SIRIUS XM RADIO INC.

(Exact name of company as specified in its charter)

ANNUAL REPORT

For the Fiscal Year Ended December 31, 2018

Explanatory Note

Sirius XM Radio Inc. ("Sirius XM") is furnishing this Annual Report for the fiscal year ended December 31, 2018 (the "Annual Report") in order to comply with the reporting obligations in the indentures governing its 3.875% Senior Notes due 2022, 4.625% Senior Notes due 2023, 6.00% Senior Notes due 2024, 5.375% Senior Notes due 2025, 5.375% Senior Notes due 2026 and 5.00% Senior Notes due 2027 (collectively, the "Notes").

Before making any investment decisions in Sirius XM or Sirius XM Holdings Inc. ("Holdings"), investors should read the following consolidated financial statements and Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") of Sirius XM in conjunction with Holdings' Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and Holdings' other reports available through the Securities and Exchange Commission website at www.sec.gov and our website at www.siriusxm.com, and with Sirius XM's other reports available through our website. Holdings' Annual Report on Form 10-K for the fiscal year ended December 31, 2018 is hereby incorporated by reference except for Section 9A and Exhibits 31.1, 31.2, 32.1 and 32.2 contained therein. Sirius XM is a wholly-owned subsidiary of Holdings and Holdings has no operations independent of Sirius XM. Refer to Note 1 to the consolidated financial statements included within this Annual Report for an explanation of differences between Sirius XM and Holdings' consolidated financial statements.

The terms "Sirius XM," "we," "us," "our," and the "Company," as used herein and unless otherwise stated or indicated by context, refer to Sirius XM Radio Inc. and its subsidiaries.

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SELECTED FINANCIAL DATA

The operating and balance sheet data included in the following selected financial data has been derived from our audited consolidated financial statements. This selected financial data should be read in conjunction with the audited Consolidated Financial Statements and related notes thereto, and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in this Annual Report.

	As of and for the Years Ended December 31,				
(in thousands, except per share data)	2018	2017	2016 (1)	2015	2014
Statements of Comprehensive Income Data (2):					
Total revenue	$ 5,770,692	$ 5,425,129	$ 5,017,220	$ 4,570,058	$ 4,181,095
Net income attributable to Sirius XM Radio Inc.'s sole stockholder	$ 1,175,893	$ 647,908	$ 745,933	$ 509,724	$ 544,795
Balance Sheet Data:					
Cash and cash equivalents	$ 54,431	$ 69,022	$ 213,939	$ 111,838	$ 147,724
Restricted investments	$ 10,939	$ 10,352	$ 9,889	$ 9,889	$ 5,922
Total assets (3)	$16,213,538	$14,889,301	$13,180,407	$11,568,824	$ 9,905,275
Long-term debt, net of current portion (3)	$ 6,884,536	$ 6,741,243	$ 5,842,764	$ 5,443,614	$ 4,487,419
Stockholder equity	$ 6,223,881	$ 5,062,317	$ 4,395,863	$ 3,355,671	$ 2,846,047

(1) For the year ended December 31, 2016, we recorded $293,896 as an increase to our Deferred tax assets and decrease to our Accumulated deficit as a result of the adoption of Accounting Standards Update 2016-09, *Compensation-Stock Compensation (Topic 718)*.

(2) Net income (loss) per share for Sirius XM is not presented since Sirius XM is a wholly-owned subsidiary of Holdings.

(3) The 2014 - 2015 balances reflect the adoption of Accounting Standards Update 2015-03, *Interest- Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs,* and Accounting Standards Update 2015-15, *Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Agreements.* As a result of our adoption of these ASUs, Total Assets was reduced by $7,155 and $6,444 for the years ended December 31, 2015 and 2014, respectively, and Long-term debt, net of current portion, was reduced by $7,155 and $6,444 for the years ended December 31, 2015 and 2014, respectively.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

All amounts referenced in this discussion and analysis are in thousands, except per subscriber and per installation amounts, unless otherwise stated.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements and related notes included elsewhere in this Annual Report and with Holdings' Annual Report on Form 10-K for the year ended December 31, 2018.

Special Note Regarding Forward-Looking Statements

We have made various statements in this Annual Report that may constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements may also be made in our other reports furnished to holders of the Notes, in our press releases and in other documents. In addition, from time to time, we, through our management, may make oral forward-looking statements. For example, these forward-looking statements may include, among other things, our statements about our outlook and our future results of operations and financial condition; share repurchase plans; the impact of economic and market conditions; and the impact of our acquisition of Pandora. The words "will likely result," "are expected to," "will continue," "is anticipated," "estimated," "believe," "intend," "plan," "may," "should," "could," "would," "likely," "projection," "outlook" and similar expressions are intended to identify forward-looking statements. Forward-looking statements are subject to risks and uncertainties, including those identified above, which could cause actual results to differ materially from such statements. We caution you that the risk factors described above are not exclusive. There may also be other risks that we are unable to predict at this time that may cause actual results to differ materially from those in forward-looking statements. New factors emerge from time to time, and it is not possible for us to predict which will arise or to assess with any precision the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We believe these factors include but are not limited to those described under "Part I - Item 1A. Risk Factors" in Holdings' Annual Report on Form 10-K for the fiscal year ended December 31, 2018. These factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements that are included Holdings' Annual Report on Form 10-K and in this Annual Report. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date on which they are made. We undertake no obligation to update publicly or revise any forward-looking statements, except as required by law. New factors emerge from time to time, and it is not possible for us to predict which will arise or to assess with any precision the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. The forward-looking statements included below do not reflect the impact of the pending acquisition of Pandora.

Executive Summary

We transmit music, sports, entertainment, comedy, talk, news, traffic and weather channels, as well as infotainment services, in the United States on a subscription fee basis through our two proprietary satellite radio systems, and a larger set of music and other channels through our streaming service. Our streaming service is available online and through applications for mobile devices, home devices and other consumer electronic equipment. We also provide connected vehicle services. Our connected vehicle services are designed to enhance the safety, security and driving experience for vehicle operators while providing marketing and operational benefits to automakers and their dealers.

We have agreements with every major automaker ("OEMs") to offer satellite radio in their vehicles, through which we acquire the majority of our subscribers. We also acquire subscribers through marketing to owners and lessees of previously owned vehicles that include factory-installed satellite radios that are not currently subscribing to our services. Our satellite radios are primarily distributed through automakers, retailers, and our website. Satellite radio services are also offered to customers of certain rental car companies.

As of December 31, 2018, we had approximately 34.0 million subscribers of which approximately 28.9 million were self-pay subscribers and approximately 5.1 million were paid promotional subscribers. Our subscriber totals include subscribers under our regular pricing plans; discounted pricing plans; subscribers that have prepaid, including payments either made or due from automakers for subscriptions included in the sale or lease price of a vehicle; subscribers to our streaming services who do not also have satellite radio subscriptions; and certain subscribers to our weather, traffic, and data services who do not also have satellite radio subscriptions. Subscribers and subscription related revenues and expenses associated with the Sirius XM Canada service, which had approximately 2.6 million subscribers as of December 31, 2018, and our connected vehicle services are not included in our subscriber count or subscriber-based operating metrics.

Our primary source of revenue is subscription fees, with most of our customers subscribing to monthly, quarterly, semi-annual or annual plans. We offer discounts for prepaid subscription plans, as well as a multiple subscription discount. We also derive revenue from certain fees, the sale of advertising on select non-music channels, the direct sale of satellite radios and accessories, and other ancillary services, such as our weather, traffic and data services. We provide traffic services to approximately 8.6 million vehicles.

In many cases, a subscription to our radio service is included with the purchase or lease of new or previously owned vehicles. The length of these subscriptions varies but is typically three to twelve months. We receive payments for these subscriptions from certain automakers. We also reimburse various automakers for certain costs associated with satellite radios installed in new vehicles and pay revenue share to various automakers.

As of December 31, 2018, Liberty Media beneficially owned, directly and indirectly, approximately 73% of the outstanding shares of Holdings' common stock. As a result, Holdings is a “controlled company” for the purposes of the NASDAQ corporate governance requirements.

We hold an equity method investment in Sirius XM Canada Holdings Inc. (“Sirius XM Canada”), which offers satellite radio services in Canada. As of December 31, 2018, we owned an approximate 70% equity interest and 33% voting interest in Sirius XM Canada.

We hold an investment in Pandora Media, Inc. (“Pandora”), which operates an internet-based music discovery platform, offering a personalized experience for listeners. As of December 31, 2018, our interest in Pandora represented an approximately 18% interest in Pandora's outstanding common stock, and an approximately 15% interest on an as-converted basis.

Recent Developments; Agreement to Acquire Pandora Media, Inc.

On September 23, 2018, Holdings entered into an Agreement and Plan of Merger and Reorganization (the “Merger Agreement”), by and among Holdings, Pandora Billboard Holding Company, Inc., a wholly-owned subsidiary of Pandora, Billboard Acquisition Sub, Inc., a wholly-owned subsidiary of Billboard Holding Company, Inc., Sirius XM and White Oaks Acquisition Corp., pursuant to which, subject to the terms and conditions of the Merger Agreement, Holdings agreed to acquire Pandora (such transaction, the “Merger”). Pursuant to the Merger, each outstanding share of Pandora common stock, par value $0.0001 per share (“Pandora Common Stock”), will be converted into the right to receive 1.44 shares (the “Exchange Ratio”) of Holdings common stock, par value $0.001 per share (“Holdings Common Stock”). In connection with the Merger, the Series A Preferred Stock will be canceled for no consideration.

Further, pursuant to the Merger:

- each option granted by Pandora under its stock incentive plans to purchase shares of Pandora Common Stock, whether vested or unvested will be assumed and converted into an option to purchase shares of Holdings Common Stock, with appropriate adjustments (based on the Exchange Ratio) to the exercise price and number of shares of Holdings Common Stock subject to such option, and will have the same vesting schedule and exercise conditions as in effect as of immediately prior to the closing of the Merger;

- each unvested restricted stock unit granted by Pandora under its stock incentive plans will be assumed and converted into an unvested restricted stock unit of Holdings, with appropriate adjustments (based on the Exchange Ratio) to the number of shares of Holdings Common Stock to be received, and will have the same vesting schedule and settlement date as in effect as of immediately prior to the closing of the Merger; and

- each unvested performance award granted by Pandora under its stock incentive plans shall be canceled and forfeited if the per share value of merger consideration at the closing of the transactions as determined pursuant to the Merger Agreement is less than $20.00, and otherwise each such award will be assumed and converted into a time vesting award to receive a number of shares of Holdings Common Stock based on the Exchange Ratio, and will have the same vesting schedule as in effect as of immediately prior to the closing of the Merger.

