures	$75,682	$ 17,239	$15,730	$48,162	$156,813
For the Three Months Ended September 30, 2015					
External revenue	$339,060	$ 294,792	$124,126	$2,901	$760,879
Intersegment revenue	$669	$ 133	$174	$(976)	$—
Total revenue	$339,729	$ 294,925	$124,300	$1,925	$760,879
EBITDA	$101,582	$ 25,946	$104,200	$(15,116)	$216,612
Capital expenditures	$72,626	$ 8,528	$32,416	$9,672	$123,242
For the Nine Months Ended September 30, 2016					
External revenue	$1,019,203	$ 982,555	$305,401	$9,178	$2,316,337
Intersegment revenue	$2,248	$ 560	$518	$(3,326)	$—
Total revenue	$1,021,451	$ 983,115	$305,919	$5,852	$2,316,337
EBITDA	$317,865	$ 57,426	$255,712	$23,441	$654,444
Capital expenditures	$261,241	$ 31,764	$50,762	$165,815	$509,582
For the Nine Months Ended September 30, 2015					
External revenue	$998,564	$ 972,591	$373,726	$8,246	$2,353,127
Intersegment revenue	$1,630	$ 506	$561	$(2,697)	$—
Total revenue	$1,000,194	$ 973,097	$374,287	$5,549	$2,353,127
EBITDA	$296,269	$ 80,764	$314,177	$(48,599)	$642,611
Capital expenditures	$207,680	$ 32,783	$84,667	$155,022	$480,152

The following table reconciles total consolidated EBITDA to reported "Income before income taxes" in our condensed consolidated statements of operations and comprehensive income (loss):

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2016	2015	2016	2015
	(In thousands)			
EBITDA	$211,044	$216,612	$654,444	$642,611
Interest income and expense, net	(31,098)	(26,308)	(66,766)	(88,240)
Depreciation and amortization	(123,633)	(132,892)	(370,872)	(398,547)
Net income (loss) attributable to noncontrolling interest in HSS Tracking Stock and other noncontrolling interests	609	(477)	20	(3,014)

Income before income taxes	$56,922	$56,935	$216,826	$152,810

Note 16. Related Party Transactions

DISH Network

Following the Spin-off, we and DISH Network have operated as separate publicly-traded companies. However, pursuant to the Satellite and Tracking Stock Transaction, described in Note 4 and below, DISH Network owns Hughes Retail Preferred Tracking Stock representing an aggregate 80.0% economic interest in the residential retail satellite broadband business of our Hughes segment. The tracking stock is an equity security and the rights of DISH Network, as the holder of the tracking stock, in our assets are subject to the claims of our creditors. In addition, a substantial majority of the voting power of the shares of EchoStar and DISH Network is owned beneficially by Charles W. Ergen, our Chairman, and by certain trusts established by Mr. Ergen for the benefit of his family.

In connection with and following the Spin-off, we and DISH Network have entered into certain agreements pursuant to which we obtain certain products, services and rights from DISH Network; DISH Network obtains certain products, services and rights from us; and we and DISH Network have indemnified each other against certain liabilities arising from our respective businesses. We also may enter into additional agreements with DISH Network in the future. Generally, the amounts DISH Network pays for products and services provided under the agreements are based on our cost plus a fixed margin (unless noted differently below or in our most recent Annual Report on Form 10-K), which varies depending on the nature of the products and services provided.

The following is a summary of the terms of our principal agreements with DISH Network that may have an impact on our financial condition and results of operations.

“Equipment revenue — DISH Network”

Receiver Agreement. Effective January 2012, we and DISH Network entered into a receiver agreement (the “2012 Receiver Agreement”), pursuant to which DISH Network has the right, but not the obligation, to purchase digital set-top boxes, related accessories, and other equipment from us for the period from January 2012 through December 2014. The 2012 Receiver Agreement replaced the receiver agreement we entered into with DISH Network in connection with the Spin-off. The 2012 Receiver Agreement allows DISH Network to purchase digital set-top boxes, related accessories, and other equipment from us either: (i) at cost (decreasing as we reduce costs and increasing as costs increase) plus a dollar mark-up which will depend upon the cost of the product subject to a collar on our mark-up; or (ii) at cost plus a fixed margin, which will depend on the nature of the equipment purchased. Under the 2012 Receiver Agreement, our margins will be increased if we are able to reduce the costs of our digital set-top boxes and our margins will be reduced if these costs increase. We provide DISH Network with standard manufacturer warranties for the goods sold under the 2012 Receiver Agreement. Additionally, the 2012 Receiver Agreement includes an indemnification provision, whereby the parties indemnify each other for certain intellectual property matters. DISH Network is able to terminate the 2012 Receiver Agreement for any reason upon at least 60 days’ notice to us. We are able to terminate the 2012 Receiver Agreement if certain entities acquire DISH Network. In May 2014, we received DISH Network’s notice to extend the 2012 Receiver Agreement for one year through December 2015, and in November 2015, we amended the 2012 Receiver Agreement with DISH Network to extend the term of the 2012 Receiver Agreement for one year through December 2016. In November 2016, we and DISH Network amended this agreement to extend its term for one year through December 2017.

“Services and other revenue — DISH Network”

Broadcast Agreement. Effective January 2012, we and DISH Network entered into a broadcast agreement (the “2012 Broadcast Agreement”) pursuant to which we provide certain broadcast services to DISH Network, including teleport services such as transmission and downlinking, channel origination services, and channel management services, for the period from January 2012 through December 2016. In November 2016, we and DISH Network amended the 2012 Broadcast Agreement to extend the term for one year through December 2017. The 2012 Broadcast Agreement replaced the broadcast agreement that we entered into with DISH Network in connection with the Spin-off. The fees for the services provided under the 2012 Broadcast Agreement are calculated at either: (a) our cost of providing the relevant service plus a fixed dollar fee, which is subject to certain adjustments; or (b) our cost of providing the relevant service plus a fixed margin, which depends on the nature of the services provided. DISH Network has the ability to terminate channel origination services and channel management services for any reason and without any liability upon at least 60 days’ notice to us. If DISH Network terminates the teleport services provided under the 2012 Broadcast Agreement for a reason other than our breach, DISH Network generally is obligated to reimburse us for any direct costs we incur related to any such termination that we cannot reasonably mitigate.

Broadcast Agreement for Certain Sports Related Programming. In May 2010, we and DISH Network entered into a broadcast agreement pursuant to which we provide certain broadcast services to DISH Network in connection with its carriage of certain sports related programming. The term of this agreement is ten years. If DISH Network terminates this agreement for a reason other than our breach, DISH Network generally is obligated to reimburse us for any direct costs we incur related to any such termination that we cannot reasonably mitigate. The fees for the broadcast services provided under this agreement depend, among other things, upon the cost to develop and provide such services.

RUS Implementation Agreement. In September 2010, DISH Broadband L.L.C. (“DISH Broadband”), DISH Network’s indirect, wholly-owned subsidiary, was selected by the Rural Utilities Service (“RUS”) of the United States Department of Agriculture to receive up to approximately $14.1 million in broadband stimulus grant funds (the “Grant Funds”). Effective November 2011, HNS and DISH Broadband entered into a RUS Implementation Agreement (the “RUS Agreement”) pursuant to which HNS provided certain portions of the equipment and broadband service used to implement DISH Broadband’s RUS program. While the RUS Agreement expired in June 2013 when the Grant Funds were exhausted, HNS is required to continue providing services to DISH Broadband’s customers activated prior to the expiration of the RUS Agreement in accordance with the terms and conditions of the RUS Agreement.

Satellite Services Provided to DISH Network. Since the Spin-off, we have entered into certain satellite service agreements pursuant to which DISH Network receives satellite services on certain satellites owned or leased by us. The fees for the services provided under these satellite service agreements depend, among other things, upon the orbital location of the applicable satellite, the number of transponders that are providing services on the applicable satellite, and the length of the service arrangements. The terms of each service arrangement is set forth below:

EchoStar I, EchoStar VII, EchoStar X, EchoStar XI and EchoStar XIV. As part of the Satellite and Tracking Stock Transaction discussed in Note 4, in March 2014, we began providing certain satellite services to DISH Network on the EchoStar I, EchoStar VII, EchoStar X, EchoStar XI and EchoStar XIV satellites. The term of each satellite services 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. DISH Network generally has the option to renew each satellite service 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. DISH Network elected not to renew the satellite services agreement relative to the EchoStar I satellite. The agreement for the EchoStar I satellite expired pursuant to its terms effective November 2015. In December 2015, DISH Network renewed the satellite services agreement relative to the EchoStar VII satellite for one year to June 2017.

EchoStar VIII. In May 2013, DISH Network began receiving satellite services from us on the EchoStar VIII satellite as an in-orbit spare. Effective March 2014, this satellite services arrangement converted to a month-to-month service agreement with both parties having the right to terminate upon 30 days’ notice. The agreement terminated in accordance with its terms effective November 2015.

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

EchoStar XII. DISH Network receives satellite services from us on the EchoStar XII satellite. The term of the satellite services agreement terminates upon the earlier of: (i) the end of life of the satellite; (ii) the date the satellite fails or the date the transponder(s) on which the service was being provided under the agreement fails; or (iii) September 2017. DISH Network generally has the option to renew the agreement on a year-to-year basis through the end of the satellite's life. There can be no assurance that any options to renew this agreement will be exercised.

EchoStar XVI. In December 2009, we entered into an initial ten-year transponder service agreement with DISH Network, pursuant to which DISH Network has received satellite services from us on the EchoStar XVI satellite since January 2013. Effective December 2012, we and DISH Network 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 DISH Network further 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, upon certain conditions, and DISH Network have the option to renew for an additional five-year period. If either we or DISH Network exercise our respective five-year renewal options, DISH Network has the option to renew for an additional five-year period prior to expiration of the then-current term. There can be no assurance that any option to renew this agreement will be exercised. In the event that we or DISH Network does not exercise the first five-year renewal option or DISH Network does not exercise the second five-year renewal option, DISH Network has the option to purchase the EchoStar XVI satellite for a certain price. If DISH Network does not elect to purchase the EchoStar XVI satellite at that time, we may sell the EchoStar XVI satellite to a third party and DISH Network is required to pay us a certain amount in the event we are not able to sell the EchoStar XVI satellite for more than a certain amount.

Nimiq 5 Agreement. In September 2009, we 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 west longitude orbital location (the “Telesat Transponder Agreement”). In September 2009, we also entered into a satellite service agreement (the “DISH Nimiq 5 Agreement”) with DISH Network, pursuant to which DISH Network receives satellite services from us on all 32 of the DBS transponders covered by the Telesat Transponder Agreement.

Under the terms of the DISH Nimiq 5 Agreement, DISH Network makes certain monthly payments to us that commenced in September 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, DISH Network has 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, DISH Network has certain rights to receive service from us on a replacement satellite. There can be no assurance that any options to renew the DISH Nimiq 5 Agreement will be exercised or that DISH Network will exercise its option to receive service on a replacement satellite.

QuetzSat-1 Agreement. In November 2008, we entered into a ten-year satellite service agreement with SES Latin America, which provides, among other things, for the provision by SES Latin America to us of service on 32 DBS transponders on the QuetzSat-1 satellite. Concurrently, in 2008, we entered into a transponder service agreement with DISH Network, pursuant to which DISH Network receives satellite services on 24 of the DBS transponders on the QuetzSat-1 satellite. The QuetzSat-1 satellite was launched in September 2011 and was placed into service in November 2011 at the 67.1 degree west longitude orbital location. In February 2013, we and DISH Network entered into an agreement pursuant to which we receive certain satellite services from DISH Network on five DBS transponders on the QuetzSat-1 satellite. In January 2013, the QuetzSat-1 satellite was moved to the 77 degree west longitude orbital location and DISH Network commenced commercial operations at such location in February 2013.

Under the terms of our contractual arrangements with DISH Network, we began to provide service to DISH Network on the QuetzSat-1 satellite in February 2013 and will continue to provide service through the remainder of the service term. Unless extended or earlier terminated under the terms and conditions of our agreement with DISH Network for the QuetzSat-1 satellite, the initial service term will expire in November 2021. Upon expiration of the initial service term, DISH Network has the option to renew the agreement for the QuetzSat-1 satellite 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, DISH Network has certain rights to receive service from us on a replacement satellite. There can be no assurance that any options to renew this agreement will be exercised or that DISH Network will exercise its option to receive service on a replacement satellite.

103 Degree Orbital Location/SES-3. In May 2012, we entered into a spectrum development agreement (the “103 Spectrum Development Agreement”) with Ciel Satellite Holdings Inc. (“Ciel”) to develop certain spectrum rights at the 103 degree west longitude orbital location (the “103 Spectrum Rights”). In June 2013, we and DISH Network entered into a spectrum development agreement (the “DISH 103 Spectrum Development Agreement”) pursuant to which DISH Network may use and develop the 103 Spectrum Rights. Unless earlier terminated under the terms and conditions of the DISH 103 Spectrum Development Agreement, the term generally will continue for the duration of the 103 Spectrum Rights.

In connection with the 103 Spectrum Development Agreement, in May 2012, we also entered into a ten-year service agreement with Ciel pursuant to which we receive certain satellite services from Ciel on the SES-3 satellite at the 103 degree orbital location. In June 2013, we and DISH Network entered into an agreement pursuant to which DISH Network receives certain satellite services from us on the SES-3 satellite (the "DISH 103 Service Agreement"). Under the terms of the DISH 103 Service Agreement, DISH Network makes certain monthly payments to us through the service term. Unless earlier terminated under the terms and conditions of the DISH 103 Service Agreement, the initial service term will expire on the earlier of: (i) the date the SES-3 satellite fails; (ii) the date the transponder(s) on which service was being provided under the agreement fails; or (iii) June 2023. Upon in-orbit failure or end of life of the SES-3 satellite, and in certain other circumstances, DISH Network has certain rights to receive service from us on a replacement satellite. There can be no assurance that DISH Network will exercise its option to receive service on a replacement satellite.

Satellite and Tracking Stock Transaction. In February 2014, we entered into agreements with DISH Network to implement a transaction pursuant to which, among other things: (i) in March 2014, EchoStar and HSS issued shares of the Tracking Stock to DISH Network in exchange for five satellites owned by DISH Network (EchoStar I, EchoStar VII, EchoStar X, EchoStar XI and EchoStar XIV) (including assumption of related in-orbit incentive obligations) and approximately $11.4 million in cash; and (ii) in March 2014, DISH Network began receiving certain satellite services on these five satellites from us. See Note 4 herein and in our most recent Form 10-K for further information.

TT&C Agreement. Effective January 2012, we entered into a telemetry, tracking and control ("TT&C") agreement pursuant to which we provide TT&C services to DISH Network for a period ending in December 2016 (the "2012 TT&C Agreement"). In November 2016, we and DISH Network amended the 2012 TT&C Agreement to extend the term for one year through December 2017. The 2012 TT&C Agreement replaced the TT&C agreement we entered into with DISH Network in connection with the Spin-off. The fees for services provided under the 2012 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. DISH Network is able to terminate the 2012 TT&C Agreement for any reason upon 60 days' notice.

In connection with the Satellite and Tracking Stock Transaction, in February 2014, we amended the TT&C Agreement to cease the provision of TT&C services to DISH Network for the EchoStar I, EchoStar VII, EchoStar X, EchoStar XI and EchoStar XIV satellites. Effective March 2014, we provide TT&C services for the D-1 and EchoStar XV satellites; however, for the period that we received satellite services on the EchoStar XV satellite from DISH Network, we waived the fees for the TT&C services on the EchoStar XV satellite. Effective August 2016, we provide TT&C services to DISH Network for the EchoStar XVIII satellite.

Real Estate Lease Agreements. We have entered into lease agreements pursuant to which DISH Network leases certain real estate from us. 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 at the time of the lease, and DISH Network is responsible for its portion of the taxes, insurance, utilities and maintenance of the premises. The term of each of the leases is set forth below:

Inverness Lease Agreement. The lease for certain space at 90 Inverness Circle East in Englewood, Colorado is for a period ending in December 2016. This agreement can be terminated by either party upon six months' prior notice. This agreement may be extended by mutual consent, in which case this agreement will be converted to a month-to-month lease agreement. Upon such extension, both parties have the right to terminate this agreement upon 30 days' notice. In February 2016, DISH Network terminated this lease effective in August 2016.

Meridian Lease Agreement. The lease for all of 9601 S. Meridian Blvd. in Englewood, Colorado is for a period ending in December 2016. This agreement may be extended by mutual consent, in which case this agreement will be converted to a month-to-month lease agreement. Upon extension, both parties have the right to terminate this agreement upon 30 days' notice.

Santa Fe Lease Agreement. The lease for all of 5701 S. Santa Fe Dr. in Littleton, Colorado is for a period ending in December 2016. This agreement may be extended by mutual consent, in which case this agreement will be converted to a month-to-month lease agreement. Upon extension, both parties have the right to terminate this agreement upon 30 days' notice.

Atlanta Sublease Agreement. The sublease for certain space at 211 Perimeter Center in Atlanta, Georgia is for a period that ended in October 2016.