The Merger Agreement contains customary representations and warranties from both Holdings and Pandora, and each party has agreed to customary covenants, including covenants relating to the conduct of Holdings’ and Pandora’s businesses during the period between the execution of the Merger Agreement and the closing of the Merger. In the case of Pandora, such obligations include its agreement to call a meeting of its stockholders to adopt the Merger Agreement, and, subject to certain exceptions, to recommend that its stockholders adopt the Merger Agreement.

The Pandora stockholders voted to adopt the Merger Agreement at a special stockholder meeting on January 29, 2019.

The completion of the Merger is subject to customary conditions, including, among others, the absence of any law or order that prohibits or makes illegal the Merger and subject to certain exceptions, the accuracy of the representations and warranties of each party and compliance by the parties with their respective covenants.

It is intended that the Merger qualifies as a "reorganization" within the meaning of Section 368(a) of the Internal Revenue Code of 1986 for Federal income tax purposes. However, if either Pandora or Holdings are unable to receive an opinion of counsel to that effect, the parties have agreed to restructure the Merger so that the Merger will be treated as a taxable stock sale.

Results of Operations

Set forth below are our results of operations for the year ended December 31, 2018 compared with the year ended December 31, 2017 and the year ended December 31, 2017 compared with the year ended December 31, 2016.

Our forward-looking statements below regarding our expectations for our revenues and expenses do not reflect the impact of Holdings' proposed acquisition of Pandora.

	For the Years Ended December 31,			2018 vs 2017 Change		2017 vs 2016 Change	
	2018	2017	2016	Amount	%	Amount	%
Revenue:							
Subscriber revenue	$4,593,803	$4,472,522	$4,196,852	$ 121,281	3 %	$ 275,670	7 %
Advertising revenue	187,569	160,347	138,231	27,222	17 %	22,116	16 %
Equipment revenue	154,878	131,586	118,947	23,292	18 %	12,639	11 %
Music royalty fee and other revenue	834,442	660,674	563,190	173,768	26 %	97,484	17 %
Total revenue	5,770,692	5,425,129	5,017,220	345,563	6 %	407,909	8 %
Operating expenses:							
Cost of services:							
Revenue share and royalties	1,393,842	1,210,323	1,108,515	183,519	15 %	101,808	9 %
Programming and content	405,686	388,033	353,779	17,653	5 %	34,254	10 %
Customer service and billing	382,537	385,431	387,131	(2,894)	(1)%	(1,700)	— %
Satellite and transmission	95,773	82,747	103,020	13,026	16 %	(20,273)	(20)%
Cost of equipment	30,768	35,448	40,882	(4,680)	(13)%	(5,434)	(13)%
Subscriber acquisition costs	470,336	499,492	512,809	(29,156)	(6)%	(13,317)	(3)%
Sales and marketing	484,044	437,739	386,724	46,305	11 %	51,015	13 %
Engineering, design and development	123,219	112,427	82,146	10,792	10 %	30,281	37 %
General and administrative	356,819	334,023	341,106	22,796	7 %	(7,083)	(2)%
Depreciation and amortization	300,720	298,602	268,979	2,118	1 %	29,623	11 %
Total operating expenses	4,043,744	3,784,265	3,585,091	259,479	7 %	199,174	6 %
Income from operations	1,726,948	1,640,864	1,432,129	86,084	5 %	208,735	15 %
Other income (expense):							
Interest expense	(350,073)	(345,820)	(331,225)	(4,253)	(1)%	(14,595)	(4)%
Loss on extinguishment of debt	—	(43,679)	(24,229)	43,679	100 %	(19,450)	(80)%
Other income (expense)	43,699	12,844	14,985	30,855	240 %	(2,141)	(14)%
Total other income (expense)	(306,374)	(376,655)	(340,469)	70,281	19 %	(36,186)	(11)%
Income before income taxes	1,420,574	1,264,209	1,091,660	156,365	12 %	172,549	16 %
Income tax expense	(244,681)	(616,301)	(345,727)	371,620	60 %	(270,574)	(78)%
Net income attributable to Sirius XM Radio Inc.'s sole stockholder	$1,175,893	$ 647,908	$ 745,933	$ 527,985	81 %	$ (98,025)	(13)%

Total Revenue

Subscriber Revenue includes subscription, activation and other fees.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, subscriber revenue was $4,593,803 and $4,472,522, respectively, an increase of 3%, or $121,281. The increase was primarily attributable to a 5% increase in the daily weighted average number of subscribers. Subscriber revenue was negatively impacted by $94,767 for the year ended December 31, 2018 due to the adoption of Accounting Standards Update ("ASU") 2014-09, effective January 1, 2018.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, subscriber revenue was $4,472,522 and $4,196,852, respectively, an increase of 7%, or $275,670. The increase was primarily attributable to a 4% increase in the daily weighted average number of subscribers as well as a 3% increase in average monthly revenue per subscriber resulting from certain rate increases.

We expect subscriber revenues to increase based on the growth of our subscriber base, increases in certain of our subscription rates and the sale of additional services to subscribers.

Advertising Revenue includes the sale of advertising on certain non-music channels.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, advertising revenue was $187,569 and $160,347, respectively, an increase of 17%, or $27,222. The increase was primarily due to a greater number of advertising spots sold and transmitted as well as increases in rates charged per spot.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, advertising revenue was $160,347 and $138,231, respectively, an increase of 16%, or $22,116. The increase was primarily due to a greater number of advertising spots sold and transmitted as well as increases in rates charged per spot.

We expect our advertising revenue to continue to grow as more advertisers are attracted to our national platform and our growing subscriber base, and as we expand our inventory by launching additional non-music channels.

Equipment Revenue includes revenue and royalties from the sale of satellite radios, components and accessories.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, equipment revenue was $154,878 and $131,586, respectively, an increase of 18%, or $23,292. The increase was driven by an increase in royalty revenue due to our transition to a new generation of chipsets.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, equipment revenue was $131,586 and $118,947, respectively, an increase of 11%, or $12,639. The increase was driven by royalty revenue on certain satellite radio components starting in the second quarter of 2016 due to our transition to a new generation of chipsets and revenue from the sales of connected vehicle devices since the acquisition of Automatic, partially offset by lower revenue generated through satellite radio sales to distributors and consumers and lower OEM production.

We expect equipment revenue to increase as royalty revenues associated with certain new chipsets increases.

Music Royalty Fee and Other Revenue includes amounts earned from subscribers for the U.S. Music Royalty Fee, revenue from our connected vehicle services, our Canadian affiliate and ancillary revenues.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, music royalty fee and other revenue was $834,442 and $660,674, respectively, an increase of 26%, or $173,768. The increase was primarily driven by higher U.S. Music Royalty Fee revenue due to a higher rate and an increase in the number of subscribers, higher revenue generated from our connected vehicle services and from Sirius XM Canada.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, music royalty fee and other revenue was $660,674 and $563,190, respectively, an increase of 17%, or $97,484. The increase was primarily driven by higher revenue from Sirius XM Canada due to the new Services Agreement and Advisory Services Agreement entered into in the second quarter of 2017, additional revenues from the U.S. Music Royalty Fee due to an increase in the number of subscribers and subscribers paying at a higher rate and higher revenue generated from our connected vehicle services.

We expect music royalty fee and other revenue to increase due to an increase in U.S. Music Royalty Fees as current subscribers migrate to the new increased rate and as our subscriber base grows.

Operating Expenses

Revenue Share and Royalties include distribution and content provider revenue share, royalties for transmitting content and web streaming, and advertising revenue share.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, revenue share and royalties were $1,393,842 and $1,210,323, respectively, an increase of 15%, or $183,519, and increased as a percentage of total revenue. The increase was driven by an increase in the statutory royalty rate applicable to our use of post-1972 recordings, which increased from 11% in 2017 to 15.5% in 2018, and overall greater revenues subject to revenue share with the automakers. Included in the increase was a $69,144 charge related to the legal settlement that resolved outstanding claims, including ongoing audits, under our statutory license for sound recordings for the period January 1, 2007 through December 31, 2017. In 2017, we recorded $45,100 of expense related to music royalty legal settlements and related reserves. The increase was partially offset by approximately $88,122, for the year ended December 31, 2018, related to the adoption of the new revenue standard effective as of January 1, 2018.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, revenue share and royalties were $1,210,323 and $1,108,515, respectively, an increase of 9%, or $101,808, and increased as a percentage of total revenue. The increase was due to overall greater revenues subject to music royalties and revenue share to automakers and an increase in the statutory royalty rate applicable to our use of post-1972 recordings, which increased from 10.5% in 2016 to 11% in 2017. We recorded $45,100 and $45,900 of expense related to music royalty legal settlements and related reserves in 2017 and 2016, respectively.

We expect our revenue share and royalty costs to increase as our revenues grow.

Programming and Content includes costs to acquire, create, promote and produce content. We have entered into various agreements with third parties for music and non-music programming that require us to pay license fees and other amounts.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, programming and content expenses were $405,686 and $388,033, respectively, an increase of 5%, or $17,653, and decreased as a percentage of total revenue. The increase was driven primarily by personnel-related costs, and higher music licensing costs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, programming and content expenses were $388,033 and $353,779, respectively, an increase of 10%, or $34,254, and increased as a percentage of total revenue. The increase was primarily due to the addition of video content rights, payment for which started during the third quarter of 2016, as well as talent and personnel-related costs.

We expect our programming and content expenses to increase as we offer additional programming, and renew or replace expiring agreements.

Customer Service and Billing includes costs associated with the operation and management of internal and third party customer service centers, and our subscriber management systems as well as billing and collection costs, transaction fees and bad debt expense.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, customer service and billing expenses were $382,537 and $385,431, respectively, a decrease of less than 1%, or $2,894, and decreased as a percentage of total revenue. The decrease was primarily driven by lower call center costs due to lower agent rates, increased customer self-service resulting in lower contact rates and improved non-pay processes driving lower bad debt expense, partially offset by increased transaction fees from a larger subscriber base and personnel-related costs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, customer service and billing expenses were $385,431 and $387,131, respectively, a decrease of less than 1%, or $1,700, and decreased as a percentage of total revenue. The decrease was primarily due to a decline in call center agent rates and contact rates, partially offset by increased transaction fees based on a higher subscriber base.