Gilbert Lease Agreement. The original lease for certain space at 801 N. DISH Dr. in Gilbert, Arizona was a month to month lease and could be terminated by either party upon 30 days' prior notice. The original lease was terminated in May 2014. Effective August 2014, we began leasing this space to DISH Network under a new lease for a period ending in July 2016. Effective November 2016, we and DISH Network amended this lease to extend the term for one year through July 2017.

Cheyenne Lease Agreement. The lease for certain space at 530 EchoStar Drive in Cheyenne, Wyoming is for a period ending in December 2031. This agreement may be extended by mutual consent, in which case this agreement will be converted to a month-to-month lease agreement. Upon extension, both parties have the right to terminate this agreement upon 30 days' notice.

Product Support Agreement. In connection with the Spin-off, we entered into a product support agreement pursuant to which DISH Network has the right, but not the obligation, to receive product support from us (including certain engineering and technical support services) for all set-top boxes and related accessories that we have previously sold and in the future may sell to DISH Network. The fees for the services provided under the product support agreement are calculated at cost plus a fixed margin, which varies depending on the nature of the services provided. The term of the product support agreement is the economic life of such set-top boxes and related accessories, unless terminated earlier. DISH Network may terminate the product support agreement for any reason upon at least 60 days' notice. In the event of an early termination of this agreement, DISH Network is entitled to a refund of any unearned fees paid to us for the services.

DISHOnline.com Services Agreement. Effective January 2010, DISH Network entered into a two-year agreement with us pursuant to which DISH Network receives certain services associated with an online video portal. The fees for the services provided under this services agreement depend, among other things, upon the cost to develop and operate such services. DISH Network has the option to renew this agreement for successive one year terms and the agreement may be terminated by DISH Network for any reason upon at least 120 days' notice to us. In October 2014, DISH Network exercised its right to renew this agreement for a one-year period ending in December 2015, and in November 2015, DISH Network exercised its right to renew this agreement for an additional one-year period ending in December 2016.

DISH Remote Access Services Agreement. Effective February 2010, we entered into an agreement with DISH Network pursuant to which DISH Network receives, among other things, certain remote digital video recorder ("DVR") management services. The fees for the services provided under this services agreement depend, among other things, upon the cost to develop and operate such services. This agreement had an initial term of five years with automatic renewal for successive one year terms. This agreement will automatically renew in February 2017 for an additional one-year period until February 2018. The agreement may be terminated by DISH Network for any reason upon at least 120 days' notice to us.

SlingService Services Agreement. Effective February 2010, we entered into an agreement with DISH Network pursuant to which DISH Network receives certain services related to placeshifting. The fees for the services provided under this services agreement depend, among other things, upon the cost to develop and operate such services. This agreement had an initial term of five years with automatic renewal for successive one year terms. This agreement will automatically renew in February 2017 for an additional one-year period until February 2018. The agreement may be terminated by DISH Network for any reason upon at least 120 days' notice to us.

TerreStar Agreement. In March 2012, DISH Network completed its acquisition of substantially all the assets of TerreStar Networks Inc. ("TerreStar"). Prior to DISH Network's acquisition of substantially all the assets of TerreStar and our completion of the Hughes Acquisition, TerreStar and HNS entered into various agreements pursuant to which our Hughes segment provides, among other things, warranty, operations and maintenance and hosting services for TerreStar's ground-based communications equipment. TerreStar generally has the right to continue to receive warranty services from us for one of our products on a month-to-month basis. The provision of warranty services for our other product will automatically renew in March 2017 for an additional one-year period until March 2018, unless terminated by TerreStar upon at least 60 days' written notice to us prior to the end of the term. The provision of operations and maintenance services will automatically renew in April 2017 for an additional one-year period until April 2018, unless terminated by TerreStar or us upon at least 90 days' written notice prior to the end of the term. The provision of hosting services will automatically renew in May 2017 for an additional five-year period until May 2022, unless terminated by TerreStar upon at least 180 days' written notice to us prior to the end of the term. In addition, TerreStar generally may terminate such services for convenience subject to providing us with prior notice and/or payment of termination charges.

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

Set-Top Box Application Development Agreement. In November 2012, we and DISH Network entered into a set-top box application development agreement (the "Application Development Agreement") pursuant to which we provide DISH Network with certain services relating to the development of web-based applications for set-top boxes for the period ending in February 2016. The Application Development Agreement automatically renewed in February 2016 for a one-year period ending in February 2017, and renews automatically for successive one-year periods thereafter, unless terminated earlier by us or DISH Network at any time upon at least 90 days' notice. The fees for services provided under the Application Development Agreement are calculated at our cost of providing the relevant service plus a fixed margin, which will depend on the nature of the services provided.

XiP Encryption Agreement. In July 2012, we entered into an encryption agreement with DISH Network for our whole-home HD DVR line of set-top boxes (the "XiP Encryption Agreement") pursuant to which we provide certain security measures on our whole-home HD DVR line of set-top boxes to encrypt the content delivered to the set-top box via a smart card and secure the content between set-top boxes. The XiP Encryption Agreement's term ends on the same day as the 2012 Receiver Agreement and therefore was automatically extended through December 2017 when we and DISH Network extended the 2012 Receiver Agreement. We and DISH Network each have the right to terminate the XiP Encryption Agreement for any reason upon at least 180 days' notice and 30 days' notice, respectively. The fees for the services provided under the XiP Encryption Agreement are calculated on a monthly basis based on the number of receivers utilizing such security measures each month.

DBSD North America Agreement. In March 2012, DISH Network completed its acquisition of 100% of the equity of reorganized DBSD North America, Inc. ("DBSD North America"). Prior to DISH Network's acquisition of DBSD North America and our completion of the Hughes Acquisition, DBSD North America and HNS entered into various agreements pursuant to which our Hughes segment provides, among other things, warranty, operations and maintenance and hosting services of DBSD North America's gateway and ground-based communications equipment. The provision of warranty services will terminate in February 2017. The provision of operations and maintenance services will automatically renew in April 2017 for an additional one-year period until April 2018, unless terminated by DBSD North America upon at least 120 days' written notice to us prior to the end of the term. The provision of hosting services will automatically renew in February 2017 for an additional five-year period until February 2022. In addition, DBSD North America generally may terminate such services for convenience, subject to providing us with prior notice and/or payment of termination charges.

Sling TV Holding L.L.C. (formerly DISH Digital Holding L.L.C.) ("Sling TV Holding"). Effective July 2012, we and DISH Network formed Sling TV Holding, which was owned two-thirds by DISH Network and one-third by us. Sling TV Holding was formed to develop and commercialize certain advanced technologies. At that time, we, DISH Network and Sling TV Holding entered into the following agreements with respect to Sling TV Holding: (i) a contribution agreement pursuant to which we and DISH Network contributed certain assets in exchange for our respective ownership interests in Sling TV Holding; (ii) a limited liability company operating agreement ("Operating Agreement"), which provides for the governance of Sling TV Holding; and (iii) a commercial agreement ("Commercial Agreement") pursuant to which, among other things, Sling TV Holding had: (a) certain rights and corresponding obligations with respect to its business; and (b) the right, but not the obligation, to receive certain services from us and DISH Network, respectively.

Effective August 2014, we and Sling TV Holding entered into an exchange agreement ("Exchange Agreement") pursuant to which, among other things, Sling TV Holding distributed certain assets to us and we reduced our interest in Sling TV Holding to a 10.0% non-voting interest. As a result, DISH Network has a 90.0% equity interest and a 100% voting interest in Sling TV

Holding. In addition, we, DISH Network and Sling TV Holding amended and restated the Operating Agreement, primarily to reflect the changes implemented by the Exchange Agreement. Finally, we, DISH Network and Sling TV Holding amended and restated the Commercial Agreement, pursuant to which, among other things, Sling TV Holding: (1) continues to have certain rights and corresponding obligations with respect to its business; (2) continues to have the right, but not the obligation, to receive certain services from us and DISH Network; and (3) has a license from us to use certain of the assets distributed to us as part of the Exchange Agreement.

Cost of sales — equipment and services and other — DISH Network

Remanufactured Receiver and Services Agreement. In connection with the Spin-off, we entered into a remanufactured receiver and services agreement with DISH Network pursuant to which we have the right, but not the obligation, to purchase remanufactured receivers and related components from DISH Network at cost plus a fixed margin, which varies depending on the nature of the equipment purchased. In November 2014, we and DISH Network extended this agreement for a one-year period ending in December 2015, and in November 2015, we and DISH Network extended this agreement for a one-year period ending in December 2016. In November 2016, we and DISH Network further amended the remanufactured receiver and services agreement to extend its term for a one-year period through December 2017. We may terminate the remanufactured receiver and services agreement for any reason upon at least 60 days' notice to DISH Network. DISH Network may also terminate this agreement if certain entities acquire DISH Network.

Satellite Services Received from DISH Network - EchoStar XV. In May 2013, we began receiving satellite services from DISH Network on the EchoStar XV satellite and relocated the satellite to the 45 degree west longitude orbital location for testing pursuant to our Brazilian authorization. Effective March 2014, this satellite services agreement converted to a month-to-month service agreement with both parties having the right to terminate this agreement upon 30 days' notice. In October 2015, we provided DISH Network a notice to terminate this agreement effective in November 2015, and the agreement was terminated according to its terms in November 2015.

General and administrative expenses — DISH Network

Professional Services Agreement. In connection with the Spin-off, we entered into various agreements with DISH Network including the Transition Services Agreement, Satellite Procurement Agreement and Services Agreement, which all expired in January 2010 and were replaced by a Professional Services Agreement. In January 2010, we and DISH Network agreed that we shall continue to have the right, but not the obligation, to receive the following services from DISH Network, among others, certain of which were previously provided under 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. Mr. Vivek Khemka, who remains employed as DISH Network's Executive Vice President and Chief Technology Officer, currently also provides services to us pursuant to the Professional Services Agreement as President - EchoStar Technologies L.L.C. Additionally, we and DISH Network agreed that DISH Network would continue to have the right, but not the obligation, to engage us to manage the process of procuring new satellite capacity for DISH Network (previously provided under the Satellite Procurement Agreement), receive logistics, procurement and quality assurance services from us (previously provided under the Services Agreement) and other support services. The Professional Services Agreement will automatically renew in January 2017 for an additional one-year period until January 2018 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.

Real Estate Lease Agreements. We have entered into a lease agreement pursuant to which we lease certain real estate from DISH Network. The rent on a per square foot basis is comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the lease, and we are responsible for our portion of the taxes, insurance, utilities and maintenance of the premises. The lease agreement is for certain space at 1285 Joe Battle Blvd., El Paso, Texas, was for an initial period ending in August 2015, and provided us with renewal options for four consecutive three year terms. Effective August 2015, we exercised our first renewal option for a period ending in August 2018.

Other agreements — DISH Network

Intellectual Property Matters Agreement. We entered into an Intellectual Property Matters Agreement with DISH Network in connection with the Spin-off. The Intellectual Property Matters Agreement governs our relationship with DISH Network with respect to patents, trademarks and other intellectual property. The Intellectual Property Matters Agreement will continue in perpetuity. Pursuant to the Intellectual Property Matters Agreement, DISH Network irrevocably assigned to us all right, title and interest in certain patents, trademarks and other intellectual property necessary for the operation of our set-top box business. In addition, the agreement permits us to use, in the operation of our set-top box business, certain other intellectual property currently owned or licensed by DISH Network. In addition, DISH Network may not use the "EchoStar" name as a trademark, except in certain limited circumstances. Similarly, the Intellectual Property Matters Agreement provides that we will not make any use of the name or trademark "DISH Network" or any other trademark owned by DISH Network, except in certain circumstances.

Tax Sharing Agreement. In connection with the Spin-off, we entered into a tax sharing agreement with DISH Network 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 DISH Network, and DISH Network will indemnify us for such taxes. However, DISH Network is not liable for and will not indemnify us 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, because of: (i) a direct or indirect acquisition of any of our stock, stock options or assets; (ii) any action that we take or fail to take; or (iii) any action that we take that is inconsistent with the information and representations furnished to the IRS in connection with the request for the private letter ruling, or to counsel in connection with any opinion being delivered by counsel with respect to the Spin-off or certain related transactions. In such case, we will be solely liable for, and will indemnify DISH Network for, any resulting taxes, as well as any losses, claims and expenses. The tax sharing agreement will 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, in September 2013, we and DISH Network agreed upon a supplemental allocation of the tax benefits arising from certain tax items resolved in the course of the IRS's examination of our consolidated tax returns. Prior to the agreement with DISH Network, the federal tax benefits of $81.9 million were reflected as a deferred tax asset for depreciation and amortization, which was netted in our noncurrent deferred tax liabilities. The agreement requires DISH Network to pay us $81.9 million of the federal tax benefit it receives at such time as we would have otherwise been able to realize such tax benefit, which we currently estimate would be after 2016. Accordingly, we recorded a noncurrent receivable from DISH Network for $81.9 million in "Other receivable — DISH Network" and a corresponding increase in our net noncurrent deferred tax liabilities to reflect the effects of this agreement in September 2013. In addition, in September 2013, we and DISH Network 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 DISH Network for such combined returns, through the taxable period ending on December 31, 2017.

We and DISH Network file combined income tax returns in certain states. In 2014 and 2015, we earned and recognized a tax benefit for certain state income tax credits that we would be unable to utilize currently if we had filed separately from DISH Network. DISH Network expects to utilize these tax credits to reduce its state income tax payable. We expect to increase additional paid-in capital upon receipt of any consideration paid to us by DISH

Network in exchange for these tax credits.

TiVo. In April 2011, we and DISH Network entered into a settlement agreement with TiVo, Inc. (“TiVo”). The settlement resolved all pending litigation between us and DISH Network, on the one hand, and TiVo, on the other hand, including litigation relating to alleged patent infringement involving certain DISH Network 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 DISH Network were dissolved. We and DISH Network are jointly responsible for making payments to TiVo in the aggregate amount of $500.0 million, including an initial payment of $300.0 million and the remaining $200.0 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, DISH Network made the initial payment to TiVo in May 2011, except for the contribution from us totaling approximately $10.0 million, representing an allocation of liability relating to our sales of DVR-enabled receivers to an international customer. Subsequent payments are allocated between us and DISH Network based on historical sales of certain licensed products, with EchoStar being responsible for 5% of each annual payment.

Sling Trademark License Agreement. In December 2014, Sling TV Holding entered into an agreement with Sling Media, Inc., our subsidiary, pursuant to which Sling TV Holding has the right, for a fixed fee, to use certain trademarks, domain names and other intellectual property related to the "Sling" trademark through December 2016.

gTLD Bidding Agreement. In April 2015, we and DISH Network entered into a gTLD Bidding Agreement whereby, among other things: (i) DISH Network obtained rights from us to participate in a generic top level domain ("gTLD") auction, assuming all rights and obligations from us related to our application with the Internet Corporation for Assigned Names and Numbers ("ICANN") for a particular gTLD; (ii) DISH Network agreed to reimburse us for our ICANN application fee and certain out-of-pocket expenses related to the application and the auction; and (iii) we and DISH Network agreed to split equally the net proceeds obtained by DISH Network as the losing bidder in the auction, less such fee reimbursement and out-of-pocket expenses.

Patent Cross-License Agreements. In December 2011, we and DISH Network entered into separate patent cross-license agreements with the same third party whereby: (i) we and such third party licensed our respective patents to each other subject to certain conditions; and (ii) DISH Network and such third party licensed their 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 2017 and aggregate payments under both Cross-License Agreements total less than $10.0 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 2022. If both options are exercised, the aggregate additional payments to such third party would total less than $3.0 million. However, we and DISH Network may elect to extend our respective Cross-License Agreement independently of each other. Since the aggregate payments under both Cross-License Agreements were based on the combined annual revenue of us and DISH Network, we and DISH Network agreed to allocate our respective payments to such third party based on our respective percentage of combined total revenue.

PMC. In 2008, Personalized Media Communications, Inc. ("PMC") filed suit against us, DISH Network and Motorola Inc., in the United States District Court for the Eastern District of Texas, alleging infringement of United States Patent Nos. 5,109,414; 4,965,825; 5,233,654; 5,335,277 and 5,887,243, which relate to satellite signal processing. In May 2015, we, DISH Network and PMC entered into a settlement and release agreement that provided, among other things, for a license by PMC to us and DISH Network for certain patents and patent applications and the dismissal of all of PMC's claims in the action against us and DISH Network with prejudice. In June 2015, the Court dismissed all of PMC's claims in the action against us and DISH Network with prejudice. In June 2015, we and DISH Network agreed that we would contribute a one-time payment of $5.0 million towards the settlement under the agreements entered into in connection with the Spin-off and the 2012 Receiver Agreement.

Caltech. On October 1, 2013, Caltech filed complaints against two of our subsidiaries, Hughes Communications, Inc. and HNS, as well as against DISH Network, DISH Network L.L.C., and dishNET Satellite Broadband L.L.C., in the United States District Court for the Central District of California alleging infringement of United States Patent Nos. 7,116,710; 7,421,032; 7,916,781; and 8,284,833, each of which is entitled "Serial Concatenation of Interleaved Convolutional Codes forming Turbo-Like Codes." Caltech asserted that encoding data as specified by the DVB-S2 standard infringes each of the asserted patents. Caltech claimed that the Hopper^{TM} set-top box that we design and sell to DISH Network, as well as certain of our Hughes segment's satellite broadband products and services, infringe the asserted patents by implementing the DVB-S2 standard. Pursuant to a settlement agreement among us, DISH Network and Caltech, in May 2016, Caltech dismissed with prejudice all of its claims in these actions. See Note 14 of these condensed consolidated financial statements for further information.

Orange, NJ. In October 2016, we and DISH Network sold two parcels of real estate owned separately by us and DISH Network in Orange, NJ to a third party pursuant to a purchase and sale agreement. Pursuant to the agreement, we and DISH Network separately received our respective payments from the buyer.

Other Agreements

Hughes Systique Corporation (“Hughes Systique”)

We contract with Hughes Systique for software development services. In 2008, Hughes Communications, Inc. loaned $1.5 million to Hughes Systique pursuant to a term loan facility. The initial interest rate on the loans was 6%, payable annually, and the accrued and unpaid interest was added to the principal amount in certain circumstances. The loans were convertible into shares of Hughes Systique upon non-payment or an event of default. In May 2014, we amended the term loan facility to increase the interest rate from 6% to 8%, payable annually, to reflect then-current market conditions and extend the maturity date of the loans to May 1, 2015, and in April 2015, we extended the maturity date of the loans to May 1, 2016 on the same terms. In 2015, Hughes Systique repaid $1.5 million of the outstanding principal of the loan facility. In February 2016, Hughes Systique repaid $0.3 million of the outstanding principal of the loan facility. In April 2016, Hughes Systique repaid in full the remaining $0.3 million outstanding principal and interest of the loan facility. As of September 30, 2016, the principal amount outstanding of the loan facility was zero. In addition to our 43.9% ownership in Hughes Systique, Mr. Pradman Kaul, the President of Hughes Communications, Inc. and a member of our board of directors, and his brother, who is the CEO and President of Hughes Systique, in the aggregate, own approximately 25.8%, on an undiluted basis, of Hughes Systique’s outstanding shares as of September 30, 2016. Furthermore, Mr. Pradman Kaul serves on the board of directors of Hughes Systique. Hughes Systique is a variable interest entity and we are considered the primary beneficiary of Hughes Systique due to, among other factors, our ability to direct the activities that most significantly impact the economic performance of Hughes Systique. As a result, we consolidate Hughes Systique’s financial statements in our condensed consolidated financial statements.

NagraStar L.L.C.

We own 50.0% of NagraStar L.L.C. (“NagraStar”), a joint venture that is our primary provider of encryption and related security technology used in our set-top boxes. We account for our investment in NagraStar using the equity method. We made purchases from NagraStar totaling approximately $2.5 million and $4.4 million for the three months ended September 30, 2016 and 2015, respectively, and $10.1 million and $13.0 million for the nine months ended September 30, 2016 and 2015, respectively. As of September 30, 2016 and December 31, 2015, we had trade accounts payable to NagraStar totaling approximately $0.9 million and $2.6 million, respectively.

Dish Mexico

We own 49.0% of an entity that provides direct-to-home satellite services in Mexico known as Dish Mexico. We provide certain broadcast services and satellite services and sell hardware such as digital set-top boxes and related equipment to Dish Mexico.

The following table summarizes revenue from sales of hardware and services we provided to Dish Mexico.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2016	2015	2016	2015
	(In thousands)			

Digital set-top boxes and related accessories	$7,693	$19,887	$40,423	$45,432
Satellite services	$5,837	$5,837	$17,510	$17,510
Uplink services	$1,024	$1,030	$3,049	$3,981

As of September 30, 2016 and December 31, 2015, “Trade accounts receivable, net” includes amounts due from Dish Mexico of $19.3 million and $32.9 million, respectively.

Deluxe/EchoStar LLC

We own 50.0% of Deluxe/EchoStar LLC (“Deluxe”), a joint venture that we entered into in 2010 to build an advanced digital cinema satellite distribution network targeting delivery to digitally equipped theaters in the U.S. and Canada. We account for our investment in Deluxe using the equity method. We recognized revenue from Deluxe for transponder services and the sale of broadband equipment of approximately $0.7 million for each of the three months ended September 30, 2016 and 2015 and $2.1 million for each of the nine months ended September 30, 2016 and 2015. As of September 30, 2016 and December 31, 2015, we had trade accounts receivable from Deluxe of approximately $0.6 million and $0.1 million, respectively.

SmarDTV

In May 2015, we acquired a 22.5% interest in SmarDTV, which we account for using the equity method. Pursuant to our agreements with SmarDTV and its subsidiaries, we purchased engineering services from and paid royalties to SmarDTV and its subsidiaries totaling $1.5 million and $1.7 million for the three months ended September 30, 2016 and 2015, respectively, and $5.2 million and $2.6 million for the nine months ended September 30, 2016 and 2015, respectively. As of September 30, 2016 and December 31, 2015, we had trade accounts payable to SmarDTV of $2.1 million and $0.9 million, respectively, and a current note receivable from SmarDTV of zero and $0.5 million, respectively, arising from a working capital adjustment pursuant to the acquisition agreement.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Unless the context indicates otherwise, as used herein, the terms "we," "us," "EchoStar," the "Company" and "our" refer to EchoStar Corporation and its subsidiaries. References to "$" are to United States dollars. The following management's discussion and analysis of our financial condition and results of operations should be read in conjunction with the condensed consolidated financial statements and notes to our financial statements included elsewhere in this Quarterly Report on Form 10-Q. This management's discussion and analysis is intended to help provide an understanding of our financial condition, changes in our financial condition and our results of operations. Many of the statements in this management's discussion and analysis are forward-looking statements that involve assumptions and are subject to risks and uncertainties that are often difficult to predict and beyond our control. Actual results could differ materially from those expressed or implied by such forward-looking statements. See "Disclosure Regarding Forward-Looking Statements" in this Quarterly Report on Form 10-Q for further discussion. For a discussion of additional risks, uncertainties and other factors that could impact our results of operations or financial condition, see the caption "Risk Factors" in Part II, Item 1A of this Quarterly Report on Form 10-Q and in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2015. Further, such forward-looking statements speak only as of the date of this Quarterly Report on Form 10-Q and we undertake no obligation to update them.

EXECUTIVE SUMMARY

EchoStar is a global provider of satellite service operations, video delivery solutions, digital set-top boxes, broadband satellite technologies and broadband services for home and office customers. We deliver innovative network technologies, managed services, and various communications solutions for enterprise and government customers. We currently operate in three business segments, which are differentiated primarily by their operational focus: Hughes, EchoStar Technologies, and EchoStar Satellite Services ("ESS"). These segments are consistent with the way decisions regarding the allocation of resources are made, as well as how operating results are reviewed by our chief operating decision maker ("CODM"), who for EchoStar is the Company's Chief Executive Officer.

Our segment operating results do not include real estate and other activities, costs incurred in certain satellite development programs and other business development activities, expenses of various corporate departments, and our centralized treasury operations, including income from our investment portfolio and interest expense on our debt. These activities are accounted for in "All Other and Eliminations."

Highlights from our financial results are as follows:

2016 Third Quarter Consolidated Results of Operations

- Revenue of $742.3 million
- Operating income of $82.0 million
- Net income of $37.4 million
- Net income attributable to EchoStar common stock of $36.6 million and basic earnings per share of common stock of $0.39
- EBITDA of $211.0 million (see reconciliation of this non-GAAP measure on page 48)

Consolidated Financial Condition as of September 30, 2016

- Total assets of $8.98 billion
- Total liabilities of $5.00 billion

- Total stockholders’ equity of $3.98 billion
- Cash, cash equivalents and current marketable investment securities of $3.02 billion

Hughes Segment

Our Hughes segment is a global provider of broadband satellite technologies and broadband services for home and office customers. We deliver network technologies, managed services and communications solutions for domestic and international consumer, enterprise and government customers.

We continue to focus our efforts on growing our Hughes segment consumer revenue by maximizing utilization of our existing satellites while planning for new satellites to be launched. Our consumer revenue growth depends on our success in adding new subscribers and driving higher average revenue per subscriber across our wholesale and retail channels.

We have been preparing for the launch of the EchoStar XIX satellite, a next-generation, high throughput geostationary satellite, which will provide significant capacity for continued subscriber growth. In March 2013, we entered into a contract for the design and construction of the EchoStar XIX satellite, which is expected to be launched in the fourth quarter of 2016. The EchoStar XIX satellite will employ a multi-spot beam, bent pipe Ka-band architecture and will provide additional capacity for the Hughes broadband services in North America and certain Latin American countries. Capital expenditures associated with the construction and launch of the EchoStar XIX satellite are included in "All Other and Eliminations" in our segment reporting. EchoStar intends to contribute the EchoStar XIX satellite to its Hughes segment after the launch of the satellite.

In addition to our broadband consumer service offerings, our Hughes segment also provides managed services, hardware, and satellite services to large enterprise and government customers globally. Examples of such customers include lottery agencies, gas station operators and companies with multi-branch networks that rely on satellite or terrestrial networks for critical communication across wide geographies. Most of our enterprise customers have contracts with us for the services they purchase.

Our Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems. Developments toward the launch of next-generation satellite systems including low-earth orbit ("LEO") and geostationary systems could provide additional opportunities to drive the demand for our network equipment and services. The growth of our enterprise and equipment businesses relies heavily on global economic conditions and the competitive landscape for pricing relative to competitors and alternative technologies.

We continue our efforts to grow our consumer satellite services business outside of the U.S. In April 2014, we entered into a satellite services agreement pursuant to which Eutelsat do Brasil provides us Ka-band capacity into Brazil on the EUTELSAT 65 West A satellite for a 15-year term. That satellite was launched in March 2016 and we began delivering high-speed consumer satellite broadband services in Brazil in July 2016. In September 2015, we entered into satellite services agreements pursuant to which affiliates of Telesat Canada will provide to us, the Ka-band capacity on a satellite to be located at the 63 degree west longitude orbital location for a 15-year term. We expect the satellite to be launched in the second quarter of 2018 and plan to enter into service in additional markets across South America once that capacity is available for commercial use.

As of September 30, 2016 and December 31, 2015, our Hughes segment had approximately 1,018,000 and 1,035,000 broadband subscribers, respectively. These broadband subscribers include customers that subscribe to our HughesNet broadband services through retail, wholesale and small/medium enterprise service channels. Gross subscriber additions decreased slightly in the third quarter of 2016 when compared to the second quarter of 2016 primarily due to a decrease in additions in our wholesale channel due to satellite beams servicing certain areas reaching capacity. Our average monthly subscriber churn percentage for the third quarter of 2016 increased as compared to the second quarter of 2016. As a result of lower gross subscriber additions and an increase in churn, net subscribers for the quarter ended September 30, 2016 decreased by approximately 12,000 when compared to the second quarter of 2016 with decreases in both wholesale and retail subscribers. Subscriber additions and churn include only subscribers through our retail and wholesale channels.

As of September 30, 2016 and December 31, 2015, our Hughes segment had approximately $1.46 billion and $1.44 billion, respectively, of contracted revenue backlog. We define Hughes contracted revenue backlog as our expected future revenue under customer contracts that are non-cancelable, excluding agreements with customers in our consumer market.

EchoStar Technologies Segment

Our EchoStar Technologies segment designs, develops and distributes secure end-to-end video technology solutions including digital set-top boxes and related products and technology, primarily for satellite TV service providers and telecommunication companies. The primary customer for our digital set-top boxes is DISH Network Corporation and its subsidiaries ("DISH Network"), and we also sell our digital set-top boxes to Bell TV, a direct-to-home satellite service provider in Canada, and Dish Mexico, S. de R.L. de C.V. ("Dish Mexico"), a joint venture that we entered into in 2008.

We depend on DISH Network for a substantial portion of our EchoStar Technologies segment revenue and we expect that DISH Network will continue to be the primary source of revenue for our EchoStar Technologies segment. In addition, our equipment revenue from DISH Network depends on the timing of orders for set-top boxes and related accessories from DISH Network based on its actual and projected subscriber growth. Therefore, the results of operations of our EchoStar Technologies segment are, and are likely to continue to be, closely linked to the performance of DISH Network's pay-TV service. Our EchoStar Technologies segment offers multiple set-top boxes with different price points depending on their capabilities and functionalities. The revenue and associated margins we earn on sales are determined largely through the receiver agreement, effective January 2012, between us and DISH Network (the "2012 Receiver Agreement") which could result in prices reflecting, among other things, the set-top boxes and other equipment that meet DISH Network's current sales and marketing priorities, the product and service alternatives available from other equipment suppliers, our ability to respond to DISH Network's requirements, and our ability to differentiate ourselves from other equipment suppliers on bases other than pricing. In addition, products containing new technologies and features typically have higher initial prices, which reduce over time as a result of manufacturing efficiencies. Volume of unit sales could continue to reduce over time as a result of continued demand decreases or as DISH Network increases the deployment of refurbished units as opposed to new units purchased from us.

Our EchoStar Technologies segment also provides digital broadcast operations, including satellite uplinking/downlinking, transmission services, signal processing, conditional access management, and other services, primarily to DISH Network and Dish Mexico. In addition, we provide our TV Anywhere technology through Slingbox units directly to consumers via retail outlets and online, as well as to the pay-TV operator market. Our EchoStar Technologies segment also includes Move Networks, our over-the-top ("OTT"), Streaming Video on Demand ("SVOD") platform business, which licenses technology and provides services to DISH Network's Sling TV service ("Sling TV") (see Note 16 in our notes to condensed consolidated financial statements).

During the second quarter of 2015, our EchoStar Technologies segment contributed several of its European subsidiaries to SmarDTV SA ("SmarDTV"), a Swiss subsidiary of Kudelski SA that offers set-top boxes and conditional access modules, in exchange for a 22.5% interest in the equity and subordinated debt of SmarDTV. We and SmarDTV also entered into a services agreement pursuant to which our EchoStar Technologies segment purchases certain engineering services from SmarDTV.

We continue to focus on building and strengthening our brand recognition by providing unique and technologically advanced features and products. Products containing new technologies and features typically have higher initial selling prices, margins and volumes. As products mature and new products are in the late stages of development, volumes typically decrease as our customers, primarily DISH Network, increase deployment of refurbished set-top boxes as opposed to purchasing new units from us. The market for our digital set-top boxes, like other electronic products, has also been characterized by regular reductions in selling prices and production costs. Our ability to sustain or increase profitability also depends in large part on our ability to control or reduce our costs of producing digital set-top boxes. Based on our experience, we expect our cost of manufacturing a specific set-top box model to decline over time as our contract manufacturers generate efficiencies with scale of production and engineering cost reductions. Overall, our success depends heavily on our ability to bring advanced technologies to market to continue to be a market leader and innovator.

The number of potential new customers for our set-top box business in our EchoStar Technologies segment is small and may be limited as prospective customers that have been competitors of DISH Network may continue to view us as a competitor due to our common ownership with DISH Network. Our customers face emerging competition from other providers of digital media and potential government action preventing them from using security systems in connection with set-top boxes. In particular, programming offered over the internet has become more prevalent as the speed and quality of broadband networks have improved. Additionally, the FCC is considering adopting regulations enabling consumer electronics manufacturers, innovators and other developers to build devices or software solutions that may provide access to multichannel video programming with the use of user interfaces and without the use of any set-top box. As a result, consumers may then be able to access content provided by DISH Network and other customers using products produced by our competitors and without using our set-top boxes or other products. As a result, we expect that demand for our satellite television digital set-top boxes from DISH Network and other customers will likely continue to decline and we may not be able to sustain our current revenue levels.

With our expertise in connectivity and video, we continue to evaluate developing new consumer product and service offerings intended to grow our EchoStar Technologies segment revenue over time. In July 2016 we made the decision not to proceed with our direct to consumer security and home automation solution product offering and associated services which we had introduced earlier in the year. We have completed the process of shutting down all activities, services and operations related to this product offering.

EchoStar Satellite Services Segment

Our ESS segment is a global provider of satellite service operations and video delivery solutions. We operate our business using our owned and leased in-orbit satellites. We provide satellite services on a full-time and occasional-use basis primarily to DISH Network (our largest customer), Dish Mexico, U.S. government service providers, internet service providers, broadcast news organizations, programmers and private enterprise customers.

We depend on DISH Network for a significant portion of the revenue for our ESS segment, and we expect that DISH Network will continue to be the primary source of revenue for our ESS segment. Therefore, the results of operations of our ESS segment are linked to changes in DISH Network’s satellite capacity requirements. DISH Network’s capacity requirements have been driven by the addition of new channels and migration of programming to high-definition TV and video on demand services. The services that we provide to DISH Network are critical to its nationwide delivery of content to its customers across the U.S.

In August 2014, we entered into: (i) a construction contract with Airbus Defence and Space SAS for the construction of the EchoStar 105/SES-11 satellite with C-band, Ku-band and Ka-band payloads; (ii) an agreement with SES Satellite Leasing Limited for the procurement of the related launch services; and (iii) an agreement with SES Americom Inc. (“SES”) pursuant to which we will transfer the title to the C-band and Ka-band payloads to SES Satellite Leasing Limited at launch and transfer the title to the Ku-band payload to SES following in-orbit testing of the satellite. Simultaneously, SES will provide to us satellite service on the entire Ku-band payload on the EchoStar 105/SES-11 satellite for an initial ten-year term, with an option for us to renew the agreement on a year-to-year basis. Due to anomalies experienced by our launch provider, the expected launch date of the EchoStar 105/SES-11 satellite has been delayed. We currently expect to launch the EchoStar 105/SES-11 satellite in the first half of 2017. Our Ku-band payload on the EchoStar 105/SES-11 satellite will replace and augment our current capacity on the AMC-15 satellite. As a result of this launch delay, we expect to incur additional costs related to the lease of the AMC-15 satellite.