We expect our customer service and billing expenses to increase as our subscriber base grows.

Satellite and Transmission consists of costs associated with the operation and maintenance of our terrestrial repeater networks; satellites; satellite telemetry, tracking and control systems; satellite uplink facilities; studios; and delivery of our streaming service and connected vehicle services.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, satellite and transmission expenses were $95,773 and $82,747, respectively, an increase of 16%, or $13,026, and increased as a percentage of total revenue. The increase was primarily driven by higher wireless costs associated with our connected vehicle services and higher streaming costs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, satellite and transmission expenses were $82,747 and $103,020, respectively, a decrease of 20%, or $20,273, and decreased as a percentage of total revenue. The decrease was driven by lower wireless costs associated with our connected vehicle services, and a reduction in terrestrial repeater costs as a result of the elimination of duplicative repeater sites; partially offset by increased streaming costs. Satellite and transmission costs in 2016 included a loss on disposal of certain obsolete satellite parts of $12,912.

We expect satellite and transmission expenses to grow as costs associated with our investment in streaming services increase.

Cost of Equipment includes costs from the sale of satellite radios, components and accessories and provisions for inventory allowance attributable to products purchased for resale in our direct to consumer distribution channels.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, cost of equipment was $30,768 and $35,448, respectively, a decrease of 13%, or $4,680, and decreased as a percentage of equipment revenue. The decrease was primarily due to lower direct satellite radio sales to consumers.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, cost of equipment was $35,448 and $40,882, respectively, a decrease of 13%, or $5,434, and decreased as a percentage of equipment revenue. The decrease was primarily due to lower direct satellite radio sales to distributors and consumers, partially offset by the incremental costs associated with the sale of connected vehicle devices since the acquisition of Automatic.

We expect cost of equipment to increase as device sales from our connected vehicle services increase.

Subscriber Acquisition Costs include hardware subsidies paid to radio manufacturers, distributors and automakers; subsidies paid for chipsets and certain other components used in manufacturing radios; device royalties for certain radios and chipsets; product warranty obligations; and freight. The majority of subscriber acquisition costs are incurred and expensed in advance of, or concurrent with, acquiring a subscriber. Subscriber acquisition costs do not include advertising costs, marketing, loyalty payments to distributors and dealers of satellite radios or revenue share payments to automakers and retailers of satellite radios.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, subscriber acquisition costs were $470,336 and $499,492, respectively, a decrease of 6%, or $29,156, and decreased as a percentage of total revenue. The decrease was driven by reductions to OEM hardware subsidy rates, lower subsidized costs related to the transition of chipsets, and a decrease in satellite radio installations.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, subscriber acquisition costs were $499,492 and $512,809, respectively, a decrease of 3%, or $13,317, and decreased as a percentage of total revenue. The decrease was driven by reductions to OEM hardware subsidy rates, lower subsidized costs related to the transition of chipsets, and a decrease in satellite radio installations.

We expect subscriber acquisition costs to increase as we increase OEM installations and increase OEM hardware subsidy rates. We intend to continue to offer subsidies and other incentives to induce OEMs to include our technology in their vehicles.

Sales and Marketing includes costs for marketing, advertising, media and production, including promotional events and sponsorships; cooperative marketing; and personnel. Marketing costs include expenses related to direct mail, outbound telemarketing and email communications.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, sales and marketing expenses were $484,044 and $437,739, respectively, an increase of 11%, or $46,305, and increased as a percentage of total revenue. The increase was primarily due to additional subscriber communications, retention programs and acquisition campaigns, as well as higher personnel-related costs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, sales and marketing expenses were $437,739 and $386,724, respectively, an increase of 13%, or $51,015, and increased as a percentage of total

revenue. The increase was primarily due to additional subscriber communications, retention programs and acquisition campaigns as well as higher personnel-related costs; partially offset by the timing of certain OEM marketing campaigns.

We anticipate that sales and marketing expenses will increase as we expand programs to retain our existing subscribers, win back former subscribers, and attract new subscribers.

Engineering, Design and Development consists primarily of compensation and related costs to develop chipsets and new products and services, including streaming and connected vehicle services, research and development for broadcast information systems and costs associated with the incorporation of our radios into new vehicles manufactured by automakers.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, engineering, design and development expenses were $123,219 and $112,427, respectively, an increase of 10%, or $10,792, and increased as a percentage of total revenue. The increase was driven by the continued development of our streaming product and connected vehicle services.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, engineering, design and development expenses were $112,427 and $82,146, respectively, an increase of 37%, or $30,281, and increased as a percentage of total revenue. The increase was driven by development of our connected vehicle services and additional costs associated with the development of our audio and video streaming products.

We expect engineering, design and development expenses to increase in future periods as we continue to develop our infrastructure, products and services.

General and Administrative primarily consists of compensation and related costs for personnel and facilities, and include costs related to our finance, legal, human resources and information technologies departments.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, general and administrative expenses were $356,819 and $334,023, respectively, an increase of 7%, or $22,796, and increased as a percentage of total revenue. The increase was primarily driven by higher personnel-related costs, information technology costs, a one-time charge for sales and use taxes, and expenses associated with the pending Pandora acquisition; partially offset by lower legal costs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, general and administrative expenses were $334,023 and $341,106, respectively, a decrease of 2%, or $7,083, and decreased as a percentage of total revenue. The decrease was primarily driven by lower legal costs, litigation reserves and consulting costs. The decrease was partially offset by higher personnel-related costs.

We expect our general and administrative expenses to increase to support the growth of our business.

Depreciation and Amortization represents the recognition in earnings of the acquisition cost of assets used in operations, including our satellite constellations, property, equipment and intangible assets, over their estimated service lives.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, depreciation and amortization expense was $300,720 and $298,602, respectively, an increase of 1%, or $2,118, and decreased as a percentage of total revenue. The depreciation increase was driven by additional assets placed in-service, partially offset by acceleration of amortization related to a shorter useful life of certain software during 2017.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, depreciation and amortization expense was $298,602 and $268,979, respectively, an increase of 11%, or $29,623, and increased as a percentage of total revenue. Depreciation increased as a result of the acceleration of amortization related to a shorter useful life of certain software as well as additional assets placed in-service.

Other Income (Expense)

Interest Expense includes interest on outstanding debt.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, interest expense was $350,073 and $345,820, respectively, an increase of 1%, or $4,253. The increase was primarily due to higher average debt outstanding, partially offset by an increase in capitalized interest associated with the construction of new satellites.

- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, interest expense was $345,820 and $331,225, respectively, an increase of 4%, or $14,595. The increase was primarily due to higher average debt during the year ended December 31, 2017 compared to the year ended December 31, 2016.

Loss on Extinguishment of Debt includes losses incurred as a result of the retirement of certain debt.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, loss on extinguishment of debt, was $0 and $43,679, respectively. During the year ended December 31, 2017, we recorded losses due to the redemption of our 4.25% Senior Notes due 2020, 5.75% Senior Notes due 2021, and 5.25% Senior Secured Notes due 2022.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, loss on extinguishment of debt, net, was $43,679 and $24,229, respectively. During the year ended December 31, 2017, we recorded losses on extinguishment of debt due to the redemption of our 4.25% Senior Notes due 2020, 5.75% Senior Notes due 2021, and 5.25% Senior Secured Notes due 2022. During the year ended December 31, 2016, a loss was recorded on the redemption of our then outstanding 5.875% Senior Notes due 2020.

Other Income primarily includes realized and unrealized gains and losses, interest income, and our share of the income or loss of Sirius XM Canada.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, other income was $43,699 and $12,844, respectively. Other income for the year ended December 31, 2018 was driven by unrealized gains of $42,617 from a fair value adjustment of our investment in Pandora, and interest earned on our loan to Sirius XM Canada of $10,302, partially offset by losses on other investments of $9,675. Other income for the year ended December 31, 2017, included interest earned on our loan to Sirius XM Canada, and our share of Sirius XM Canada's net income, partially offset by transaction costs associated with our investment in Pandora.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, other income was $12,844 and $14,985, respectively. Other income for the year ended December 31, 2017 included interest earned on our loan to Sirius XM Canada, and our share of Sirius XM Canada's net income, partially offset by transaction costs associated with our investment in Pandora. Other income for the year ended December 31, 2016 was primarily driven by our share of Sirius XM Canada’s net income and dividends received from Sirius XM Canada in excess of our investment.

Income Taxes

Income Tax Expense includes the change in our deferred tax assets, foreign withholding taxes and current federal and state tax expenses.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, income tax expense was $244,681 and $616,301, respectively, and our effective tax rate was 17.2% and 48.7%, respectively. On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cut and Jobs Act (the “Tax Act”). The Tax Act made broad and complex changes to the U.S. tax code, including, accelerated depreciation that will allow for full expensing of qualified property. The Tax Act also reduced the U.S. federal corporate income tax rate from 35% to 21%.

  The effective tax rate of 17.2% for the year ended December 31, 2018 was primarily impacted by the reduced federal tax rate to 21%, the recognition of excess tax benefits related to share based compensation and a benefit related to state and federal research and development credits. The effective tax rate of 48.7% for the year ended December 31, 2017 was negatively impacted by the revaluation of our net deferred tax assets, excluding after tax credits as of December 31, 2017 as a result of the reduction of the federal corporate income tax rate. This was offset by the recognition of excess tax benefits related to share based compensation and a benefit related to federal research and development credits, under the Protecting Americans from Tax Hikes Act of 2015. Based on this revaluation, we recorded an additional tax expense of $184,599 to reduce our net deferred tax asset balance for the year ended December 31, 2017.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, income tax expense was $616,301 and $345,727, respectively, and our effective tax rate was 48.7% and 31.7%, respectively. As a result of the reduction of the federal corporate income tax rate, we revalued our net deferred tax asset, excluding after tax credits, as of December 31, 2017. Based on this revaluation, we recorded a net tax expense of $184,599 to reduce our net deferred tax asset balance, which was recorded as additional income tax expense for the

year ended December 31, 2017. Our effective tax rate increased by 14.6% to 48.7% primarily as a result of the revaluation of our net deferred tax asset. For the years ended December 31, 2017 and 2016, we recorded a $21,700 and a $66,326 tax credit, respectively, under the Protecting Americans from Tax Hikes Act of 2015 related to research and development activities, which reduced our effective tax rate by 1.7% and 6.1%, respectively.