Revenue growth in our ESS segment depends largely on our ability to continuously make additional satellite capacity available for sale. Once the EchoStar 105/SES-11 satellite is launched and placed into operation, we expect periodic revenue from the satellite to exceed the amount currently generated by the AMC-15 satellite. As a result of the launch delay, we expect a delay in revenue generated from the EchoStar 105/SES-11 satellite.

We continue to pursue expanding our business offerings by providing value added services such as telemetry, tracking, and control services to third parties, which leverages the ground monitoring networks and personnel currently within our business.

As of September 30, 2016 and December 31, 2015, our ESS segment had contracted revenue backlog attributable to satellites currently in orbit of approximately $1.21 billion and $1.41 billion, respectively.

New Business Opportunities

Our industry is evolving with the increase in worldwide demand for broadband internet access for information, entertainment and commerce. In addition to fiber and wireless systems, other technologies such as geostationary high throughput satellites, LEO orbit networks, balloons, and High Altitude Platform Systems will likely play significant roles in enabling global broadband access, networks and services. We intend to use our expertise, technologies, capital, investments, global presence, relationships and other capabilities to continue to provide broadband internet systems, networks and services for information, entertainment and commerce in North America and internationally for consumers, enterprises and governments.

We are selectively exploring opportunities to pursue partnerships, joint ventures and strategic acquisition opportunities, domestically and internationally, that we believe may allow us to increase our existing market share, expand into new markets, broaden our portfolio of products and intellectual property, and strengthen our relationships with our customers. We may allocate significant resources for long-term initiatives that may not have a short or medium-term or any positive impact on our revenue, results of operations, or cash flow.

In 2012, we acquired the right to use various frequencies at the 45 degree west longitude orbital location (“Brazilian Authorization”) from ANATEL, the Brazilian communications regulatory agency. The Brazilian Authorization provides us the rights to utilize Ku-band spectrum, Ka-band spectrum and S-band spectrum. We are exploring options for the Ka-band and S-band spectrums. In April 2014, we entered into an agreement with Space Systems Loral, LLC (“SS/L”) for the construction of the EchoStar XXIII satellite, a high powered broadcast satellite service satellite. The EchoStar XXIII satellite will be deployed at the 45 degree west longitude orbital location. Due to anomalies experienced by our launch provider, the expected launch date of our EchoStar XXIII satellite has been delayed. We currently expect to launch the EchoStar XXIII satellite in the fourth quarter of 2016 or first quarter of 2017. We have regulatory obligations to meet certain in-service milestones by the second quarter of 2017 for our Brazilian license at 45 west longitude for the Ka, Ku and S-band frequency bands. While we expect the EchoStar XXIII satellite to meet our regulatory milestone for Ku-band, if we do miss our milestone, we may be subject to the imposition of penalties, additional conditions or other requirements. We expect, however, that we will likely not meet our regulatory milestones for S-band and Ka-band and we have sought extensions of these two milestones, which may or may not be granted and, if granted, may be subject to penalties and our license to operate the satellite for currently planned and future business opportunities may be limited or subject to additional conditions or requirements.

In December 2013, we acquired 100% of Solaris Mobile, which is based in Dublin, Ireland and licensed by the European Union and its member states (“EU”) to provide mobile satellite services (“MSS”) and complementary ground component (“CGC”) services covering the entire EU using S-band spectrum. Solaris Mobile changed its name to EchoStar Mobile Limited (“EchoStar Mobile”) in the first quarter of 2015. We are in the process of developing commercial services utilizing the operable payload we own on the EUTELSAT 10A satellite, along with our EchoStar XXI S-band satellite. The EchoStar XXI satellite will provide space segment capacity to EchoStar Mobile. We believe we are in a unique position to deploy a European wide MSS/CGC network and maximize the long-term value of our S-band spectrum in Europe and other regions within the scope of our licenses. Due to anomalies experienced by our launch provider, the expected launch of our EchoStar XXI satellite has been delayed. We currently expect to launch the EchoStar XXI satellite in the fourth quarter of 2016 or first quarter of 2017. We have regulatory obligations to meet certain milestones by the fourth quarter of 2016 regarding the operations of the EchoStar XXI satellite across the European Union. We may need to seek extensions of certain of these requirements, which may or may not be granted and, if granted, may be subject to penalties, additional conditions or requirements.

We are tracking closely the developments in next-generation satellite businesses, and we are seeking to utilize our services, technologies and expertise to find new commercial opportunities for our business. In June 2015, we made an equity investment in WorldVu Satellites Limited (“OneWeb”), a global LEO satellite service company. In addition, our Hughes segment entered into an agreement with OneWeb to provide certain equipment and services in connection with the ground systems for OneWeb’s LEO satellites. Our Hughes segment also has the right of first refusal to 50% of the OneWeb capacity in the United States, Europe, Brazil and India for offering latency sensitive services to our Hughes segment’s customer base.

Capital expenditures associated with the construction and launch of the EchoStar XXIII and EchoStar XXI satellites are included in “All Other and Eliminations” in our segment reporting.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

RESULTS OF OPERATIONS

Three Months Ended September 30, 2016 Compared to the Three Months Ended September 30, 2015

	For the Three Months Ended September 30,		Variance	
Statements of Operations Data (1)	2016	2015	Amount	%
	(Dollars in thousands)			
Revenue:				
Services and other revenue - DISH Network	$221,867	$236,601	$(14,734)	(6.2)
Services and other revenue - other	278,009	277,640	369	0.1
Equipment revenue - DISH Network	156,227	157,184	(957)	(0.6)
Equipment revenue - other	86,246	89,454	(3,208)	(3.6)
Total revenue	742,349	760,879	(18,530)	(2.4)
Costs and Expenses:				
Cost of sales - services and other	213,621	219,686	(6,065)	(2.8)
% of Total services and other revenue	42.7 %	42.7 %		
Cost of sales - equipment	200,986	207,989	(7,003)	(3.4)
% of Total equipment revenue	82.9 %	84.3 %		
Selling, general and administrative expenses	101,541	91,830	9,711	10.6
% of Total revenue	13.7 %	12.1 %		
Research and development expenses	20,587	19,875	712	3.6
% of Total revenue	2.8 %	2.6 %		
Depreciation and amortization	123,633	132,892	(9,259)	(7.0)
Total costs and expenses	660,368	672,272	(11,904)	(1.8)
Operating income	81,981	88,607	(6,626)	(7.5)
Other Income (Expense):				
Interest income	6,260	2,562	3,698	*
Interest expense, net of amounts capitalized	(37,358)	(28,870)	(8,488)	29.4
Gains (losses) and impairment on marketable investment securities, net	230	(5,155)	5,385	*
Equity in earnings (losses) of unconsolidated affiliates, net	5,164	(2,324)	7,488	*
Other, net	645	2,115	(1,470)	(69.5)
Total other expense, net	(25,059)	(31,672)	6,613	(20.9)
Income before income taxes	56,922	56,935	(13)	—
Income tax provision, net	(19,512)	(28,577)	9,065	(31.7)
Net income	37,410	28,358	9,052	31.9
Less: Net income (loss) attributable to noncontrolling interest in HSS Tracking Stock	85	(686)	771	*
Less: Net income attributable to other noncontrolling interests	524	209	315	*
Net income attributable to EchoStar	$36,801	$28,835	$7,966	27.6
Other Data:				
EBITDA (2)	$211,044	$216,612	$(5,568)	(2.6)

Subscribers, end of period	1,018,000	1,025,000	(7,000)	(0.7)

* Percentage is not meaningful.

(1) An explanation of our key metrics is included on pages 62 and 63 under the heading “Explanation of Key Metrics and Other Items.”

(2) A reconciliation of EBITDA to “Net income,” the most directly comparable GAAP measure in the accompanying financial statements, is included on page 48. For further information on our use of EBITDA see “Explanation of Key Metrics and Other Items” on page 63.

Services and other revenue - DISH Network. "Services and other revenue - DISH Network" totaled $221.9 million for the three months ended September 30, 2016, a decrease of $14.7 million or 6.2%, compared to the same period in 2015.

Services and other revenue - DISH Network from our Hughes segment for the three months ended September 30, 2016 increased by $0.6 million, or 2.5%, to $24.3 million compared to the same period in 2015. The increase was primarily attributable to an increase in wholesale subscribers receiving services pursuant to our Distribution Agreement with dishNET Satellite Broadband L.L.C. ("dishNET").

Services and other revenue - DISH Network from our EchoStar Technologies segment for the three months ended September 30, 2016 increased by $5.3 million, or 5.2%, to $107.4 million compared to the same period in 2015. The increase was primarily due to an increase of $10.6 million in revenue earned for engineering support services related to Sling TV and other projects, partially offset by a decrease of $4.9 million in revenue earned for support services related to receiver developments.

Services and other revenue - DISH Network from our ESS segment for the three months ended September 30, 2016 decreased by $20.6 million, or 19.2%, to $87.0 million compared to the same period in 2015. The decrease was primarily due to a decrease of $20.8 million in revenue as a result of the termination of the satellite services provided to DISH Network on the EchoStar I and EchoStar VIII satellites effective in November 2015.

Services and other revenue - other. "Services and other revenue - other" totaled $278.0 million for the three months ended September 30, 2016, an increase of $0.4 million or 0.1%, compared to the same period in 2015.

Services and other revenue - other from our Hughes segment for the three months ended September 30, 2016 increased by $2.6 million, or 1.0%, to $263.0 million compared to the same period in 2015. The increase was primarily attributable to an increase of $4.6 million in sales of broadband services to our domestic consumer customers, partially offset by a decrease of $1.6 million of broadband services to our international customers.

Services and other revenue - other from our ESS segment for the three months ended September 30, 2016 decreased by $2.2 million, or 13.1%, to $14.5 million compared to the same period in 2015. The decrease was primarily attributable to a decrease in sales of transponder services due to a decrease in the number of transponders available for use in providing service.

Equipment revenue - DISH Network. "Equipment revenue - DISH Network" totaled $156.2 million for the three months ended September 30, 2016, a decrease of $1.0 million or 0.6%, compared to the same period in 2015 primarily from our Hughes segment. The decrease was primarily due to the decrease in the volume of unit sales of broadband equipment to dishNET.

Equipment revenue - other. "Equipment revenue - other" totaled $86.2 million for the three months ended September 30, 2016, a decrease of $3.2 million or 3.6%, compared to the same period in 2015.

Equipment revenue - other from our Hughes segment for the three months ended September 30, 2016 increased by $13.9 million, or 26.6%, to $66.4 million compared to the same period in 2015. The increase was primarily due to an increase of $17.0 million in sales of broadband equipment to our domestic enterprise customers and a $1.6 million increase in sales to our telecom systems customers. The increase was partially offset by a decrease of $5.7 million in revenue from our international customers.

Equipment revenue - other from our EchoStar Technologies segment for the three months ended September 30, 2016 decreased by $17.2 million, or 46.4%, to $19.8 million compared to the same period in 2015. The decrease was primarily attributable to a decrease in the volume of unit sales of set-top boxes and related accessories of 54.8% and 28.9%, respectively sold primarily to our international customers, and a decrease in the weighted average price of accessories of 5.0% sold primarily to our international customers. The decreases were partially offset by an increase in the weighted average price of set-top boxes of 6.1% sold to our international customers.

Cost of sales - services and other. “Cost of sales - services and other” totaled $213.6 million for the three months ended September 30, 2016, a decrease of $6.1 million or 2.8%, compared to the same period in 2015.

Cost of sales - services and other from our EchoStar Technologies segment for the three months ended September 30, 2016 increased by $8.1 million, or 10.9%, to $82.2 million compared to the same period in 2015. The increase was primarily due to an increase in support costs related to engineering services.

Cost of sales - services and other from our ESS segment for the three months ended September 30, 2016 decreased by $1.9 million, or 10.3%, to $16.2 million compared to the same period in 2015. The decrease was primarily due to a decrease in cost of sales of transponder services as a result of a decrease in the number of leased transponders available for use in providing service.

Cost of sales - services and other from All Other and Eliminations for the three months ended September 30, 2016 decreased by $12.9 million, or 94.9%, to $0.7 million compared to the same period in 2015. The decrease was primarily due to a decrease in cost of sales relating to the EchoStar XV satellite for services provided from DISH Network as a result of the termination of the satellite service agreement effective in November 2015.

Cost of sales - equipment. “Cost of sales - equipment” totaled $201.0 million for the three months ended September 30, 2016, a decrease of $7.0 million or 3.4%, compared to the same period in 2015.

Cost of sales - equipment from our Hughes segment for the three months ended September 30, 2016 increased by $5.1 million, or 10.5%, to $53.5 million compared to the same period in 2015. The increase was primarily attributable to an increase of $11.3 million in equipment costs related to the increase in sales to our domestic consumer and enterprise customers, partially offset by a decrease of $5.6 million in equipment costs related to the decrease in sales to our international and telecom systems customers.

Cost of sales - equipment from our EchoStar Technologies segment for the three months ended September 30, 2016 decreased by $12.1 million, or 7.6%, to $147.5 million compared to the same period in 2015. The decrease was primarily attributable to a decrease in the weighted average cost of set-top boxes sold to DISH Network and a decrease in the volume of unit sales and weighted average cost of set-top boxes and related accessories sold to certain of our international customers. The decrease was partially offset by an increase in equipment costs related to the sale of related accessories sold to DISH Network.

Selling, general and administrative expenses. “Selling, general and administrative expenses” totaled $101.5 million for the three months ended September 30, 2016, an increase of $9.7 million or 10.6%, compared to the same period in 2015. The increase was primarily due to $13.9 million in restructuring charges as a result of our decision in July 2016 not to proceed with our direct-to-consumer security and home automation product offering and associated services within our EchoStar Technologies segment. The increase was partially offset by a decrease of $4.4 million in general and administrative expenses.

Research and development expenses. “Research and development expenses” totaled $20.6 million for the three months ended September 30, 2016, an increase of $0.7 million or 3.6%, compared to the same period in 2015. The increase was primarily related to an increase in research and development expense of $2.2 million in our Hughes segment, partially offset by a decrease in research and development expense of $1.5 million in our EchoStar Technologies segment. Our research and development activities vary based on the activity level and scope of other engineering and customer related development contracts.

Depreciation and amortization. "Depreciation and amortization" expenses totaled $123.6 million for the three months ended September 30, 2016, a decrease of $9.3 million or 7.0%, compared to the same period in 2015. The decrease was primarily related to certain of our fully amortized other intangible assets in our Hughes segment and All Other & Eliminations and the fully depreciated EchoStar IX satellite as of October 2015 in our ESS segment.

Interest expense, net of amounts capitalized. "Interest expense, net of amounts capitalized" totaled $37.4 million for the three months ended September 30, 2016, an increase of $8.5 million or 29.4%, compared to the same period in 2015. The increase was primarily due to an increase of $15.8 million in interest expense related to the issuance of the 2026 Senior Secured Notes and the 2026 Senior Unsecured Notes (collectively, the "2026 Notes") in the third quarter of 2016. The increase was partially offset by higher capitalized interest of $6.5 million related to the construction of the EchoStar XIX, EchoStar XXI, EchoStar XXIII, and EchoStar 105/SES-11 satellites, and payments for satellite services on the Telesat T19V ("63 West") satellite.

Gains (losses) and impairment on marketable investment securities, net. "Gains (losses) and impairment on marketable investment securities, net" totaled $0.2 million in gains for the three months ended September 30, 2016 compared to a loss of $5.2 million for the same period in 2015. The change of $5.4 million was primarily due to losses recorded in 2015 on our trading securities of $3.9 million and an other than temporary impairment loss in 2015 of $1.2 million on certain strategic equity securities in our marketable investment securities.

Equity in earnings (losses) of unconsolidated affiliates, net. "Equity in earnings (losses) of unconsolidated affiliates, net" totaled $5.2 million in earnings for the three months ended September 30, 2016 compared to a loss of $2.3 million for the same period in 2015. The change of $7.5 million was primarily related to an increase in earnings from our investment in Dish Mexico.

Other, net. "Other, net" totaled $0.6 million in income for the three months ended September 30, 2016 compared to $2.1 million in income for the same period in 2015. The change of $1.5 million or 69.5% was primarily related to a gain recorded in the third quarter of 2015 of $3.8 million related to a protective put associated with one of our trading securities and a decrease of $2.5 million in foreign exchange losses in the third quarter of 2016.