As a result of the Tax Act and our tax planning strategies, we estimate our effective tax rate beginning in 2019 will be approximately 24.6%.

Recent Accounting Pronouncements

- In May 2014, the Financial Accounting Standards Board ("FASB") issued *ASU 2014-09, Revenue - Revenue from Contracts with Customers.*
- In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*.
- In March 2016, the FASB issued ASU 2016-09, *Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*.
- In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash.*
- In February 2018, the FASB issued ASU 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.*
- In June 2018, the FASB issued ASU 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting.*
- In August 2018, the FASB issued ASU 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*.

For additional information regarding "Recent Accounting Pronouncements," refer to Note 3 to our consolidated financial statements of this Annual Report.

Key Financial and Operating Performance Metrics

In this section, we present certain financial performance measures some of which are not calculated and presented in accordance with generally accepted accounting principles in the United States ("Non-GAAP"), which include free cash flow and adjusted EBITDA. We also present certain operating performance measures, which include average monthly revenue per subscriber, or ARPU; customer service and billing expenses, per average subscriber; and subscriber acquisition cost, or SAC, per installation. Our adjusted EBITDA excludes the impact of share-based payment expense and certain purchase price accounting adjustments related to the merger of Sirius and XM (the "XM Merger"). Additionally, when applicable, our adjusted EBITDA metric excludes the effect of significant items that do not relate to the on-going performance of our business. We use these Non-GAAP financial and operating performance measures to manage our business, to set operational goals and as a basis for determining performance-based compensation for our employees. See the accompanying glossary on pages 17 through 21 for more details and for the reconciliation to the most directly comparable GAAP measure (where applicable).

We believe these Non-GAAP financial and operating performance measures provide useful information to investors regarding our financial condition and results of operations. We believe these Non-GAAP financial and operating performance measures may be useful to investors in evaluating our core trends because they provide a more direct view of our underlying costs. We believe investors may use our adjusted EBITDA to estimate our current enterprise value and to make investment decisions. We believe free cash flow provides useful supplemental information to investors regarding our cash available for future subscriber acquisitions and capital expenditures, to repurchase or retire debt, to acquire other companies and our ability to return capital to stockholders. By providing these Non-GAAP financial and operating performance measures, together with the reconciliations to the most directly comparable GAAP measure (where applicable), we believe we are enhancing investors' understanding of our business and our results of operations.

Our Non-GAAP financial measures should be viewed in addition to, and not as an alternative for or superior to, our reported results prepared in accordance with GAAP. In addition, our Non-GAAP financial measures may not be comparable to similarly-titled measures by other companies. Please refer to the glossary (pages 17 through 21) for a further discussion of such Non-GAAP financial and operating performance measures and reconciliations to the most directly comparable GAAP measure (where applicable). Subscribers and subscription related revenues and expenses associated with our connected vehicle services and Sirius XM Canada are not included in our subscriber count or subscriber-based operating metrics.

Set forth below are our subscriber balances as of December 31, 2018 compared to December 31, 2017 and as of December 31, 2017 compared to December 31, 2016.

	As of December 31,			2018 vs 2017 Change		2017 vs 2016 Change	
	2018	2017	2016	Amount	%	Amount	%
Self-pay subscribers	28,915	27,513	25,951	1,402	5 %	1,562	6 %
Paid promotional subscribers	5,124	5,223	5,395	(99)	(2)%	(172)	(3)%
Ending subscribers	34,039	32,736	31,346	1,303	4 %	1,390	4 %

The following table contains our Non-GAAP financial and operating performance measures which are based on our adjusted results of operations for the years ended December 31, 2018, 2017, and 2016. The ARPU and SAC, per installation, metrics for the year ended December 31, 2018 have been reduced due to the adoption of the new revenue standard ASU 2014-09 as of January 1, 2018 by $0.24 and $0.26, respectively. For more information regarding the impact of the adoption of ASU 2014-09 on these metrics, refer to the glossary (pages 17 through 21). For more information regarding the adoption of the new revenue standard, refer to Note 3 to our consolidated financial statements of this Annual Report.

	For the Years Ended December 31,			2018 vs 2017 Change		2017 vs 2016 Change	
	2018	2017	2016	Amount	%	Amount	%
Self-pay subscribers	1,402	1,562	1,663	(160)	(10)%	(101)	(6)%
Paid promotional subscribers	(99)	(172)	89	73	42 %	(261)	(293)%
Net additions	1,303	1,390	1,752	(87)	(6)%	(362)	(21)%
Daily weighted average number of subscribers	33,345	31,866	30,494	1,479	5 %	1,372	4 %
Average self-pay monthly churn	1.7%	1.8%	1.9%	(0.1)%	(6)%	(0.1)%	(5)%
New vehicle consumer conversion rate	39%	40%	39%	(1)%	(3)%	1 %	3 %
ARPU	$ 13.34	$ 13.25	$ 12.91	$ 0.09	1 %	$ 0.34	3 %
SAC, per installation	$ 25.66	$ 29.53	$ 30.61	$ (3.87)	(13)%	$ (1.08)	(4)%
Customer service and billing expenses, per average subscriber	$ 0.88	$ 0.94	$ 1.00	$ (0.06)	(6)%	$ (0.06)	(6)%
Adjusted EBITDA	$2,240,396	$2,115,886	$1,875,775	$ 124,510	6 %	$ 240,111	13 %
Free cash flow	$1,517,110	$1,559,772	$1,509,113	$ (42,662)	(3)%	$ 50,659	3 %

Subscribers. At December 31, 2018, we had approximately 34.0 million subscribers, an increase of approximately 1.3 million subscribers, or 4%, from the approximately 32.7 million subscribers as of December 31, 2017. The increase in total subscribers was primarily due to growth in our self-pay subscriber base, which increased by approximately 1.4 million. The increase in self-pay subscribers was primarily driven by trial conversions by owners and lessees of new and used vehicles as well as subscriber win back programs, partially offset by deactivations.

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, net additions were 1.3 million and 1.4 million, respectively, a decrease of 6%, or 0.1 million. Self-pay net additions primarily decreased due to decreased growth in trial conversions and gross add win-backs, partially offset by improvements in average self-pay monthly churn. The reduction of paid promotional subscribers improved due to higher shipments out-pacing declines in trial starts from automakers offering paid promotional subscriptions.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, net additions were 1.4 million and 1.8 million, respectively, a decrease of 21%, or 0.4 million. The decline of paid promotional net additions was due to paid

promotional subscription ends out-pacing paid promotional subscription starts as starts from automakers offering paid promotional subscriptions remained relatively flat. Self-pay net additions declined due to higher vehicle turnover of our subscriber base mitigated by growth in gross additions.

Average Self-pay Monthly Churn is derived by dividing the monthly average of self-pay deactivations for the period by the average number of self-pay subscribers for the period. (See accompanying glossary on pages 17 through 21 for more details.)

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, our average self-pay monthly churn rate was 1.7% and 1.8%, respectively. The decrease was due to improvements in non-pay and voluntary churn.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, our average self-pay monthly churn rate was 1.8% and 1.9%, respectively. The decrease was due to improvements in non-pay and voluntary churn.

New Vehicle Consumer Conversion Rate is the percentage of owners and lessees of new vehicles that receive our service and convert to become self-paying subscribers after an initial promotional period. The metric excludes rental and fleet vehicles. (See accompanying glossary on pages 17 through 21 for more details).

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, our new vehicle consumer conversion rate was 39% and 40%, respectively. The decrease was driven primarily by a decline in conversion of first time trial subscribers.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, our new vehicle consumer conversion rate was 40% and 39%, respectively. The increase was driven by improvements in the conversion of promotional subscribers who were also existing self-pay subscribers.

ARPU is derived from total earned subscriber revenue (excluding revenue derived from our connected vehicle services), net advertising revenue and other subscription-related revenue, divided by the number of months in the period, divided by the daily weighted average number of subscribers for the period. (See the accompanying glossary on pages 17 through 21 for more details.)

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, ARPU was $13.34 and $13.25, respectively. The increase in certain of our subscription rates, including the U. S. Music Royalty Fee, and higher advertising revenue was negatively impacted by the adoption of the new revenue standard, effective as of January 1, 2018 of $0.24, and the growth in subscription discounts offered through customer acquisition and retention programs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, ARPU was $13.25 and $12.91, respectively. The increase was driven primarily by increases in certain of our subscription rates in 2016, partially offset by growth in subscription discounts offered through customer acquisition and retention programs.

SAC, Per Installation, is derived from subscriber acquisition costs and margins from the sale of radios, components and accessories (excluding connected vehicle services), divided by the number of satellite radio installations in new vehicles and shipments of aftermarket radios for the period. (See the accompanying glossary on pages 17 through 21 for more details.)

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, SAC, per installation, was $25.66 and $29.53, respectively. The decrease was driven by reductions to OEM hardware subsidy rates, our transition to a new generation of chipsets as well as the impact of the adoption of the new revenue standard, effective as of January 1, 2018, of $0.26.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, SAC, per installation, was $29.53 and $30.61, respectively. The decrease was driven by reductions to OEM hardware subsidy rates as well as lower subsidized costs related to the transition of chipsets.

Customer Service and Billing Expenses, Per Average Subscriber, is derived from total customer service and billing expenses, excluding connected vehicle customer service and billing expenses and share-based payment expense, divided by the number of months in the period, divided by the daily weighted average number of subscribers for the period. (See the accompanying glossary on pages 17 through 21 for more details.)

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, customer service and billing expenses, per average subscriber, were $0.88 and $0.94, respectively. The decrease was primarily driven by lower call center costs due to lower agent rates, increased customer self-service resulting in lower contact rates and improved non-pay processes driving lower bad debt expense.

- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, customer service and billing expenses, per average subscriber, were $0.94 and $1.00, respectively. The decrease was primarily related to lower call center costs due to lower contact rates and lower agent rates, partially offset by higher transaction fees.

Adjusted EBITDA. EBITDA is defined as net income before interest expense, income tax expense and depreciation and amortization. Adjusted EBITDA excludes the impact of other income, loss on extinguishment of debt, acquisition related costs, other non-cash charges, such as certain purchase price accounting adjustments, share-based payment expense, loss on disposal of assets, and legal settlements and reserves related to the historical use of sound recordings. (See the accompanying glossary on pages 17 through 21 for a reconciliation to GAAP and for more details.)