Earnings before interest, taxes, depreciation and amortization ("EBITDA"). EBITDA was $211.0 million for the three months ended September 30, 2016, a decrease of $5.6 million or 2.6%, compared to the same period in 2015. The decrease was primarily due to (i) a decrease in operating income, excluding depreciation and amortization, of $15.9 million for the three months ended September 30, 2016, (ii) a gain recorded in the third quarter of 2015 of $3.8 million related to a protective put associated with one of our trading securities, and (iii) an increase of $1.1 million in net income attributable to the noncontrolling interest in HSS Tracking Stock and other noncontrolling interests. The decrease was partially offset by (i) an increase of $7.5 million in the equity in earnings of unconsolidated affiliates, net, (ii) an increase of $5.4 million in gains on marketable investment securities, net of losses and impairment, and (iii) a decrease of $2.5 million in foreign exchange losses. EBITDA is a non-GAAP financial measure and is described under Explanation of Key Metrics and Other Items below. The following table reconciles EBITDA to Net income, the most directly comparable GAAP measure in the accompanying financial statements.

	For the Three Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Net income	$37,410	$28,358	$9,052	31.9
Interest income and expense, net	31,098	26,308	4,790	18.2
Income tax provision	19,512	28,577	(9,065)	(31.7)
Depreciation and amortization	123,633	132,892	(9,259)	(7.0)
Net (income) loss attributable to noncontrolling interest in HSS Tracking Stock and other noncontrolling interests	(609)	477	(1,086)	*

EBITDA	$211,044	$216,612	$(5,568)	(2.6)

Income tax provision. Income tax expense was $19.5 million for the three months ended September 30, 2016, a decrease of $9.1 million or 31.7%, compared to the same period in 2015. Our effective income tax rate was 34.3% and 50.2% for the three months ended September 30, 2016 and 2015, respectively. The variations in our current year effective tax rate from the U.S. federal statutory rate for the three months ended September 30, 2016 was primarily due to research and experimentation credits, partially offset by various permanent tax differences. The variations in our effective tax rate from the U.S. federal statutory rate for the three months ended September 30, 2015 was primarily due to the increase in our valuation allowance associated with certain foreign losses and realized and unrealized losses that are capital in nature, partially offset by research and experimentation tax credits.

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Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

Net income attributable to EchoStar. "Net income attributable to EchoStar" was $36.8 million for the three months ended September 30, 2016, an increase of $8.0 million or 27.6%, compared to the same period in 2015. The increase was primarily due to (i) a decrease in income tax expense of $9.1 million, (ii) an increase of $7.5 million in the equity of earnings of unconsolidated affiliates, net, (iii) higher capitalized interest of $6.5 million related to the construction of the EchoStar XIX, EchoStar XXI, EchoStar XXIII, and EchoStar 105/SES-11 satellites, and payments for satellite services on the 63 West satellite, (iv) an increase of $5.4 million in gains on marketable investment securities, net of losses and impairment, and (v) an increase of $3.7 million in interest income. The increase was partially offset by (i) an increase of $15.8 million in interest expense related to the issuance of the 2026 Notes in the third quarter of 2016, (ii) a decrease in operating income, including depreciation and amortization, of $6.6 million and (iii) an increase of $1.1 million in net income attributable to the noncontrolling interest in HSS Tracking Stock and other noncontrolling interests.

Segment Operating Results and Capital Expenditures

Three Months Ended September 30, 2016 Compared to the Three Months Ended September 30, 2015

	Hughes	EchoStar Technologies	EchoStar Satellite Services	All Other and Eliminations	Consolidated Total
	(In thousands)				
For the Three Months Ended September 30, 2016					
Total revenue	$355,876	$ 283,052	$101,480	$ 1,941	$ 742,349
Capital expenditures	$75,682	$ 17,239	$15,730	$ 48,162	$ 156,813
EBITDA	$112,018	$ 9,346	$83,700	$ 5,980	$ 211,044
For the Three Months Ended September 30, 2015					
Total revenue	$339,729	$ 294,925	$124,300	$ 1,925	$ 760,879
Capital expenditures	$72,626	$ 8,528	$32,416	$ 9,672	$ 123,242
EBITDA	$101,582	$ 25,946	$104,200	$ (15,116)	$ 216,612

Hughes Segment

	For the Three Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$355,876	$339,729	$16,147	4.8
Capital expenditures	$75,682	$72,626	$3,056	4.2
EBITDA	$112,018	$101,582	$10,436	10.3

Revenue

Hughes segment total revenue for the three months ended September 30, 2016 increased by $16.1 million, or 4.8%, compared to the same period in 2015. The increase was primarily due to an increase of $17.0 million in revenue related to sales of broadband equipment to our domestic enterprise customers, an increase of $5.2 million in revenue related to sales of broadband services to our consumer customers and dishNET, and an increase of $1.6 million in revenue related to sales of broadband equipment to our telecom systems customers. These increases were partially offset by a decrease of $7.3 million in revenue of broadband equipment and services to our international customers.

Capital Expenditures

Hughes segment capital expenditures for the three months ended September 30, 2016 increased by $3.1 million, or 4.2%, compared to the same period in 2015, primarily as a result of an increase in expenditures on the 63 West satellite and satellite ground infrastructures related to the EchoStar XIX and EchoStar XXI satellites.

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Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

EBITDA

Hughes segment EBITDA for the three months ended September 30, 2016 was $112.0 million, an increase of $10.4 million, or 10.3%, compared to the same period in 2015. The increase was primarily attributable to a $10.5 million increase in gross margin and a decrease of $2.5 million in foreign exchange losses. The increases were partially offset by an increase of $2.2 million in research and development expenses.

EchoStar Technologies Segment

	For the Three Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$283,052	$294,925	$(11,873)	(4.0)
Capital expenditures	$17,239	$8,528	$8,711	*
EBITDA	$9,346	$25,946	$(16,600)	(64.0)

* Percentage is not meaningful.

Revenue

EchoStar Technologies segment total revenue for the three months ended September 30, 2016 decreased by $11.9 million, or 4.0%, compared to the same period in 2015, primarily as a result of a decrease of $17.2 million in equipment revenue - other partially offset by an increase of $5.3 million in service revenue from DISH Network.

Capital Expenditures

EchoStar Technologies segment capital expenditures for the three months ended September 30, 2016 increased by $8.7 million compared to the same period in 2015, primarily as a result of increased expenditures related to the support of our Move Networks business.

EBITDA

EchoStar Technologies segment EBITDA for the three months ended September 30, 2016 was $9.3 million, a decrease of $16.6 million, or 64.0%, compared to the same period in 2015. The decrease in EBITDA for our EchoStar Technologies segment was primarily driven by $13.9 million in restructuring charges as a result of our decision in July 2016 not to proceed with our direct-to-consumer security and home automation product offering and associated services and a decrease of $7.9 million in gross margin, partially offset by a decrease of $4.0 million from selling, general and administrative expenses.

EchoStar Satellite Services Segment

	For the Three Months Ended	Variance

	September 30,			
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$101,480	$124,300	$(22,820)	(18.4)
Capital expenditures	$15,730	$32,416	$(16,686)	(51.5)
EBITDA	$83,700	$104,200	$(20,500)	(19.7)

Revenue

ESS segment total revenue for the three months ended September 30, 2016 decreased by $22.8 million, or 18.4%, compared to the same period in 2015, primarily due to a decrease of $20.8 million in revenue as a result of the termination of the satellite services provided to DISH Network on the EchoStar I and EchoStar VIII satellites effective in November 2015.

Item 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

Capital Expenditures

ESS segment capital expenditures for the three months ended September 30, 2016 decreased by $16.7 million, or 51.5%, compared to the same period in 2015, primarily related to a decrease in expenditures on the EchoStar 105/SES-11 satellite.

EBITDA

ESS segment EBITDA for the three months ended September 30, 2016 was $83.7 million, a decrease of $20.5 million, or 19.7%, compared to the same period in 2015. The decrease in EBITDA for our ESS segment was primarily due to a decrease of $21.0 million in gross margin primarily driven by the decrease in service revenue as a result of the termination of the satellite services provided to DISH Network from the EchoStar I and EchoStar VIII satellites effective in November 2015.

All Other and Eliminations

All Other and Eliminations accounts for certain items and activities in our condensed consolidated financial statements that have not been assigned to our operating segments. These include without limitation real estate and other activities, costs incurred in satellite development programs and other business development activities, expenses of various corporate departments, and our centralized treasury activities, including without limitation income from our investment portfolio and interest expense on our debt.

	For the Three Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$1,941	$1,925	$16	0.8
Capital expenditures	$48,162	$9,672	$38,490	*
EBITDA	$5,980	$(15,116)	$21,096	*

* Percentage is not meaningful.

Capital Expenditures

For the three months ended September 30, 2016, All Other and Eliminations capital expenditures increased by $38.5 million compared to the same period in 2015, primarily related to an increase in expenditures on the EchoStar XIX satellite of $72.9 million partially offset by a decrease in expenditures on the EchoStar XXIII satellite of $15.6 million and a decrease in expenditures on the EchoStar XXI satellite of $13.8 million. The EchoStar XIX satellite will be used to provide additional capacity for the Hughes broadband services in North America and certain Latin American countries. The EchoStar XXI satellite is intended to be used by EchoStar Mobile in providing mobile satellite services in the European Union. The EchoStar XXIII satellite will be initially deployed at the 45 degree west longitude orbital location providing services in Brazil.

EBITDA

For the three months ended September 30, 2016, All Other and Eliminations EBITDA was $6.0 million of income, compared to a loss of $15.1 million for the same period in 2015. The $21.1 million increase in EBITDA was primarily related to a decrease of $12.7 million in cost of sales relating to the EchoStar XV satellite for services provided from DISH Network as a result of the termination of the satellite service agreement effective in November 2015 and an increase of $7.3 million in the equity of earnings of unconsolidated affiliates, net.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

Nine Months Ended September 30, 2016 Compared to the Nine Months Ended September 30, 2015

Statements of Operations Data (1)	For the Nine Months Ended September 30, 2016	2015	Variance Amount	%
	(Dollars in thousands)			
Revenue:				
Services and other revenue - DISH Network	$655,793	$695,358	$(39,565)	(5.7)
Services and other revenue - other	826,430	824,130	2,300	0.3
Equipment revenue - DISH Network	590,988	577,277	13,711	2.4
Equipment revenue - other	243,126	256,362	(13,236)	(5.2)
Total revenue	2,316,337	2,353,127	(36,790)	(1.6)
Costs and Expenses:				
Cost of sales - services and other	618,271	645,691	(27,420)	(4.2)
% of Total services and other revenue	41.7 %	42.5 %		
Cost of sales - equipment	710,724	706,835	3,889	0.6
% of Total equipment revenue	85.2 %	84.8 %		
Selling, general and administrative expenses	296,377	280,462	15,915	5.7
% of Total revenue	12.8 %	11.9 %		
Research and development expenses	61,761	57,432	4,329	7.5
% of Total revenue	2.7 %	2.4 %		
Depreciation and amortization	370,872	398,547	(27,675)	(6.9)
Total costs and expenses	2,058,005	2,088,967	(30,962)	(1.5)
Operating income	258,332	264,160	(5,828)	(2.2)
Other Income (Expense):				
Interest income	13,729	7,896	5,833	73.9
Interest expense, net of amounts capitalized	(80,495)	(96,136)	15,641	(16.3)
Loss from partial redemption of debt	—	(5,044)	5,044	(100.0)
Gains (losses) and impairment on marketable investment securities, net	8,179	(11,408)	19,587	*
Equity in earnings (losses) of unconsolidated affiliates, net	11,181	(2,580)	13,761	*
Other, net	5,900	(4,078)	9,978	*
Total other expense, net	(41,506)	(111,350)	69,844	(62.7)
Income before income taxes	216,826	152,810	64,016	41.9
Income tax provision	(75,064)	(65,841)	(9,223)	14.0
Net income	141,762	86,969	54,793	63.0
Less: Net income (loss) attributable to noncontrolling interest in HSS Tracking Stock	(926)	(4,020)	3,094	(77.0)
Less: Net income attributable to other noncontrolling interests	946	1,006	(60)	(6.0)
Net income attributable to EchoStar	$141,742	$89,983	$51,759	57.5
Other Data:				
EBITDA (2)	$654,444	$642,611	$11,833	1.8
Subscribers, end of period	1,018,000	1,025,000	(7,000)	(0.7)

* Percentage is not meaningful.

(1) An explanation of our key metrics is included on pages 62 and 63 under the heading “Explanation of Key Metrics and Other Items.”

(2) A reconciliation of EBITDA to “Net income,” the most directly comparable GAAP measure in the accompanying financial statements, is included on page 56. For further information on our use of EBITDA see “Explanation of Key Metrics and Other Items” on page 63.

Services and other revenue - DISH Network. "Services and other revenue - DISH Network" totaled $655.8 million for the nine months ended September 30, 2016, a decrease of $39.6 million or 5.7%, compared to the same period in 2015.

Services and other revenue - DISH Network from our Hughes segment for the nine months ended September 30, 2016 increased by $4.8 million, or 6.9%, to $74.6 million compared to the same period in 2015. The increase was primarily attributable to an increase in wholesale subscribers receiving services pursuant to our Distribution Agreement with dishNET.

Services and other revenue - DISH Network from our EchoStar Technologies segment for the nine months ended September 30, 2016 increased by $17.8 million, or 6.1%, to $310.4 million compared to the same period in 2015. The increase was primarily due to an increase of $29.7 million in revenue earned for engineering support services related to Sling TV and other projects, offset partially by a decrease of $10.9 million in revenue earned for support services related to receiver developments in 2015.

Services and other revenue - DISH Network from our ESS segment for the nine months ended September 30, 2016 decreased by $63.0 million, or 19.4%, to $261.6 million compared to the same period in 2015. The decrease was mainly due to a decrease of $62.5 million in revenue as a result of the termination of the satellite services provided to DISH Network from the EchoStar I and EchoStar VIII satellites effective in November 2015.

Services and other revenue - other. "Services and other revenue - other" totaled $826.4 million for the nine months ended September 30, 2016, an increase of $2.3 million or 0.3%, compared to the same period in 2015.

Services and other revenue - other from our Hughes segment for the nine months ended September 30, 2016 increased by $9.8 million, or 1.3%, to $779.1 million compared to the same period in 2015. The increase was primarily attributable to an increase of $25.5 million in sales of broadband services to our domestic consumer customers, partially offset by a decrease of $13.5 million of broadband services to our international customers and a decrease of $1.6 million in sales of broadband services to our domestic enterprise customers.

Services and other revenue - other from our EchoStar Technologies segment for the nine months ended September 30, 2016 decreased by $1.6 million, or 20.7%, to $6.3 million compared to the same period in 2015. The decrease was primarily attributable to a decrease in revenue from mobile applications and teleport services.

Services and other revenue - other from our ESS segment for the nine months ended September 30, 2016 decreased by $5.4 million, or 10.9%, to $44.3 million compared to the same period in 2015. The decrease was primarily attributable to a decrease in sales of transponder services due to a decrease in the number of transponders available for use in providing service.

Equipment revenue - DISH Network. "Equipment revenue - DISH Network" totaled $591.0 million for the nine months ended September 30, 2016, an increase of $13.7 million or 2.4%, compared to the same period in 2015 primarily from our EchoStar Technologies segment. The increase in revenue for the nine months ended September 30, 2016 was primarily due to an increase in revenue of set-top boxes and related accessories. The increase in revenue of set-top boxes was primarily due to an 11.6% increase in the weighted average price of the set-top boxes sold, partially offset by a 10.0% decrease in the volume of unit sales. The increase in revenue of related accessories was primarily due to a 106.3% increase in the volume of unit sales, partially offset by a 49.4% decrease in the weighted average price of related accessories.

Equipment revenue - other. “Equipment revenue - other” totaled $243.1 million for the nine months ended September 30, 2016, a decrease of $13.2 million or 5.2%, compared to the same period in 2015.

Equipment revenue - other from our Hughes segment for the nine months ended September 30, 2016 increased by $6.6 million, or 4.3%, to $160.7 million compared to the same period in 2015. The increase was mainly due to an increase of $25.5 million in sales of broadband equipment to our domestic enterprise customers, partially offset by a decrease of $21.0 million in revenue from our international and telecom systems customers.

Equipment revenue - other from our EchoStar Technologies segment for the nine months ended September 30, 2016 decreased by $19.9 million, or 19.4%, to $82.4 million compared to the same period in 2015. The decrease was attributable to a decrease in the weighted average price of set-top boxes and related accessories of 20.2% and 7.9%, respectively, sold primarily to a certain international customer and a decrease in the volume of unit sales of set-top boxes and related accessories of 1.8% and 7.0%, respectively, sold primarily to our international customers.

Cost of sales - services and other. “Cost of sales - services and other” totaled $618.3 million for the nine months ended September 30, 2016, a decrease of $27.4 million or 4.2%, compared to the same period in 2015.

Cost of sales - services and other from our Hughes segment for the nine months ended September 30, 2016 decreased by $6.9 million, or 2.0%, to $334.4 million compared to the same period in 2015. The decrease was primarily attributable to a decrease in costs of our broadband services provided to our international customers of $5.5 million.

Cost of sales - services and other from our EchoStar Technologies segment for the nine months ended September 30, 2016 increased by $23.6 million, or 11.2%, to $233.8 million compared to the same period in 2015. The increase was primarily due to an increase in support costs related to engineering services.

Cost of sales - services and other from our ESS segment for the nine months ended September 30, 2016 decreased by $6.2 million, or 11.3%, to $48.1 million compared to the same period in 2015. The decrease was primarily due to a decrease in cost of sales of transponder services as a result of a decrease in the number of leased transponders available for use in providing service.

Cost of sales - services and other from All Other and Eliminations for the nine months ended September 30, 2016 decreased by $38.0 million, or 94.9%, to $2.0 million compared to the same period in 2015. The decrease was primarily due to a decrease in cost of sales relating to the EchoStar XV satellite for services provided from DISH Network as a result of the termination of the satellite service agreement effective in November 2015.

Cost of sales - equipment. “Cost of sales - equipment” totaled $710.7 million for the nine months ended September 30, 2016, an increase of $3.9 million or 0.6%, compared to the same period in 2015.

Cost of sales - equipment from our Hughes segment for the nine months ended September 30, 2016 increased by $1.6 million, or 1.1%, to $143.8 million compared to the same period in 2015. The increase was primarily attributable to an increase of $16.3 million in equipment costs related to the increase in sales volume of broadband equipment to our domestic consumer and enterprise customers, partially offset by a decrease of $15.6 million in equipment costs related to the decrease in sales to our international and telecom systems customers.

Cost of sales - equipment from our EchoStar Technologies segment for the nine months ended September 30, 2016 increased by $2.3 million, or 0.4%, to $566.9 million compared to the same period in 2015. The increase was primarily attributable to an increase in equipment costs related to the increase in the weighted average cost of related accessories sold to DISH Network. The increase was partially offset by decreases in the volume of unit sales and the weighted average cost of set-top boxes and related accessories sold to our international customers.

Selling, general and administrative expenses. “Selling, general and administrative expenses” totaled $296.4 million for the nine months ended September 30, 2016, an increase of $15.9 million or 5.7%, compared to the same period in 2015. The increase was primarily due to $13.9 million in restructuring charges as a result of our decision in July 2016 not to proceed with our direct-to-consumer security and home automation solution product offering and associated services within our EchoStar Technologies segment and an increase of $7.0 million and $3.2 million in marketing and promotional costs from our EchoStar Technologies segment and Hughes segment, respectively, offset partially by a decrease of $8.0 million in litigation settlements recorded in 2015.

Research and development expenses. “Research and development expenses” totaled $61.8 million for the nine months ended September 30, 2016, an increase of $4.3 million or 7.5%, compared to the same period in 2015. The increase was primarily related to an increase in research and development expense of $4.6 million in our Hughes segment, partially offset by a decrease in research and development expense of $0.3 million in our EchoStar Technologies segment. Our research and development activities vary based on the activity level and scope of other engineering and customer related development contracts.

Depreciation and amortization. "Depreciation and amortization" expenses totaled $370.9 million for the nine months ended September 30, 2016, a decrease of $27.7 million or 6.9%, compared to the same period in 2015. The decrease was primarily related to certain of our fully amortized other intangible assets in our Hughes segment and All Other & Eliminations and the fully depreciated EchoStar IX satellite as of October 2015 in our ESS segment.

Interest expense, net of amounts capitalized. "Interest expense, net of amounts capitalized" totaled $80.5 million for the nine months ended September 30, 2016, a decrease of $15.6 million or 16.3%, compared to the same period in 2015. The decrease was primarily due to higher capitalized interest of $26.1 million related to the construction of the EchoStar XIX, EchoStar XXI, EchoStar XXIII, and EchoStar 105/SES-11 satellites, and payments for satellite services on the EUTELSAT 65 West A and 63 West satellites, a decrease in interest expense of $3.2 million relating to the partial redemption of the outstanding principal amount of HSS' 6 1/2 Senior Secured Notes due 2019 (the "2019 Senior Secured Notes") in 2015, and a decrease in interest expense of $2.1 million relating to two of our satellites that are accounted for as capital leases. The decreases were partially offset by an increase of $15.8 million in interest expense related to the issuance of the 2026 Notes in the third quarter of 2016.

Loss from partial redemption of debt. "Loss from partial redemption of debt" totaled zero for the nine months ended September 30, 2016. In 2015, the $5.0 million loss related to the partial redemption of the 2019 Senior Secured Notes in the second quarter of 2015 which included a $3.3 million redemption premium and a $1.7 million write off of related unamortized financing costs.

Gains (losses) and impairment on marketable investment securities, net. "Gains (losses) and impairment on marketable investment securities, net" totaled $8.2 million in gains for the nine months ended September 30, 2016 compared to $11.4 million in losses for the same period in 2015. The change of $19.6 million was primarily due to an increase of $7.9 million in gains on our trading securities, an other than temporary impairment loss of $5.9 million on certain strategic equity securities in our marketable investment securities in 2015, and an increase of $5.6 million in realized gains on our securities classified as available-for-sale.

Equity in earnings (losses) of unconsolidated affiliates, net. "Equity in earnings (losses) of unconsolidated affiliates, net" totaled $11.2 million in earnings for the nine months ended September 30, 2016 compared to $2.6 million in losses for the same period in 2015. The change of $13.8 million was primarily related to an increase in earnings from our investment in Dish Mexico.

Other, net. "Other, net" totaled $5.9 million in income for the nine months ended September 30, 2016 compared to $4.1 million of expense for the nine months ended September 30, 2015. The change of $10.0 million was primarily related to (i) $13.5 million for a provision recorded in the first half of 2015 in connection with FCC regulatory fees, which was reversed in the first quarter of 2016, (ii) a decrease of $8.8 million in foreign exchange losses, (iii) a decrease of $6.1 million related to a protective put associated with our trading securities, (iv) a $4.5 million non-recurring reduction of the capital lease obligation for the AMC-15 and AMC-16 satellites recorded in the first quarter of 2015 as a result of anomalies that previously affected the operation of these satellites, and (v) a gain of $1.7 million on the exchange of accounts receivable for certain trading securities in the second quarter of 2015.

Earnings before interest, taxes, depreciation and amortization ("EBITDA"). EBITDA was $654.4 million for the nine months ended September 30, 2016, an increase of $11.8 million or 1.8%, compared to the same period in 2015. The increase was primarily due to (i) an increase of $19.6 million in gains on marketable investments, net of losses and impairments, (ii) an increase of $13.8 million in equity in earnings of unconsolidated affiliates, net, (iii) $13.5 million for a provision recorded in the first half of 2015 in connection with FCC regulatory fees, which was reversed in the first quarter of 2016, (iv) a decrease of $8.8 million in foreign exchange losses, and (v) a $5.0 million loss related to the partial redemption of the 2019 Senior Secured Notes in the second quarter of 2015. The increase was partially offset by (i) a decrease in operating income, excluding depreciation and amortization, of $33.5 million for the nine months ended September 30, 2016, (ii) a decrease of $6.1 million related to a protective put associated with our trading securities, (iii) a $4.5 million non-recurring reduction of the capital lease obligation for the AMC-15 and AMC-16 satellites recorded in the first quarter of 2015 as a result of anomalies that previously affected the operation of these satellites, (iv) an increase of $3.0 million in net income attributable to the noncontrolling interest in HSS Tracking Stock and other noncontrolling interests, and (v) a gain of $1.7 million on the exchange of accounts receivable for certain trading securities in the second quarter of 2015. EBITDA is a non-GAAP financial measure and is described under Explanation of Key Metrics and Other Items below.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

The following table reconciles EBITDA to Net income, the most directly comparable GAAP measure in the accompanying financial statements.

	For the Nine Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Net income	$141,762	$86,969	$54,793	63.0
Interest income and expense, net	66,766	88,240	(21,474)	(24.3)
Income tax provision	75,064	65,841	9,223	14.0
Depreciation and amortization	370,872	398,547	(27,675)	(6.9)
Net (income) loss attributable to noncontrolling interest in HSS Tracking Stock and other noncontrolling interests	(20)	3,014	(3,034)	*
EBITDA	$654,444	$642,611	$11,833	1.8

Income tax provision. Income tax expense was $75.1 million for the nine months ended September 30, 2016, an increase of $9.2 million or 14.0% compared to the same period in 2015. Our effective income tax rate was 34.6% and 43.1% for the nine months ended September 30, 2016 and 2015, respectively. The variations in our current year effective tax rate from the U.S. federal statutory rate for the nine months ended September 30, 2016 were primarily due to research and experimentation credits, partially offset by various permanent tax differences. The variations in our effective tax rate from the U.S. federal statutory rate for the nine months ended September 30, 2015 were primarily due to the increase in our valuation allowance associated with certain foreign losses and realized and unrealized losses that are capital in nature, partially offset by research and experimentation tax credits.

Net income attributable to EchoStar. "Net income attributable to EchoStar" was $141.7 million for the nine months ended September 30, 2016, an increase of $51.8 million or 57.5%, compared to the same period in 2015. The increase was primarily due to (i) higher capitalized interest of $26.1 million related to the construction of the EchoStar XIX, EchoStar XXI, EchoStar XXIII, and EchoStar 105/SES-11 satellites, and payments for satellite services on the EUTELSAT 65 West A and 63 West satellites, (ii) an increase of $19.6 million in gains on marketable investments, net of losses and impairments, (iii) an increase of $13.8 million in equity in earnings of unconsolidated affiliates, net, (iv) $13.5 million for a provision recorded in the first half of 2015 in connection with FCC regulatory fees, which was reversed in the first quarter of 2016, (v) a decrease of $8.8 million in foreign exchange losses, (vi) a $5.0 million loss related to the partial redemption of the 2019 Senior Secured Notes in the second quarter of 2015, and (vii) a decrease in interest expense of $3.2 million relating to the partial redemption of the outstanding principal amount of the 2019 Senior Secured Notes in 2015. The increase was partially offset by (i) an increase of $15.8 million in interest expense related to the issuance of the 2026 Notes in the third quarter of 2016, (ii) an increase in income tax expense of $9.2 million, (iii) a decrease of $6.1 million related to a protective put associated with our trading securities, (iv) a $4.5 million non-recurring reduction of the capital lease obligation for the AMC-15 and AMC-16 satellites recorded in the first quarter of 2015 as a result of anomalies that previously affected the operation of these satellites and (v) a gain of $1.7 million on the exchange of accounts receivable for certain trading securities in the second quarter of 2015.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

Segment Operating Results and Capital Expenditures

Nine Months Ended September 30, 2016 Compared to the Nine Months Ended September 30, 2015

	Hughes	EchoStar Technologies	EchoStar Satellite Services	All Other and Eliminations	Consolidated Total
	(In thousands)				
For the Nine Months Ended September 30, 2016					
Total revenue	$1,021,451	$ 983,115	$305,919	$ 5,852	$ 2,316,337
Capital expenditures	$261,241	$ 31,764	$50,762	$ 165,815	$ 509,582
EBITDA	$317,865	$ 57,426	$255,712	$ 23,441	$ 654,444
For the Nine Months Ended September 30, 2015					
Total revenue	$1,000,194	$ 973,097	$374,287	$ 5,549	$ 2,353,127
Capital expenditures	$207,680	$ 32,783	$84,667	$ 155,022	$ 480,152
EBITDA	$296,269	$ 80,764	$314,177	$ (48,599)	$ 642,611

Hughes Segment

	For the Nine Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$1,021,451	$1,000,194	$21,257	2.1
Capital expenditures	$261,241	$207,680	$53,561	25.8
EBITDA	$317,865	$296,269	$21,596	7.3

Revenue

Hughes segment total revenue for the nine months ended September 30, 2016 increased by $21.3 million, or 2.1%, compared to the same period in 2015. The increase was primarily due to an increase of $30.5 million in revenue related to sales of broadband services to our consumer customers and dishNET and an increase of $25.5 million in revenue related to sales of broadband equipment to our domestic enterprise customers. These increases were partially offset by a decrease in revenue of broadband equipment and services to our international and telecom systems customers of $34.4 million.

Capital Expenditures

Hughes segment capital expenditures for the nine months ended September 30, 2016 increased by $53.6 million, or 25.8%, compared to the same period in 2015, primarily as a result of an increase in expenditures on the 63 West and EUTELSAT 65 West A satellites, and satellite ground infrastructures related to the EchoStar XIX and EchoStar XXI satellites.

EBITDA

Hughes segment EBITDA for the nine months ended September 30, 2016 was $317.9 million, an increase of $21.6 million, or 7.3%, compared to the same period in 2015. The increase was primarily attributable to a $26.6 million increase in total gross margin, a decrease of $4.8 million in foreign exchange losses, and a decrease of $3.0 million in litigation settlements recorded in 2015. These increases were partially offset by an increase of $4.6 million in research and development expenses, an increase of $3.2 million in marketing and promotional costs, and an increase of $4.8 million in general and administrative expenses.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

EchoStar Technologies Segment

	For the Nine Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$983,115	$973,097	$10,018	1.0
Capital expenditures	$31,764	$32,783	$(1,019)	(3.1)
EBITDA	$57,426	$80,764	$(23,338)	(28.9)

Revenue

EchoStar Technologies segment total revenue for the nine months ended September 30, 2016 increased by $10.0 million, or 1.0%, compared to the same period in 2015, primarily resulting from an increase of $17.8 million in service revenue from DISH Network and an increase of $13.7 million in equipment revenue from DISH Network, partially offset by a decrease of $19.9 million in equipment revenue - other and a decrease of $1.6 million in service revenue - other.

Capital Expenditures

EchoStar Technologies segment capital expenditures for the nine months ended September 30, 2016 decreased by $1.0 million, or 3.1%, compared to the same period in 2015, primarily due to a decrease in expenditures related to our digital broadcast centers of $14.5 million, partially offset by increased expenditures related to the support of our Move Networks business of $14.2 million.

EBITDA

EchoStar Technologies segment EBITDA for the nine months ended September 30, 2016 was $57.4 million, a decrease of $23.3 million, or 28.9%, compared to the same period in 2015. The decrease in EBITDA for our EchoStar Technologies segment was primarily driven by a decrease of $15.9 million in gross margin, $13.9 million in restructuring charges as a result of our decision in July 2016 not to proceed with our direct-to-consumer security and home automation solution product offering and associated services within our EchoStar Technologies segment, and a decrease of $1.7 million loss in equity of a certain unconsolidated affiliate, offset partially by a decrease of $5.0 million in a litigation settlement recorded in 2015 and a decrease of $4.0 million in foreign exchange losses in 2016.

EchoStar Satellite Services Segment

	For the Nine Months Ended September 30,		Variance	
	2016	2015	Amount	%

	(Dollars in thousands)			
Total revenue	$305,919	$374,287	$(68,368)	(18.3)
Capital expenditures	$50,762	$84,667	$(33,905)	(40.0)
EBITDA	$255,712	$314,177	$(58,465)	(18.6)

Revenue

ESS segment total revenue for the nine months ended September 30, 2016 decreased by $68.4 million, or 18.3%, compared to the same period in 2015, primarily due to a decrease of $62.5 million in revenue as a result of the termination of the satellite services provided to DISH Network from the EchoStar I and EchoStar VIII satellites effective in November 2015 and a decrease of $5.4 million primarily attributable to a decrease in sales of transponder services.

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Capital Expenditures

ESS segment capital expenditures for the nine months ended September 30, 2016 decreased by $33.9 million, or 40.0%, compared to the same period in 2015, primarily related to a decrease in expenditures on the EchoStar 105/SES-11 satellite.

EBITDA

ESS segment EBITDA for the nine months ended September 30, 2016 was $255.7 million, a decrease of $58.5 million, or 18.6%, compared to the same period in 2015. The decrease in EBITDA for our ESS segment was primarily due to a decrease of $62.2 million in gross margin primarily driven by the decrease in service revenue as a result of the termination of the satellite services provided to DISH Network from the EchoStar I and EchoStar VIII satellites effective in November 2015 and a $4.5 million non-recurring reduction of the capital lease obligation for the AMC-15 and AMC-16 satellites recorded in the first quarter of 2015 as a result of prior anomalies affecting these satellites. The decrease in EBITDA was partially offset by a $7.5 million increase due to a provision recorded in the first half of 2015 in connection with FCC regulatory fees, which was reversed in the first quarter of 2016.

All Other and Eliminations

All Other and Eliminations accounts for certain items and activities in our condensed consolidated financial statements that have not been assigned to our operating segments. These include without limitation real estate and other activities, costs incurred in satellite development programs and other business development activities, expenses of various corporate departments, and our centralized treasury activities, including without limitation income from our investment portfolio and interest expense on our debt.

	For the Nine Months Ended September 30,		Variance	
	2016	2015	Amount	%
	(Dollars in thousands)			
Total revenue	$5,852	$5,549	$303	5.5
Capital expenditures	$165,815	$155,022	$10,793	7.0
EBITDA	$23,441	$(48,599)	$72,040	*

* Percentage is not meaningful.

Capital Expenditures

For the nine months ended September 30, 2016, All Other and Eliminations capital expenditures increased by $10.8 million, or 7.0%, compared to the same period in 2015, primarily related to an increase in satellite expenditures on the EchoStar XIX satellite of $70.4 million, partially offset by a decrease in satellite expenditures on the EchoStar XXIII satellite of $55.5 million. The EchoStar XIX satellite will be used to provide additional capacity for the Hughes broadband services in North America and certain Latin American countries. The EchoStar XXI satellite is intended to be used by EchoStar Mobile in providing mobile satellite services in the European Union and the EchoStar XXIII satellite will be initially deployed at the 45 degree west longitude orbital location providing services in Brazil.