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, adjusted EBITDA was $2,240,396 and $2,115,886, respectively, an increase of 6%, or $124,510. The increase was due to: growth of 6% in total revenue which was primarily a result of the increase in our subscriber base; additional revenues from the U.S. Music Royalty Fee; an increase in advertising revenue; and lower subscriber acquisition costs. The increases were partially offset by higher revenue share and royalty, sales and marketing, programming and content, satellite and transmission, and general and administrative costs.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, adjusted EBITDA was $2,115,886 and $1,875,775, respectively, an increase of 13%, or $240,111. The increase was due to: a growth in revenues resulting from an increase in our subscriber base; an increase in certain of our subscription prices; an increase in Other revenue from higher revenue from Sirius XM Canada under the new Services Agreement and Advisory Services Agreement; additional amounts produced by the U.S. Music Royalty Fee; and lower general and administrative costs and subscriber acquisition costs. These favorable variances were partially offset by higher revenue share and royalty costs due to growth in our revenues and royalty rates, programming and content, sales and marketing and engineering, design and development costs.

Free Cash Flow includes cash provided by operations, net of additions to property and equipment, restricted and other investment activity and the return of capital from an investment in an unconsolidated entity. (See the accompanying glossary on pages 17 through 21 for a reconciliation to GAAP and for more details.)

- *2018 vs. 2017*: For the years ended December 31, 2018 and 2017, free cash flow was $1,517,110 and $1,559,772, respectively, a decrease of $42,662, or 3%. The decrease was driven by the one-time lump sum payment of $150,000 to resolve all outstanding claims under our statutory license for sound recordings for the period January 1, 2007 through December 31, 2017, an increase in additions to property and equipment due to the timing of payments for new satellite construction, and the timing of payments to vendors; partially offset by higher net cash provided by operating activities resulting from improved operating performance.
- *2017 vs. 2016*: For the years ended December 31, 2017 and 2016, free cash flow was $1,559,772 and $1,509,113, respectively, an increase of $50,659, or 3%. The increase was driven by higher net cash provided by operating activities resulting from improved operating performance, partially offset by an increase in additions to property and equipment resulting from new satellite construction.

Liquidity and Capital Resources

Cash Flows for the year ended December 31, 2018 compared with the year ended December 31, 2017 and the year ended December 31, 2017 compared with the year ended December 31, 2016

The following table presents a summary of our cash flow activity for the periods set forth below:

	For the Years Ended December 31,				
	2018	2017	2016	2018 vs 2017	2017 vs 2016
Net cash provided by operating activities	$ 1,760,800	$ 1,763,744	$ 1,676,761	$ (2,944)	$ 86,983
Net cash used in investing activities	(379,276)	(1,146,349)	(210,124)	767,073	(936,225)
Net cash used in financing activities	(1,395,528)	(761,849)	(1,364,536)	(633,679)	602,687
Net (decrease) increase in cash, cash equivalents and restricted cash	(14,004)	(144,454)	102,101	130,450	(246,555)
Cash, cash equivalents and restricted cash at beginning of period	79,374	223,828	121,727	(144,454)	102,101
Cash, cash equivalents and restricted cash at end of period	$ 65,370	$ 79,374	$ 223,828	$ (14,004)	$ (144,454)

Cash Flows Provided by Operating Activities

Cash flows provided by operating activities decreased by $2,944 to $1,760,800 for the year ended December 31, 2018 from $1,763,744 for the year ended December 31, 2017. Cash flows provided by operating activities increased by $86,983 to $1,763,744 for the year ended December 31, 2017 from $1,676,761 for the year ended December 31, 2016.

Our largest source of cash provided by operating activities is cash generated by subscription and subscription-related revenues. We also generate cash from the sale of advertising on certain non-music channels and the sale of satellite radios, components and accessories. Our primary uses of cash from operating activities include revenue share and royalty payments to distributors, programming and content providers, and payments to radio manufacturers, distributors and automakers. In addition, uses of cash from operating activities include payments to vendors to service, maintain and acquire subscribers, general corporate expenditures, and compensation and related costs.

Cash Flows Used in Investing Activities

Cash flows used in investing activities in the years ended December 31, 2018 and 2017 were primarily due to additional spending to construct replacement satellites, improve our terrestrial repeater network, for capitalized software and hardware, deferred compensation and invest in other equity investees. We spent $166,632 and $139,937 on capitalized software and hardware as well as $132,317 and $99,980 to construct replacement satellites during the years ended December 31, 2018 and 2017, respectively. In addition, cash flows used in investing activities in the year ended December 31, 2017 were primarily due to our investment in Pandora of $480,000, loans to related parties of $132,465, payments to acquire additional ownership in related parties (inclusive of transaction costs) of $132,205 and the acquisition of Automatic for $107,273 (net of cash and restricted cash acquired). In 2016, our cash flows used in investing activities were primarily due to additional spending of $43,300 to construct replacement satellites, improve our terrestrial repeater network and for capitalized software.

Cash Flows Used in Financing Activities

Cash flows used in financing activities consists of the issuance and repayment of long-term debt, the purchase of common stock under Holdings' share repurchase program and the payment of cash dividends. Proceeds from long-term debt have been used to fund our operations, construct and launch new satellites, invest in other infrastructure improvements and purchase shares of Holdings' common stock.

Cash flows used in financing activities in the year ended December 31, 2018 were primarily due to the purchase and retirement of shares of Holdings' common stock under Holdings' repurchase program for $1,314,286, the payment of cash dividends on Holdings' common stock of $201,434 and repayment under the Credit Facility of $136,190. Cash flows used in financing activities in the year ended December 31, 2017 were primarily due to the redemption of $1,500,000 aggregate principal amount of then-outstanding notes, the purchase and retirement for $1,409,035 of shares of Holdings' common stock under Holdings' repurchase program, the payment of cash dividends of $190,242, and net repayments of $90,000 under the Credit Facility, partially offset by the issuance of $1,000,000 aggregate principal amount of 3.875% Senior Notes due 2022 and $1,500,000 aggregate principal amount of 5.00% Senior Notes due 2027. Cash flows used in financing activities in the year ended December 31, 2016 were primarily due to the purchase and retirement of shares of our common stock under our repurchase program for $1,673,518, the redemption of $650,000 of our then-outstanding 5.875% Senior Notes due 2020 and the payment of a cash dividend of $48,079, partially offset by the issuance of $1,000,000 aggregate principal amount of 5.375% Senior Notes due 2026 and $50,000 in net borrowings under the Credit Facility.

Future Liquidity and Capital Resource Requirements

Based upon our current business plans, we expect to fund operating expenses, capital expenditures, including the construction of replacement satellites, working capital requirements, interest payments, taxes and scheduled maturities of our debt with existing cash, cash flow from operations and borrowings under our Credit Facility. As of December 31, 2018, $1,311,000 was available for future borrowing under our Credit Facility. We believe that we have sufficient cash and cash equivalents as well as debt capacity to cover our estimated short-term and long-term funding needs, including amounts to construct, launch and insure replacement satellites, as well as fund Holdings' stock repurchases, future dividend payments on Holdings' common stock and strategic opportunities.

Our ability to meet our debt and other obligations depends on our future operating performance and on economic, financial, competitive and other factors. We continually review our operations for opportunities to adjust the timing of expenditures to ensure that sufficient resources are maintained.

We regularly evaluate our business plans and strategy. These evaluations often result in changes to our business plans and strategy, some of which may be material and significantly change our cash requirements. These changes in our business plans or strategy may include: the acquisition of unique or compelling programming; the development and introduction of new features or services; significant new or enhanced distribution arrangements; investments in infrastructure, such as satellites, equipment or radio spectrum; and acquisitions and investments, including acquisitions and investments that are not directly related to our satellite radio business.

Holdings' Capital Return Program

On January 29, 2019, Holdings' board of directors approved an additional $2,000,000 for repurchase of Holdings' common stock. The new approval increases the amount of common stock that we have been authorized to repurchase to an aggregate of $14,000,000. As of December 31, 2018, Holdings' cumulative repurchases since December 2012 under Holdings' stock repurchase program totaled $10,674,252, and $1,325,748 remained available for additional repurchases under Holdings' existing stock repurchase program authorization.

Shares of common stock may be purchased from time to time on the open market and in privately negotiated transactions, including in accelerated stock repurchase transactions and transactions with Liberty Media and its affiliates. We intend to fund the additional repurchases through a combination of cash on hand, cash generated by operations and future borrowings.

On January 29, 2019, Holdings' board of directors declared a quarterly dividend on Holdings' common stock in the amount of $0.0121 per share of Holdings' common stock payable on February 28, 2019 to Holdings' stockholders of record as of the close of business on February 11, 2019. Holdings' board of directors expects to declare regular quarterly dividends, in an aggregate annual amount of $0.0484 per share of Holdings' common stock.

Debt Covenants

The indentures governing our senior notes and the agreement governing the Credit Facility include restrictive covenants. As of December 31, 2018, we were in compliance with such covenants. For a discussion of our “Debt Covenants,” refer to Note 11 to our consolidated financial statements in this Annual Report.

Off-Balance Sheet Arrangements

We do not have any significant off-balance sheet arrangements other than those disclosed in Note 14 to our consolidated financial statements in this Annual Report that are reasonably likely to have a material effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources.

Contractual Cash Commitments

For a discussion of our "Contractual Cash Commitments," refer to Note 14 to our consolidated financial statements in this Annual Report.

Related Party Transactions

For a discussion of "Related Party Transactions," refer to Note 10 to our consolidated financial statements in this Annual Report.

Critical Accounting Policies and Estimates

We adopted the new revenue standard using the modified retrospective method by recognizing the cumulative effect of initially applying the new revenue standard to all non-completed contracts as of January 1, 2018 as an adjustment to opening Accumulated deficit in the period of adoption. For more information regarding the adoption of the new revenue standard, refer to Note 3 to our consolidated financial statements of this Annual Report.

Our consolidated financial statements are prepared in accordance with GAAP, which requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the periods. Accounting estimates require the use of significant management assumptions and judgments as to future events, and the effect of those events cannot be predicted with certainty. The accounting estimates will change as new events occur, more experience is acquired and more information is obtained. We evaluate and update our assumptions and estimates on an ongoing basis and use outside experts to assist in that evaluation when we deem necessary. We have identified all significant accounting policies in Note 3 to our consolidated financial statements in this Annual Report.

Intangible Assets. Our intangible assets include goodwill, other indefinite-lived assets (our FCC licenses and trademarks) and definite-lived assets. Our annual impairment assessment of our goodwill and our indefinite-lived assets is performed as of the fourth quarter of each year. We also review our intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset is not recoverable. If an impairment exists, the impairment is measured as the amount by which the carrying amount of an intangible asset exceeds its implied fair value.

- *Goodwill:* ASC 350, *Intangibles - Goodwill and Other*, states that an entity should perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value.
- *Indefinite-lived Assets:* ASC 350-30-35, *Intangibles - General Intangibles Other than Goodwill*, provides for an option to first perform a qualitative assessment to determine whether it is more likely than not that an asset is impaired. If the qualitative assessment supports that it is more likely than not that the fair value of the asset exceeds its carrying value, a company is not required to perform a quantitative impairment test. If the qualitative assessment does not support that the fair value of the asset exceeds its carrying value, then a quantitative assessment is performed.
- *Definite-lived:* We carry our definite-lived assets at cost less accumulated amortization.

Useful Life of Broadcast/Transmission System. Our satellite system includes the costs of our satellite construction, launch vehicles, launch insurance, capitalized interest, spare satellites, terrestrial repeater network and satellite uplink facilities. We monitor our satellites for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset is not recoverable.

We operate two in-orbit Sirius satellites, FM-5 and FM-6, which launched in 2009 and 2013, respectively, and estimate they will operate effectively through the end of their depreciable lives in 2024 and 2028, respectively.

We operate three in-orbit XM satellites, XM-3, XM-4 and XM-5. We estimate that our XM-3 and XM-4 satellites launched in 2005 and 2006, respectively, will reach the end of their depreciable lives in 2020 and 2021, respectively. Our XM-5 satellite was launched in 2010, is used as an in-orbit spare for the Sirius and XM systems and is expected to reach the end of its depreciable life in 2025.

Our satellites have been designed to last fifteen-years. Our in-orbit satellites may experience component failures which could adversely affect their useful lives. We monitor the operating condition of our in-orbit satellites and if events or circumstances indicate that the depreciable lives of our in-orbit satellites have changed, we will modify the depreciable life accordingly. If we were to revise our estimates, our depreciation expense would change.

Income Taxes. Deferred income taxes are recognized for the tax consequences related to temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for tax purposes, based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income.

We assess the recoverability of deferred tax assets at each reporting date and, where applicable, a valuation allowance is recognized when, based on the weight of all available evidence, it is considered more likely than not that all, or some portion, of the deferred tax assets will not be realized. Our assessment includes an analysis of whether deferred tax assets will be realized in the ordinary course of operations based on the available positive and negative evidence, including the scheduling of deferred tax liabilities and forecasted income from operations. The underlying assumptions we use in forecasting future taxable income require significant judgment. In the event that actual income from operations differs from forecasted amounts, or if we change our estimates of forecasted income from operations, we could record additional charges or reduce allowances in order to adjust the carrying value of deferred tax assets to their realizable amount. Such adjustments could be material to our consolidated financial statements.

As of December 31, 2018, we had a valuation allowance of $66,229 relating to deferred tax assets that are not more likely than not to be realized due to timing of certain state net operating loss limitations and acquired net operating losses that were not likely to be utilized.

ASC 740, *Income Taxes*, requires a company to first determine whether it is more likely than not that a tax position will be sustained based on its technical merits as of the reporting date, assuming that taxing authorities will examine the position and have full knowledge of all relevant information. A tax position that meets this more likely than not threshold is then measured and recognized at the largest amount of benefit that is greater than fifty percent likely to be realized upon effective settlement with a taxing authority. If the tax position is not more likely than not to be sustained, the gross amount of the unrecognized tax position will not be recorded in the financial statements but will be shown in tabular format within the uncertain income tax positions. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs due to the following conditions: (1) the tax position is “more likely than not” to be sustained, (2) the tax position, amount, and/or timing is ultimately settled through negotiation or litigation, or (3) the statute of limitations for the tax position has expired. A number of years may elapse before an uncertain tax position is effectively settled or until there is a lapse in the applicable statute of limitations. We record interest and penalties related to uncertain tax positions in Income tax expense in our consolidated statements of comprehensive income. As of December 31, 2018, the gross liability for income taxes associated with uncertain tax positions was $387,149.

Glossary

Adjusted EBITDA - EBITDA is defined as net income before interest expense, income tax expense and depreciation and amortization. We adjust EBITDA to exclude the impact of other income as well as certain other charges discussed below. Adjusted EBITDA is a Non-GAAP financial measure that excludes (if applicable): (i) certain adjustments as a result of the purchase price accounting for the XM Merger, (ii) share-based payment expense and (iii) other significant operating expense (income) that do not relate to the on-going performance of our business. We believe adjusted EBITDA is a useful measure of the underlying trend of our operating performance, which provides useful information about our business apart from the costs associated with our capital structure and purchase price accounting. We believe investors find this Non-GAAP financial measure useful when analyzing our past operating performance with our current performance and comparing our operating performance to the performance of other communications, entertainment and media companies. We believe investors use adjusted EBITDA to estimate our current enterprise value and to make investment decisions. As a result of large capital investments in our satellite radio system, our results of operations reflect significant charges for depreciation expense. We believe the exclusion of share-based payment expense is useful as it is not directly related to the operational conditions of our business. We also believe the exclusion of the legal settlements and reserves related to the historical use of sound recordings, acquisition related costs, loss on extinguishment of debt and loss on disposal of assets, to the extent they occur during the period, is useful as they are significant expenses not incurred as part of our normal operations for the period.

Adjusted EBITDA has certain limitations in that it does not take into account the impact to our statements of comprehensive income of certain expenses, including share-based payment expense and certain purchase price accounting for the XM Merger. We endeavor to compensate for the limitations of the Non-GAAP measure presented by also providing the comparable GAAP measure with equal or greater prominence and descriptions of the reconciling items, including quantifying such items, to derive the Non-GAAP measure. Investors that wish to compare and evaluate our operating results after giving effect for these costs, should refer to net income as disclosed in our consolidated statements of comprehensive income. Since adjusted EBITDA is a Non-GAAP financial performance measure, our calculation of adjusted EBITDA may be susceptible to varying calculations; may not be comparable to other similarly titled measures of other companies; and should not be considered in isolation, as a substitute for, or superior to measures of financial performance prepared in accordance with GAAP. The reconciliation of net income to the adjusted EBITDA is calculated as follows:

	For the Years Ended December 31,		
	2018	2017	2016
Net income:	$ 1,175,893	$ 647,908	$ 745,933
Add back items excluded from Adjusted EBITDA:			
Purchase price accounting adjustments:			
Revenues	7,251	7,251	7,251
Sound recording legal settlements and reserves	69,144	45,100	45,900
Acquisition related costs	3,158	—	—
Loss on disposal of assets	—	—	12,912
Share-based payment expense	133,175	124,069	108,604
Depreciation and amortization	300,720	298,602	268,979
Interest expense	350,073	345,820	331,225
Loss on extinguishment of debt	—	43,679	24,229
Other (income) expense	(43,699)	(12,844)	(14,985)
Income tax expense	244,681	616,301	345,727
Adjusted EBITDA	$ 2,240,396	$ 2,115,886	$ 1,875,775

ARPU - is derived from total earned subscriber revenue (excluding revenue associated with our connected vehicle services), advertising revenue and other subscription-related revenue, divided by the number of months in the period, divided by the daily weighted average number of subscribers for the period. Other subscription-related revenue includes the U.S. Music Royalty Fee. The ARPU for the year ended December 31, 2018 reflects adjustments as a result of adopting the new revenue standard as of January 1, 2018. ARPU is calculated as follows:

	For the Years Ended December 31,		
	2018	2017	2016
Subscriber revenue, excluding connected vehicle services	$ 4,482,382	$ 4,388,676	$ 4,108,547
Add: advertising revenue	187,569	160,347	138,231
Add: other subscription-related revenue	669,563	518,457	478,063
	$ 5,339,514	$ 5,067,480	$ 4,724,841
Daily weighted average number of subscribers	33,345	31,866	30,494
ARPU	$ 13.34	$ 13.25	$ 12.91

The table below illustrates the impact that the adoption of the new revenue standard had on ARPU for the year ended December 31, 2018.

	For the Year Ended December 31, 2018		
	As Reported	Impact of Adopting ASU 2014-09	Balances Without Adoption of ASU 2014-09
Subscriber revenue, excluding connected vehicle services	$ 4,482,382	$ 94,767	$ 4,577,149
Add: advertising revenue	187,569	—	187,569
Add: other subscription-related revenue	669,563	—	669,563
	$ 5,339,514	$ 94,767	$ 5,434,281
Daily weighted average number of subscribers	33,345	33,345	33,345
ARPU	$ 13.34	$ 0.24	$ 13.58

Average self-pay monthly churn - is defined as the monthly average of self-pay deactivations for the period divided by the average number of self-pay subscribers for the period.

Customer service and billing expenses, per average subscriber - is derived from total customer service and billing expenses, excluding connected vehicle customer service and billing expenses and share-based payment expense, divided by the number of months in the period, divided by the daily weighted average number of subscribers for the period. We believe the exclusion of share-based payment expense in our calculation of customer service and billing expenses, per average subscriber, is useful as share-based payment expense is not directly related to the operational conditions that give rise to variations in the components of our customer service and billing expenses. Customer service and billing expenses, per average subscriber, is calculated as follows:

	For the Years Ended December 31,		
	2018	2017	2016
Customer service and billing expenses, excluding connected vehicle services	$ 357,997	$ 365,005	$ 367,978
Less: share-based payment expense	(4,558)	(4,229)	(3,735)
	$ 353,439	$ 360,776	$ 364,243
Daily weighted average number of subscribers	33,345	31,866	30,494
Customer service and billing expenses, per average subscriber	$ 0.88	$ 0.94	$ 1.00