EBITDA

For the nine months ended September 30, 2016, All Other and Eliminations EBITDA was $23.4 million of income, compared to a loss of $48.6 million for the same period in 2015. The $72.0 million increase in EBITDA was primarily related to a decrease of $38.0 million in cost of sales relating to the EchoStar XV satellite for services provided from DISH Network as a result of the termination of the satellite service agreement effective in November 2015, an increase of $15.5 million in equity in earnings of unconsolidated affiliates, net, $6.0 million attributable to a provision recorded in the first half of 2015 in connection with FCC regulatory fees, which was reversed in the first quarter of 2016, an other than temporary impairment loss of $5.9 million on certain strategic equity securities in our marketable investment securities in 2015, and an increase of $5.6 million in realized gains on our securities classified as available-for-sale.

LIQUIDITY AND CAPITAL RESOURCES

Cash, Cash Equivalents and Current Marketable Investment Securities

We consider all liquid investments purchased with an original maturity of 90 days or less to be cash equivalents. See Note 6 to our condensed consolidated financial statements for further discussion regarding our marketable investment securities. As of September 30, 2016 and December 31, 2015, our cash, cash equivalents and current marketable investment securities totaled $3.02 billion and $1.54 billion, respectively.

As of September 30, 2016 and December 31, 2015, we held $803.3 million and $612.3 million, respectively, of various debt and equity instruments including corporate bonds, corporate equity securities, government bonds and mutual funds.

The following discussion highlights our cash flow activities for the nine months ended September 30, 2016.

Cash flows from operating activities. We typically reinvest the cash flow from operating activities in our business. For the nine months ended September 30, 2016, we reported net cash inflows from operating activities of $574.7 million, a decrease in cash inflows of $33.2 million, compared to the same period in 2015. The decrease in cash inflows was primarily attributable to a decrease of $42.1 million resulting from changes in operating assets and liabilities related to timing differences, partially offset by higher net income of $8.9 million adjusted to exclude: (i) "Depreciation and amortization;" (ii) "Equity in losses (earnings) of unconsolidated affiliates, net;" (iii) "Loss from partial redemption of debt;" (iv) "Loss (gain) and impairment on marketable investment securities, net;" (v) "Stock-based compensation;" (vi) "Deferred tax provision;" and "Other, net."

Cash flows from investing activities. Our investing activities generally include purchases and sales of marketable investment securities, capital expenditures, acquisitions and strategic investments. For the nine months ended September 30, 2016, we reported net cash outflows from investing activities of $759.8 million, an increase in cash outflows of $518.3 million compared to the same period in 2015. The increase in cash outflows primarily related to an increase of $563.4 million in purchases of marketable investment securities, net of sales and maturities, and an increase of $29.4 million in capital expenditures, net of related refunds, in 2016 when compared to the same period in 2015. The increase in cash outflows were partially offset by a $64.7 million investment in WorldVu and SmarDTV in the first half of 2015, a decrease of $9.1 million in restricted cash relating to a release in funds for certain satellite slots as a result of a FCC settlement in 2016 and the acquisition of a regulatory authorization in the first half of 2015 of $3.4 million.

Cash flows from financing activities. Our financing activities generally include proceeds related to the issuance of debt and cash used for the repurchase, redemption or payment of long-term debt and capital lease obligations and the proceeds from Class A common stock options exercised and stock issued under our stock incentive plans and employee stock purchase plan. For the nine months ended September 30, 2016, we reported net cash inflows from financing activities of $1.48 billion, an increase in cash inflows of $1.60 billion, compared to the same period in 2015. The increase in cash inflows was primarily due to the proceeds of $1.5 billion from the issuance of the 2026 Notes in the third quarter of 2016, the partial redemption of the 2019 Senior Secured Notes of $110.0 million and related premium of $3.3 million in the second quarter of 2015, a decrease of $7.7 million in capital lease obligation payments relating to the expiration of the capital lease for the AMC-16 satellite, effective February 2015, partially offset by payments of debt issuance costs of $6.3 million, a decrease of $3.8 million in excess tax benefits recognized on the exercise of stock options and a decrease of $3.7 million in net proceeds from Class A common stock options exercised and stock issued under our stock incentive plans and employee stock purchase plan.

Obligations and Future Capital Requirements

Contractual Obligations

As of September 30, 2016, our satellite-related obligations were approximately $786.0 million. Our satellite-related obligations primarily include payments pursuant to agreements for the construction of the EchoStar XIX, EchoStar XXI, EchoStar XXIII, and EchoStar 105/SES-11 satellites; payments pursuant to launch services contracts and regulatory authorizations; executory costs for our capital lease satellites; costs under satellite service agreements; and in-orbit incentives relating to certain satellites, as well as commitments for long-term satellite operating leases and satellite service arrangements.

Off-Balance Sheet Arrangements

Other than the transactions described below, we generally do not engage in off-balance sheet financing activities or use derivative financial instruments for hedge accounting or speculative purposes.

As of September 30, 2016, we had $31.8 million of letters of credit and insurance bonds. Of this amount, $12.9 million was secured by restricted cash, $1.5 million was related to insurance bonds, and $17.4 million was issued under credit arrangements available to our foreign subsidiaries. Certain letters of credit are secured by assets of our foreign subsidiaries.

As of September 30, 2016, we had foreign currency forward contracts with a notional value of $0.6 million in place to partially mitigate foreign currency exchange risk. From time to time, we may enter into foreign currency forward contracts, or take other measures, to mitigate risks associated with foreign currency denominated assets, liabilities, commitments and anticipated foreign currency transactions.

Satellite Insurance

We historically have not carried in-orbit insurance on our satellites because we assessed that the cost of insurance was uneconomical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. Pursuant to the terms of the agreements governing certain portions of our indebtedness, we are required, subject to certain limitations on coverage, to maintain in-orbit insurance for our SPACEWAY 3, EchoStar XVI, and EchoStar XVII satellites. Based on economic analysis of the current insurance market we have elected to obtain, subject to certain limitations on coverage, launch and in-orbit insurance for our EchoStar XIX and EchoStar XXIII satellites and our interest in the EchoStar 105/SES-11 satellite. All other satellites, either in orbit or under construction, are not covered by launch or in-orbit insurance. We will continue to assess circumstances going forward and make insurance decisions on a case by case basis.

Future Capital Requirements

We primarily rely on our existing cash and marketable investment securities balances, as well as cash flow generated through our operations to fund our business. Since we currently depend on DISH Network for a substantial portion of our revenue, our cash flow from operations depends heavily on DISH Network's needs for equipment and services. To the extent that DISH Network's gross new subscriber activations decrease or DISH Network experiences a net loss of subscribers or regulations are adopted that negatively impact our ability to sell set-top boxes, sales of our digital set-top boxes and related components as well as broadband services provided to DISH Network may continue to decline, which in turn could have a material adverse effect on our financial position and results of operations. There can be no assurance that we will have positive cash flows from operations. Furthermore, if we experience negative cash flows, our existing cash and marketable investment securities balances may be reduced.

We have a significant amount of outstanding indebtedness. As of September 30, 2016, our total indebtedness was $3.67 billion, of which $311.3 million related to capital lease obligations. Our liquidity requirements will be significant, primarily due to our debt service requirements. In addition, our future capital expenditures are likely to increase if we make acquisitions or additional investments in infrastructure or joint ventures necessary to support and expand our business, or if we decide to purchase one or more additional satellites. Other aspects of our business operations may also require additional capital. We periodically evaluate various strategic initiatives, the pursuit of which could also require us to invest or raise significant additional capital, which may not be available on acceptable terms or at all.

We anticipate that our existing cash and marketable investment securities are sufficient to fund the currently anticipated operations of our business through the next twelve months.

Satellites

As our satellite fleet ages, we will be required to evaluate replacement alternatives such as acquiring, leasing or constructing additional satellites, with or without customer commitments for capacity. We may also construct or lease additional satellites in the future to provide satellite services at additional orbital locations or to improve the quality of our satellite services.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

Stock Repurchases

Pursuant to a stock repurchase program approved by our board of directors, we are authorized to repurchase up to $500.0 million of our outstanding shares of Class A common stock through December 31, 2017. As of September 30, 2016, we have not repurchased any common stock under this program.

Seasonality

For our Hughes segment, service revenue is generally not impacted by seasonal fluctuations other than those associated with fluctuations related to sales and promotional activities. However, like many communications infrastructure equipment vendors, a higher amount of our hardware revenue occurs in the second half of the year due to our customers' annual procurement and budget cycles. Large enterprises and operators often allocate their capital expenditure budgets at the beginning of their fiscal year (which often coincides with the calendar year). The typical sales cycle for large complex system procurements is six to 12 months, which often results in the customer expenditure occurring towards the end of the year. Customers often seek to expend the budgeted funds prior to the end of the year and the next budget cycle.

For our EchoStar Technologies segment, we are affected by seasonality to the extent it impacts our customers as a result of their sales and promotion activities, which can vary from year to year. Although the seasonal impacts have not been significant, historically, the first half of the year generally produces fewer new subscribers for the pay-TV industry than the second half of the year. However, we cannot provide assurance that this trend will continue in the future.

Our ESS segment is not generally affected by seasonal impacts.

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 or contractual terms.

EXPLANATION OF KEY METRICS AND OTHER ITEMS

Services and other revenue - DISH Network. "Services and other revenue - DISH Network" primarily includes revenue associated with satellite and transponder services, satellite uplinking/downlinking, signal processing, conditional access management, telemetry, tracking and control, development of web-based applications for set-top boxes, professional services, facilities rental revenue and other services provided to DISH Network. "Services and other revenue - DISH Network" also includes subscriber wholesale service fees for the Hughes service sold to dishNET.

Services and other revenue - other. "Services and other revenue - other" primarily includes the sales of enterprise and consumer broadband services, as well as maintenance and other contracted services. "Services and other revenue - other" also includes revenue associated with satellite and transponder services, satellite uplinking/downlinking and other services provided to customers other than DISH Network.

Equipment revenue - DISH Network. "Equipment revenue - DISH Network" primarily includes sales of digital set-top boxes and related components, including Slingbox products and related hardware products, and sales of satellite broadband equipment and related equipment, primarily related to the Hughes service, to DISH Network.

Equipment revenue - other. "Equipment revenue - other" primarily includes sales of digital set-top boxes and related components to Bell TV, Dish Mexico and other domestic and international customers, including sales of Slingbox products and related hardware products, and sales of broadband equipment and networks to customers in our enterprise and consumer markets.

Cost of sales - services and other. "Cost of sales - services and other" primarily includes the cost of broadband services provided to our enterprise and consumer customers, and to DISH Network, as well as the cost of providing maintenance and other contracted services. "Cost of sales - services and other" also includes the costs associated with satellite and transponder services, satellite uplinking/downlinking, signal processing, conditional access management, telemetry, tracking and control, product support and development of applications for set-top boxes, professional services, facilities rental costs, and other services provided to our customers, including DISH Network.

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Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued

Cost of sales - equipment. "Cost of sales - equipment" principally includes costs associated with digital set-top boxes and related components sold to DISH Network, Bell TV, Dish Mexico and other domestic and international customers, including costs associated with Slingbox products and related hardware products. "Cost of sales - equipment" also includes the cost of broadband equipment and networks sold to customers in our enterprise and consumer markets, and to DISH Network.

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

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

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

Interest expense, net of amounts capitalized. "Interest expense, net of amounts capitalized" primarily includes interest expense associated with our debt and capital lease obligations (net of capitalized interest), and amortization of debt issuance costs.

Loss from partial redemption of debt. "Loss from partial redemption of debt" primarily includes the loss from the partial redemption of the 2019 Senior Secured Notes representing the redemption premium that the Company paid to the holders of its 2019 Senior Secured Notes and the write-off of related unamortized debt issuance costs.

Gains (losses) and impairment on marketable investment securities, net. "Gains (losses) and impairment on marketable investment securities, net" primarily includes gains, net of any losses, on the sale or exchange of investments and other-than-temporary impairment on certain of our marketable investment securities.

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

Other, net. "Other, net" primarily includes foreign exchange gains and losses, dividends received from our marketable investment securities, and other non-operating income or expense items that are not appropriately classified elsewhere in our condensed consolidated statements of operations and comprehensive income (loss).

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

Subscribers. "Subscribers" include customers that subscribe to our Hughes segment's HughesNet broadband services, through retail, wholesale and small/medium enterprise service channels.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risks Associated with Financial Instruments and Foreign Currency

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

Cash, Cash Equivalents and Current Marketable Investment Securities

As of September 30, 2016, our cash, cash equivalents and current marketable investment securities had a fair value of $3.02 billion. Of this amount, a total of $2.96 billion was invested in: (a) cash; (b) commercial paper and corporate notes with an overall average maturity of less than one year and rated in one of the four highest rating categories by at least two nationally recognized statistical rating organizations; (c) debt instruments of the U.S. government and its agencies; and/or (d) instruments with similar risk, duration and credit quality characteristics to the commercial paper and corporate obligations described above. The primary purpose of these investing activities has been to preserve principal until the cash is required to, among other things, fund operations, make strategic investments and expand the business. Consequently, the size of this portfolio fluctuates significantly as cash is received and used in our business. The value of this portfolio may be negatively impacted by credit losses; however, this risk is mitigated through diversification that limits our exposure to any one issuer.

Interest Rate Risk

A change in interest rates would not affect the fair value of our cash, or materially affect the fair value of our cash equivalents due to their maturities of less than 90 days. A change in interest rates would affect the fair value of our current marketable debt securities portfolio; however, we normally hold these investments to maturity. Based on our current non-strategic investment portfolio of $2.96 billion as of September 30, 2016, a hypothetical 10% change in average interest rates during 2016 would not have a material impact on the fair value of our cash, cash equivalents and debt securities portfolio due to the limited duration of our investments.

Our cash, cash equivalents and current marketable debt securities had an average annual rate of return for the nine months ended September 30, 2016 of 1.0%. 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 2016 would have resulted in a decrease of approximately $1.7 million in annual interest income.

Strategic Marketable Investment Securities

As of September 30, 2016, we held current strategic investments in the publicly traded common stock of several companies with a fair value of $59.7 million. These investments, which are held for strategic and financial purposes, are concentrated in a small number of companies, are highly speculative and have experienced and continue to experience volatility. 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. In general, our strategic marketable investment securities portfolio is not significantly impacted by interest rate fluctuations as it currently consists solely of equity securities, the value of which is more closely related to factors specific to the underlying business. A hypothetical 10% adverse change in the market price of our public strategic equity investments would result in a decrease of approximately $6.0 million in the fair value of these investments.

Restricted cash and marketable investment securities and investments in unconsolidated entities

Restricted cash and marketable investment securities

As of September 30, 2016, we had $13.7 million of restricted cash and marketable investment securities invested in: (a) cash; (b) debt instruments of the U.S. government and its agencies; (c) 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; (d) mutual funds; and (e) instruments with similar risk, duration and credit quality characteristics to the commercial paper described above. Based on our investment portfolio as of September 30, 2016, 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.

Investments in unconsolidated entities

As of September 30, 2016, we had $202.3 million of noncurrent equity instruments that we hold for strategic business purposes and account for under the cost or equity methods of accounting. The fair value of these instruments is not readily determinable. We periodically review these investments and estimate fair value when there are indications of impairment. A hypothetical adverse change equal to 10% of the carrying amount of these equity instruments would result in a decrease of approximately $20.2 million in the value of these investments.

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

Foreign Currency Exchange Risk

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

Our objective in managing our exposure to foreign currency changes is to reduce earnings and cash flow volatility associated with foreign exchange rate fluctuations. Accordingly, we may enter into foreign currency forward contracts, or take other measures, to mitigate risks associated with foreign currency denominated assets, liabilities, commitments and anticipated foreign currency transactions. As of September 30, 2016, we had $6.0 million of net foreign currency denominated receivables and payables outstanding, and foreign currency forward contracts with a notional value of $0.6 million in place to partially mitigate foreign currency exchange risk. The estimated fair values of the foreign exchange contracts were not material as of September 30, 2016. The impact of a hypothetical 10% adverse change in exchange rates on the carrying amount of the net assets and liabilities of our foreign subsidiaries would be an estimated loss to the cumulative translation adjustment of $36.2 million as of September 30, 2016.

Derivative Financial Instruments

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

Item 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this report. Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report such that the information required to be disclosed in our SEC reports is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms, and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

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) and Rule 15d-15(f) under the Securities Exchange Act of 1934, as amended) that occurred during the third quarter of 2016 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. We continue to review our internal control over financial reporting, and may from time to time make changes aimed at enhancing its effectiveness and to ensure that our systems evolve with our business.

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PART II — OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS

For a discussion of legal proceedings, see Part I, Item 1. Financial Statements — Note 14 “Commitments and Contingencies — Litigation” in this Form 10-Q.

Item 1A. RISK FACTORS

Item 1A, “Risk Factors,” of our Form 10-K for the year ended December 31, 2015 includes a detailed discussion of our risk factors. Except as provided below, for the nine months ended September 30, 2016, there were no material changes in our risk factors as previously disclosed.

GENERAL RISKS AFFECTING OUR BUSINESS

We currently derive a significant portion of our revenue from our primary customer, DISH Network. The loss of, or a significant reduction in, orders from, or a decrease in selling prices of digital set-top boxes, broadband equipment and services, provision of satellite services and digital broadcast services, and/or other products, components or services to DISH Network would significantly reduce our revenue and materially adversely impact our results of operations.

DISH Network accounted for 53.5%, 57.3% and 58.8% of our total revenue for the years ended December 31, 2015, 2014 and 2013, respectively. DISH Network is currently our primary customer of digital set-top boxes, digital broadcast operation services and our satellite services. These products and services are provided pursuant to contracts that expire on December 31, 2017. DISH Network is also a wholesale distributor of the Hughes satellite internet service, and in connection with such wholesale distribution, purchases certain broadband equipment from us to support the sale of the Hughes service. In addition, DISH Network has no obligations to continue to purchase our products and only certain obligations to continue to purchase certain of our services. Therefore, our relationship with DISH Network could be terminated or substantially curtailed with little or no advance notice. Any material reduction in or termination of our sales to DISH Network or reduction in the prices it pays for the products and services it purchases from us could have a material adverse effect on our business, results of operations, and financial position. Additionally, the FCC is considering adopting a regulatory regime whereby consumer electronics manufacturers, innovators, and other developers would be able to build devices or software solutions that may provide access to multichannel video programming with the use of user interfaces and without the use of any set-top box. As a result, consumers may then be able to access content provided by DISH Network using products produced by our competitors and without using our set-top boxes or other products, which may result in lower sales to DISH Network.

DISH Network is involved in several legal proceedings relating to products, components and services purchased from us. Adverse decisions against DISH Network in these proceedings could decrease the number of products, components and/or services we provide to DISH Network, which could have a material adverse effect on our business, results of operations, and financial position.

In addition, because a significant portion of our revenue is derived from DISH Network, our success also depends to a significant degree on the continued success of DISH Network in attracting new subscribers and marketing programming packages and other services and features to subscribers that will result in the purchase of new digital set-top boxes, and in particular, new digital set-top boxes at the high-end of our product range that incorporate high-definition, multiple tuners, and other advanced technology.

In addition, the timing of orders for digital set-top boxes from DISH Network could vary significantly depending on equipment promotions offered to its subscribers, changes in technology, and its use of remanufactured digital set-top boxes, which may cause our revenue to vary significantly quarter over quarter and could expose us to the risks of inventory shortages or excess inventory. These inventory risks are particularly acute during product end-of-life transitions in which a new generation of digital set-top boxes is being deployed and inventory of older generation digital set-top boxes is at a higher risk of obsolescence. This in turn could cause our operating results to fluctuate significantly.

There are a relatively small number of potential new customers for our digital set-top boxes and digital broadcast operations, and we expect this customer concentration to continue for the foreseeable future. If we lose DISH Network as a customer, it may be difficult for us to replace, in whole or in part, our historical revenue from DISH Network as we have had limited success in attracting such potential new customers in the past. Furthermore, because of the maturing and competitive nature of the digital set-top box business, the limited number of potential new customers, and the short-term nature of our purchase orders with DISH Network, we have experienced, and could in the future continue to experience, downward pricing pressure on our digital set-top boxes sold to DISH Network, which in turn would adversely affect our gross margins and profitability. Historically, many potential customers have perceived us as a competitor due to our affiliation with DISH Network. There can be no assurance that we will be successful in entering into any commercial relationships with potential new customers who are competitors of DISH Network (particularly if we continue to be perceived as affiliated with DISH Network as a result of common ownership and certain shared services). If we do not develop relationships with new customers, we may not be able to expand our customer base or maintain or increase our revenue.

If significant numbers of television viewers are unwilling to pay for pay-TV services that utilize digital set-top boxes, we may not be able to sustain our current revenue level.

We are substantially dependent upon the ability of our customers to promote the delivery of pay-TV services, including, among others, premium programming packages and services that utilize technology incorporated into our digital set-top boxes, such as HD technology and IPTV, to generate future revenue. Our customers face emerging competition from other providers of digital media and potential government action preventing them from using security systems in connection with set-top boxes. In particular, programming offered over the internet has become more prevalent as the speed and quality of broadband networks have improved. Additionally, the FCC is considering adopting a regulatory regime whereby consumer electronics manufacturers, innovators, and other developers would be able to build devices or software solutions that may provide access to multichannel video programming with the use of user interfaces and without the use of any set-top box. As a result, consumers may then be able to access content provided by DISH Network and other customers using products produced by our competitors and without using our set-top boxes or other products.

Our customers may be unsuccessful in promoting value-added services or may promote alternative packages, such as free programming packages, in lieu of promoting packages that utilize our high-end digital set-top box offerings. If our customers are unable to develop and effectively market compelling reasons for their subscribers to continue to purchase their pay-TV services that utilize our more advanced digital set-top boxes, it will be difficult for us to sustain our historical revenue. Furthermore, as technologies develop, other means of delivering information and entertainment to television viewers have evolved and contributed to, and will likely continue to evolve and contribute to, increasing consumer demand for online platforms that provide for the distribution and viewing of movies, television and other video programming that competes with our customers' pay-TV services. To the extent that these online platforms and other new technologies compete successfully against our customers for viewers, the ability of our existing customer base to attract and retain subscribers may be adversely affected. As a result, demand for our satellite television digital set-top boxes could decline, and we may not be able to sustain our current revenue levels.

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

Our Hughes segment has made substantial contractual commitments for satellite capacity based on our existing customer contracts and backlog. If our existing customer contracts were to be terminated prior to their respective expiration dates, we may be committed to maintaining excess satellite capacity for which we will have insufficient revenue to cover our costs, which would have a negative impact on our margins and results of operations. Alternatively, we may not have sufficient satellite capacity to meet demand. We have satellite capacity commitments, generally for two to five year terms, with third parties to cover different geographical areas or support different applications and features; therefore, we may not be able to quickly or easily adjust our capacity to changes in demand. We generally only purchase satellite capacity based on existing contracts and bookings. Therefore, capacity for certain types of coverage in the future may not be readily available to us, and we may not be able to satisfy certain needs of our customers, which could result in a loss of possible new business and could negatively impact the margins for those services. At present, until the launch and operation of additional satellites, there is limited availability of capacity on the frequencies we use in North America, including within our own fleet of satellites. Our ability to provide additional capacity for subscriber growth in our North American consumer market could also be adversely affected by regulations in the U.S. recently adopted by the FCC. The FCC has enabled the use of a portion of the frequency bands, including without limitation, the Ka-band, where we operate our broadband gateway earth stations, for 5G mobile terrestrial services. In addition, the FSS industry has seen consolidation in the past decade, and today, the main FSS providers in North America and a number of smaller regional providers own and operate the current satellites that are available for our capacity needs. The failure of any of these FSS providers to replace existing satellite assets at the end of their useful lives or a downturn in their industry as a whole could reduce or interrupt the satellite capacity available to us. If we are not able to renew our capacity leases at economically viable rates, or if capacity is not available due to problems experienced by these FSS providers, our business and results of operations could be adversely affected.

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

As of September 30, 2016, our total indebtedness was approximately $3.67 billion. Our ability to make payments on or to refinance our indebtedness and to fund our operations will depend on our ability to generate cash in the future, which is subject in part to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control. We may need to raise additional debt in order to fund ongoing operations or to capitalize on business opportunities. We may not be able to generate sufficient cash flow from operations and future borrowings may not be available in amounts sufficient to enable us to service our indebtedness or to fund our operations or other liquidity needs. If we are unable to generate sufficient cash, we may be forced to take actions such as revising or delaying our strategic plans, reducing or delaying capital expenditures, selling assets, restructuring or refinancing our debt or seeking additional equity capital. We may not be able to implement any of these actions on satisfactory terms, or at all. The indentures governing the 2019 Senior Secured Notes, the 2021 Senior Unsecured Notes and the 2026 Notes limit our ability to dispose of assets and use the proceeds from such dispositions. Therefore, we may not be able to consummate those dispositions on satisfactory terms, or at all, or to use those proceeds in a manner we may otherwise prefer.

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

Covenants in our indentures restrict our business in many ways.

The indentures governing the 2019 Senior Secured Notes, the 2021 Senior Unsecured Notes, and the 2026 Notes contain various covenants, subject to certain exceptions, that limit our ability and/or our restricted subsidiaries' ability to, among other things:

- incur additional debt;
- pay dividends or make distributions on our capital stock or repurchase HSS' capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on the ability of certain of HSS' subsidiaries to pay dividends, make distributions, make other payments, or transfer assets to HSS or its subsidiaries.

Failure to comply with these and certain other financial covenants, if not cured or waived, may result in an event of default under the indentures, which could have a material adverse effect on our business, financial condition, results of operations or prospects. If an event of default occurs and is continuing under the respective indenture, the trustee under that indenture or the requisite holders of the notes under that indenture may declare all such notes to be immediately due and payable and, in the case of the indentures governing any of our secured notes, could proceed against the collateral that secures the applicable secured notes. We and certain of our subsidiaries have pledged a significant portion of our assets as collateral to secure the 2019 Senior Secured Notes and the 2026 Senior Secured Notes. If we do not have enough cash to service our debt or fund other liquidity needs, we may be required to take actions such as requesting a waiver from the holders of the notes, reducing or delaying capital expenditures, selling assets, restructuring or refinancing all or part of the existing debt, or seeking additional equity capital. We cannot assure you that any of these remedies can be implemented on commercially reasonable terms or at all, which could result in the trustee declaring the notes to be immediately due and payable and/or foreclosing on the collateral.

We may be subject to risks relating to the referendum of the United Kingdom's membership of the European Union.

In June 2016, the United Kingdom (the "U.K.") held a referendum in which voters approved an exit from the EU, commonly referred to as the "Brexit." As a result of the referendum, it is expected that the U.K. government will begin negotiating the terms of the U.K.'s future relationship with the EU. Although it is unknown what those terms will be, it is possible that there will be greater restrictions on imports and exports between the U.K. and EU countries. Additionally, with the U.K. no longer being a part of the EU, we anticipate that there may be certain regulatory changes that may impact the regulatory regime under which we operate in both the U.K. and the EU. These and other changes, implications and consequences of the Brexit may adversely affect our business and results of operations.

RISKS RELATED TO OUR SATELLITES

Our satellites under construction are subject to risks related to construction and launch that could limit our ability to utilize these satellites.

Satellite construction and launch are subject to significant risks, including delays, anomalies, 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 past. The risks of launch delay, launch anomalies and launch failure are usually greater when the launch vehicle does not have a track record of previous successful flights. Launch anomalies and failures can result in significant delays in the deployment of satellites because of the need both to construct replacement satellites, which can take more than three years, and to obtain other launch opportunities. Such significant delays could materially and adversely affect our business, expenses and results of operations, our ability to meet regulatory or contractual required milestones, the availability and our use of other or replacement satellite resources and our ability to provide services to customers as capacity becomes full on existing satellites. In addition, significant delays in a satellite program could give customers who have purchased or reserved capacity on that satellite a right to terminate their service contracts relating to the satellite. We may not be able to accommodate affected customers on other satellites until a replacement satellite is available. A customer's termination of its service contracts with us as a result of a launch delay or failure would reduce our contracted backlog and our ability to generate revenue. One of our launch services providers is a Russian Federation state-owned company. Recent ongoing political events, including the imposition of sanctions, have created uncertainty as to the stability of U.S. and Russian Federation relations. This could add to risks relative to scheduling uncertainties and timing. Historically, we have not always carried launch insurance for the launch of our satellites. If a launch delay, anomaly or failure were to occur, it could result in the revocation of the applicable license to operate the satellite, undermine our ability to implement our business strategy or develop or pursue existing or future business opportunities with applicable licenses and otherwise have a material adverse effect on our business, expenses, assets, revenue, results of operations and ability to fund future satellite procurement and launch opportunities. In addition, the occurrence of launch anomalies and failures, whether on our satellites or those of others, may significantly reduce our ability to place launch insurance for our satellites or make launch insurance uneconomical.

RISKS RELATED TO THE REGULATION OF OUR BUSINESS

Our business is subject to risks of adverse government regulation.

Our business is subject to varying degrees of regulation in the U.S. by the FCC, and other federal, state and local entities, and in foreign countries by similar entities and internationally by the International Telecommunications Union. These regulations are subject to the administrative and political process and do change, for political and other reasons, from time to time. For example, the FCC recently adopted an order in its "Spectrum Frontiers" proceeding under which a portion of the Ka-band, in which we operate our broadband gateway earth stations, has been enabled for 5G mobile terrestrial services. Other countries in which we currently, or may in the future, operate are also considering regulations that could limit access to the Ka band. Additionally, the FCC is considering adopting a regulatory regime whereby consumer electronics manufacturers, innovators, and other developers would be able to build devices or software solutions that may provide access to multichannel video programming with the use of user interfaces and without the use of any set-top box. If adopted, these regulations could have a material adverse effect on our business, results of operations, and financial position. Moreover, a substantial number of foreign countries in which we have, or may in the future make, an investment, regulate, in varying degrees, the ownership of satellites and other telecommunication facilities/networks and foreign investment in telecommunications companies. Violations of laws or regulations may result in various sanctions including fines, loss of authorizations and the denial of applications for new authorizations or for the renewal of existing authorizations. Further material changes in law and regulatory requirements may also occur, and there can be no assurance that our business and the business of our subsidiaries and affiliates will not be adversely affected by future legislation, new regulation or deregulation. The failure to obtain or comply with the authorizations and regulations governing our operations could have a material adverse effect on our ability to generate revenue and our overall competitive position and could result in our suffering serious harm to our reputation.

OTHER RISKS

Our articles of incorporation designate the Eighth Judicial District Court of Clark County of the State of Nevada as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or agents.

Our articles of incorporation provide that, unless we consent in writing to an alternative forum, the Eighth Judicial District Court of Clark County of the State of Nevada will be the sole and exclusive forum for any and all actions, suits or proceedings, whether civil, administrative or investigative or that asserts any claim or counterclaim brought in our name or on our behalf, asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, employees or agents to us or our stockholders, arising or asserting a claim arising pursuant to any provision of the Nevada Restated Statutes Chapters 78 or 92A, our articles of incorporation or our bylaws, interpreting, applying, enforcing or determining the validity of our articles of incorporation or bylaws or asserting a claim that is governed by the internal affairs doctrine. Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our articles of incorporation. This choice of forum provision may limit our stockholders' ability to bring certain claims, including claims against our directors, officers or employees, in a judicial forum that the stockholder finds favorable and therefore the choice of forum provision may discourage lawsuits with respect to such claims. Stockholders who do bring a claim in the Eighth Judicial District Court of Clark County could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Nevada. The Eighth Judicial District Court of Clark County may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments or results may be more favorable to us than to our stockholders. Alternatively, if a court were to find this provision of our articles of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could have a material adverse effect on our business, financial condition or results of operations.

Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Issuer Purchases of Equity Securities

There were no repurchases of our Class A common stock for the nine months ended September 30, 2016.

Item 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable

Item 4. MINE SAFETY DISCLOSURES

Not applicable

Item 5. OTHER INFORMATION

On November 4, 2016, we amended the 2012 Receiver Agreement between EchoSphere L.L.C., a subsidiary of DISH Network, and our subsidiary EchoStar Technologies L.L.C. to extend its term for one year through December 31, 2017. All other terms of the 2012 Receiver Agreement remain unchanged. The amendment was approved by the

Company’s board of directors, the Company’s Audit Committee and the directors of EchoStar who are not also directors or officers of DISH Network or its subsidiaries.

On November 4, 2016, we amended the 2012 Broadcast Agreement between DISH Network L.L.C., a subsidiary of DISH Network, and our subsidiary EchoStar Broadcasting Corporation to extend its term for one year through December 31, 2017. All other terms of the 2012 Broadcast Agreement remain unchanged. The amendment was approved by the Company’s board of directors, the Company’s Audit Committee and the directors of EchoStar who are not also directors or officers of DISH Network or its subsidiaries.

Our Board of Directors previously authorized us to repurchase up to $500.0 million of our Class A common stock through December 31, 2016. On November 1, 2016, our Board of Directors extended this authorization to repurchase up to $500.0 million of outstanding shares of our Class A common stock through open market repurchases including, without limitation, one or more trading plans in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, through and including December 31, 2017.

Item 6. EXHIBITS

Exhibit No.	Description
31.1(H)	Section 302 Certification of Chief Executive Officer.
31.2(H)	Section 302 Certification of Chief Financial Officer.
32.1(I)	Section 906 Certifications of Chief Executive Officer and Chief Financial Officer.
99.1(H)	Unaudited Condensed Attributed Financial Information and Notes for Hughes Retail Group.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.
101.DEF	XBRL Taxonomy Extension Definition Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.

(H) Filed herewith.
(I) Furnished herewith
* Incorporated by reference.
** Constitutes a management contract or compensatory plan or arrangement.

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SIGNATURES

Pursuant to the requirements 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.

ECHOSTAR CORPORATION

Date: November 8, 2016	By:	/s/ Michael T. Dugan Michael T. Dugan Chief Executive Officer, President and Director (Principal Executive Officer)
Date: November 8, 2016	By:	/s/ David J. Rayner David J. Rayner Executive Vice President, Chief Financial Officer, Chief Operating Officer and Treasurer (Principal Financial and Accounting Officer)