Free cash flow - is derived from cash flow provided by operating activities, net of additions to property and equipment and purchases of other investments. Free cash flow is a metric that our management and board of directors use to evaluate the cash generated by our operations, net of capital expenditures and other investment activity. In a capital intensive business, with significant investments in satellites, we look at our operating cash flow, net of these investing cash outflows, to determine cash available for future subscriber acquisition and capital expenditures, to repurchase or retire debt, to acquire other companies and to evaluate our ability to return capital to stockholders. We exclude from free cash flow certain items that do not relate to the on-going performance of our business, such as cash outflows for acquisitions, strategic investments, and net loan activity with related parties and other equity investees. We believe free cash flow is an indicator of the long-term financial stability of our business. Free cash flow, which is reconciled to "Net cash provided by operating activities," is a Non-GAAP financial measure. This measure can be calculated by deducting amounts under the captions "Additions to property and equipment" and deducting or adding Restricted and other investment activity from "Net cash provided by operating activities" from the consolidated statements of cash flows. Free cash flow should be used in conjunction with other GAAP financial performance measures and may not be comparable to free cash flow measures presented by other companies. Free cash flow should be viewed as a supplemental measure rather than an alternative measure of cash flows from operating activities, as determined in accordance with GAAP. Free cash flow is limited and does not represent remaining cash flows available for discretionary expenditures due to the fact that the measure does not deduct the payments required for debt maturities. We believe free cash flow provides useful supplemental information to investors regarding our current cash flow, along with other GAAP measures (such as cash flows from operating and investing activities), to determine our financial condition, and to compare our operating performance to other communications, entertainment and media companies. Free cash flow is calculated as follows:

	For the Years Ended December 31,		
	2018	2017	2016
Cash Flow information			
Net cash provided by operating activities	$ 1,760,800	$ 1,763,744	$ 1,676,761
Net cash used in investing activities	$ (379,276)	$ (1,146,349)	$ (210,124)
Net cash used in financing activities	$ (1,395,528)	$ (761,849)	$ (1,364,536)
Free Cash Flow			
Net cash provided by operating activities	$ 1,760,800	$ 1,763,744	$ 1,676,761
Equity-related transactions for Holdings [(a)]	119,618	91,845	42,476
Additions to property and equipment	(355,703)	(287,970)	(205,829)
Purchases of other investments	(7,605)	(7,847)	(4,295)
Free cash flow	$ 1,517,110	$ 1,559,772	$ 1,509,113

(a) Subsequent to our corporate reorganization in November 2013, certain equity-related transactions are reported as related party transactions within our consolidated statements of cash flows. For the years ended December 31, 2018 and 2017, this included payments of $119,625 and $92,619, respectively, for taxes paid in lieu of shares issued for stock-based compensation and $7 and $774, respectively, in proceeds from the exercise of stock options. These equity-related transactions are classified as Cash flows used in financing activities within Holdings' consolidated statements of cash flows, and therefore, are adjusted to reflect free cash flow at Sirius XM.

New vehicle consumer conversion rate - is defined as the percentage of owners and lessees of new vehicles that receive our satellite radio service and convert to become self-paying subscribers after the initial promotion period. At the time satellite radio enabled vehicles are sold or leased, the owners or lessees generally receive trial subscriptions ranging from three to twelve months. We measure conversion rate three months after the period in which the promotional period ends. The metric excludes rental and fleet vehicles.

Subscriber acquisition cost, per installation - or SAC, per installation, is derived from subscriber acquisition costs and margins from the sale of radios, components and accessories (excluding connected vehicle services), divided by the number of satellite radio installations in new vehicles and shipments of aftermarket radios for the period. The SAC, per installation, for the year ended December 31, 2018 reflects adjustments as a result of adopting the new revenue standard as of January 1, 2018. SAC, per installation, is calculated as follows:

	For the Years Ended December 31,		
	2018	2017	2016
Subscriber acquisition costs, excluding connected vehicle services	$ 470,336	$ 499,492	$ 512,809
Less: margin from sales of radios and accessories, excluding connected vehicle services	(122,347)	(96,110)	(78,065)
	$ 347,989	$ 403,382	$ 434,744
Installations	13,563	13,662	14,203
SAC, per installation	$ 25.66	$ 29.53	$ 30.61

The table below illustrates the impact that the adoption of the new revenue standard has had on SAC, per installation, for the year ended December 31, 2018.

	For the Year Ended December 31, 2018		
	As Reported	Impact of Adopting ASU 2014-09	Balances Without Adoption of ASU 2014-09
Subscriber acquisition costs, excluding connected vehicle services	$ 470,336	$ 3,540	$ 473,876
Less: margin from sales of radios and accessories, excluding connected vehicle services	(122,347)	—	(122,347)
	$ 347,989	$ 3,540	$ 351,529
Installations	13,563	13,563	13,563
SAC, per installation	$ 25.66	$ 0.26	$ 25.92

Report of Independent Registered Public Accounting Firm

To the Board of Directors
Sirius XM Radio Inc. and subsidiaries:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Sirius XM Radio Inc. and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of comprehensive income, stockholder equity, and cash flows for each of the years in the three‑year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three‑year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Change in Accounting Principle

As described in Note 3 to the consolidated financial statements, the Company changed its method of accounting for revenue recognition effective January 1, 2018 due to the adoption of Accounting Standard Update (ASU) 2014‑09 and all related amendments, which established Accounting Standard Codification (ASC) Topic 606, *Revenue ‑ Revenue from Contracts with Customers*.

Also as discussed in Note 3 to the consolidated financial statements, the Company changed its method of accounting for share-based payments in 2016 due to the adoption of ASU 2016-09, *Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*.

Basis for Opinion

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

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

/s/ KPMG LLP

We have served as the Company's auditor since 2008.

New York, New York
January 30, 2019

SIRIUS XM RADIO INC. AND SUBSIDIARIES
(a wholly-owned subsidiary of Sirius XM Holdings Inc.)
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	For the Years Ended December 31,		
(in thousands)	**2018**	**2017**	**2016**
Revenue:			
Subscriber revenue	$ 4,593,803	$ 4,472,522	$ 4,196,852
Advertising revenue	187,569	160,347	138,231
Equipment revenue	154,878	131,586	118,947
Music royalty fee and other revenue	834,442	660,674	563,190
Total revenue	5,770,692	5,425,129	5,017,220
Operating expenses:			
Cost of services:			
Revenue share and royalties	1,393,842	1,210,323	1,108,515
Programming and content	405,686	388,033	353,779
Customer service and billing	382,537	385,431	387,131
Satellite and transmission	95,773	82,747	103,020
Cost of equipment	30,768	35,448	40,882
Subscriber acquisition costs	470,336	499,492	512,809
Sales and marketing	484,044	437,739	386,724
Engineering, design and development	123,219	112,427	82,146
General and administrative	356,819	334,023	341,106
Depreciation and amortization	300,720	298,602	268,979
Total operating expenses	4,043,744	3,784,265	3,585,091
Income from operations	1,726,948	1,640,864	1,432,129
Other income (expense):			
Interest expense	(350,073)	(345,820)	(331,225)
Loss on extinguishment of debt	—	(43,679)	(24,229)
Other income	43,699	12,844	14,985
Total other income (expense)	(306,374)	(376,655)	(340,469)
Income before income taxes	1,420,574	1,264,209	1,091,660
Income tax expense	(244,681)	(616,301)	(345,727)
Net income attributable to Sirius XM Radio Inc.'s sole stockholder	$ 1,175,893	$ 647,908	$ 745,933
Foreign currency translation adjustment, net of tax	(28,613)	18,546	363
Total comprehensive income attributable to Sirius XM Radio Inc.'s sole stockholder	$ 1,147,280	$ 666,454	$ 746,296

See accompanying notes to the consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
(a wholly-owned subsidiary of Sirius XM Holdings Inc.)
CONSOLIDATED BALANCE SHEETS

(in thousands, except per share data)	As of December 31, 2018	As of December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 54,431	$ 69,022
Receivables, net	232,986	241,727
Inventory, net	22,198	20,199
Related party current assets	10,585	10,284
Prepaid expenses and other current assets	158,033	129,669
Total current assets	478,233	470,901
Property and equipment, net	1,512,865	1,462,766
Intangible assets, net	2,501,361	2,522,846
Goodwill	2,289,985	2,286,582
Related party long-term assets	9,001,118	7,522,007
Deferred tax assets	292,703	505,528
Other long-term assets	137,273	118,671
Total assets	$ 16,213,538	$ 14,889,301
LIABILITIES AND STOCKHOLDER EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$ 735,079	$ 768,077
Accrued interest	128,204	137,428
Current portion of deferred revenue	1,931,613	1,881,825
Current maturities of debt	3,447	5,105
Related party current liabilities	4,335	2,839
Total current liabilities	2,802,678	2,795,274
Long-term deferred revenue	148,983	174,579
Long-term debt	6,884,536	6,741,243
Related party long-term liabilities	4,270	7,364
Deferred tax liabilities	47,251	8,169
Other long-term liabilities	101,939	100,355
Total liabilities	9,989,657	9,826,984
Commitments and contingencies (Note 14)		
Stockholder equity:		
Common stock, par value $0.001; 9,000,000 shares authorized; 1 share issued and outstanding at December 31, 2018 and December 31, 2017, respectively	—	—
Accumulated other comprehensive (loss) income, net of tax	(6,193)	18,407
Additional paid-in capital	8,679,538	8,679,538
Accumulated deficit	(2,449,464)	(3,635,628)
Total stockholder equity	6,223,881	5,062,317
Total liabilities and stockholder equity	$ 16,213,538	$ 14,889,301

See accompanying notes to the consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
(a wholly-owned subsidiary of Sirius XM Holdings Inc.)
CONSOLIDATED STATEMENT OF STOCKHOLDER EQUITY

	Common Stock					
(in thousands)	Shares	Amount	Accumulated Other Comprehensive Income (Loss)	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
Balance at January 1, 2016	1	$ —	$ (502)	$ 8,679,538	$ (5,323,365)	$ 3,355,671
Cumulative effect of change in accounting principle	—	—	—	—	293,896	293,896
Comprehensive income, net of tax	—	—	363	—	745,933	746,296
Balance at December 31, 2016	1	$ —	$ (139)	$ 8,679,538	$ (4,283,536)	$ 4,395,863
Comprehensive income, net of tax	—	—	18,546	—	647,908	666,454
Balance at December 31, 2017	1	$ —	$ 18,407	$ 8,679,538	$ (3,635,628)	$ 5,062,317
Cumulative effect of change in accounting principles	—	—	4,013	—	10,271	14,284
Comprehensive income, net of tax	—	—	(28,613)	—	1,175,893	1,147,280
Balance at December 31, 2018	1	$ —	$ (6,193)	$ 8,679,538	$ (2,449,464)	$ 6,223,881

See accompanying notes to the consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
(a wholly-owned subsidiary of Sirius XM Holdings Inc.)
CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the Years Ended December 31,		
(in thousands)	**2018**	**2017**	**2016**
Cash flows from operating activities:			
Net income	$ 1,175,893	$ 647,908	$ 745,933
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	300,720	298,602	268,979
Non-cash interest expense, net of amortization of premium	9,297	9,050	8,608
Provision for doubtful accounts	50,824	55,715	55,941
Amortization of deferred income related to equity method investment	(2,776)	(2,776)	(2,772)
Loss on extinguishment of debt	—	43,679	24,229
Loss (gain) on unconsolidated entity investments, net	10,479	(4,561)	(12,529)
Gain on fair value instrument	(42,617)	(472)	—
Dividend received from unconsolidated entity investment	2,128	3,606	7,160
Loss on disposal of assets	—	—	12,912
Share-based payment expense	133,175	124,069	108,604
Deferred income taxes	256,575	583,520	323,562
Changes in operating assets and liabilities:			
Receivables	(42,083)	(73,777)	(44,188)
Inventory	(1,999)	1,874	1,932
Related party, net	(101,418)	(73,297)	(45,140)
Prepaid expenses and other current assets	(20,189)	50,194	7,156
Other long-term assets	10,385	7,333	38,835
Accounts payable and accrued expenses	(37,240)	21,081	78,099
Accrued interest	(9,224)	22,795	22,978
Deferred revenue	70,002	41,894	79,404
Other long-term liabilities	(1,132)	7,307	(2,942)
Net cash provided by operating activities	1,760,800	1,763,744	1,676,761
Cash flows from investing activities:			
Additions to property and equipment	(355,703)	(287,970)	(205,829)
Purchases of other investments	(7,605)	(7,847)	(4,295)
Acquisitions, net of cash acquired	(2,377)	(107,273)	—
Investments in related parties and other equity investees	(16,833)	(612,465)	—
Repayment from (loan to) related party	3,242	(130,794)	—
Net cash used in investing activities	(379,276)	(1,146,349)	(210,124)
Cash flows from financing activities:			
Intercompany financing activities	(1,515,720)	(1,599,277)	(1,721,597)
Revolving credit facility, net of deferred financing costs	136,190	(90,000)	50,000
Proceeds from long-term borrowings, net of costs	—	2,473,071	987,143
Principal payments of long-term borrowings	(15,998)	(1,512,578)	(660,985)
Payment of premiums on redemption of debt	—	(33,065)	(19,097)
Net cash used in financing activities	(1,395,528)	(761,849)	(1,364,536)
Net decrease in cash, cash equivalents and restricted cash	(14,004)	(144,454)	102,101
Cash, cash equivalents and restricted cash at beginning of period	79,374	223,828	121,727
Cash, cash equivalents and restricted cash at end of period[(1)]	$ 65,370	$ 79,374	$ 223,828

See accompanying notes to the consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
(a wholly-owned subsidiary of Sirius XM Holdings Inc.)
CONSOLIDATED STATEMENTS OF CASH FLOWS - Continued

	For the Years Ended December 31,		
(in thousands)	2018	2017	2016
Supplemental Disclosure of Cash and Non-Cash Flow Information			
Cash paid during the period for:			
Interest, net of amounts capitalized	$ 344,906	$ 310,492	$ 292,556
Income taxes paid	$ 6,072	$ 28,045	$ 20,639
Non-cash investing and financing activities:			
Capital lease obligations incurred to acquire assets	$ 499	$ 2,577	$ 6,647
Accumulated other comprehensive loss (income), net of tax	$ 28,613	$ (18,546)	$ (363)

(1) The following table reconciles cash, cash equivalents and restricted cash per the statement of cash flows to the balance sheet. The restricted cash balances are primarily due to letters of credit which have been issued to the landlords of leased office space. The terms of the letters of credit primarily extend beyond one year.

	December 31, 2018	December 31, 2017	December 31, 2017	December 31, 2016
Cash and cash equivalents	$ 54,431	$ 69,022	$ 213,939	$ 111,838
Restricted cash included in Prepaid expenses and other current assets	150	244	—	—
Restricted cash included in Other long-term assets	10,789	10,108	9,889	9,889
Total cash, cash equivalents and restricted cash at end of period	$ 65,370	$ 79,374	$ 223,828	$ 121,727

See accompanying notes to the consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
(a wholly-owned subsidiary of Sirius XM Holdings Inc.)
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollars and shares in thousands, except per share amounts)

(1) Business & Basis of Presentation

Business

We transmit music, sports, entertainment, comedy, talk, news, traffic and weather channels, as well as infotainment services, in the United States on a subscription fee basis through our two proprietary satellite radio systems. We also transmit a larger set of music and other channels and video programming through our streaming service. Our streaming service is available online and through applications for mobile devices, home devices and other consumer electronic equipment. We also provide connected vehicle services. Our connected vehicle services are designed to enhance the safety, security and driving experience for vehicle operators while providing marketing and operational benefits to automakers and their dealers.

We have agreements with every major automaker ("OEMs") to offer satellite radio in their vehicles, through which we acquire the majority of our subscribers. We also acquire subscribers through marketing to owners and lessees of used vehicles that include factory-installed satellite radios that are not currently subscribing to our services. Our satellite radios are primarily distributed through automakers, retailers, and our website. Satellite radio services are also offered to customers of certain rental car companies.

Our primary source of revenue is subscription fees, with most of our customers subscribing to monthly, quarterly, semi-annual or annual plans. We offer discounts for prepaid subscription plans, as well as a multiple subscription discount. We also derive revenue from certain fees, the sale of advertising on select non-music channels, the direct sale of satellite radios and accessories, and other ancillary services, such as our weather, traffic and data services.

In many cases, a subscription to our radio services is included with the purchase or lease of new or previously owned vehicles. The length of these subscriptions varies but is typically three to twelve months. We receive payments for these subscriptions from certain automakers. We also reimburse various automakers for certain costs associated with satellite radios installed in new vehicles and pay revenue share to various automakers.

On September 23, 2018, Holdings entered into an agreement to acquire Pandora Media, Inc. ("Pandora") in an all-stock transaction initially valued at $3.5 billion. In connection with the acquisition, each outstanding share of Pandora common stock, par value $0.0001 per share, will be converted into the right to receive 1.44 shares of Holdings common stock, par value $0.001 per share. The transaction is conditioned upon the vote of holders of a majority of the combined voting power of the outstanding shares of Pandora common stock and the outstanding shares of Pandora's Series A Preferred Stock, voting together as a single class, in favor of the adoption of the merger agreement. In addition, the completion of the transaction is subject to other customary conditions, including, among others, the absence of any law or order that prohibits or makes illegal the merger and subject to certain exceptions, the accuracy of the representations and warranties of each party and compliance by the parties with their respective covenants. The transaction is expected to close in the first quarter of 2019. Refer to Note 10 for more information on this transaction.

As of December 31, 2018, Liberty Media Corporation ("Liberty Media") beneficially owned, directly and indirectly, approximately 73% of the outstanding shares of Holdings' common stock. As a result, Holdings is a "controlled company" for the purposes of the NASDAQ corporate governance requirements.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). All significant intercompany transactions have been eliminated in consolidation. Certain numbers in our prior period consolidated financial statements and footnotes have been reclassified or consolidated to conform to our current period presentation.

The consolidated financial statements for Sirius XM for the fiscal year ended December 31, 2018 are essentially identical to the consolidated financial statements included in Holdings' Form 10-K for the annual period ended December 31, 2018, filed with the SEC on January 30, 2019, with the following exceptions:

- As a result of our corporate reorganization effective November 15, 2013, all of the outstanding shares of Sirius XM's common stock were converted, on a share for share basis, into identical shares of common stock of Holdings and all equity-related transactions, including repurchases of Holdings' common stock, dividend payments on shares of Holdings' common stock, the issuance of equity related to stock-based compensation to Sirius XM employees, Holdings' directors and third parties and the issuance of Holdings' common stock related to the recapitalization of Sirius XM Canada have been reported as related party transactions within Sirius XM's consolidated financial statements. Refer to Note 10 for additional information related to related party transactions.

(Dollars and shares in thousands, except per share amounts)

This Annual Report should be read together with Holdings' Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on January 30, 2019.

Public companies, including our parent Holdings, are required to disclose certain information about their reportable operating segments. Operating segments are defined as significant components of an enterprise for which separate financial information is available and is evaluated on a regular basis by the chief operating decision maker in deciding how to allocate resources to an individual segment and in assessing performance of the segment. We have determined that we have one reportable segment as our chief operating decision maker, our Chief Executive Officer, assesses performance and allocates resources based on the consolidated results of operations of our business.

We have evaluated events subsequent to the balance sheet date and prior to the furnishing of this Annual Report for the year ended December 31, 2018 and have determined that no events have occurred that would require adjustment to our consolidated financial statements. For a discussion of subsequent events that do not require adjustment to our consolidated financial statements refer to Note 16.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and footnotes. Estimates, by their nature, are based on judgment and available information. Actual results could differ materially from those estimates. Significant estimates inherent in the preparation of the accompanying consolidated financial statements include asset impairment, depreciable lives of our satellites, share-based payment expense, and income taxes.

(2) Acquisition

On April 18, 2017, Sirius XM acquired Automatic Labs Inc. ("Automatic"), a connected vehicle device and mobile application company, for an aggregate purchase price of $107,736, net of cash and restricted cash acquired of $819. The transaction was accounted for using the acquisition method of accounting. No purchase price adjustments were recorded during the year ended December 31, 2018. As of December 31, 2018, the Goodwill balance associated with the acquisition was $81,475.

(3) Summary of Significant Accounting Policies

In addition to the significant accounting policies discussed in this Note 3, the following table includes our significant accounting policies that are described in other notes to our consolidated financial statements, including the number and page of the note:

Significant Accounting Policy	Note #	Page #
Fair Value Measurements	4	F-14
Goodwill	7	F-15
Intangible Assets	8	F-16
Property and Equipment	9	F-17
Equity Method Investments	10	F-19
Share-Based Compensation	13	F-24
Legal Reserves	14	F-27
Income Taxes	15	F-29

Cash and Cash Equivalents

Our cash and cash equivalents consist of cash on hand, money market funds, certificates of deposit, in-transit credit card receipts and highly liquid investments purchased with an original maturity of three months or less.

Revenue Recognition

Revenue is measured according to Accounting Standards Codification ("ASC") 606, *Revenue - Revenue from Contracts with Customers*, and is recognized based on consideration specified in a contract with a customer, and excludes any sales incentives and amounts collected on behalf of third parties. We recognize revenue when it satisfies a performance obligation by transferring control over a service or product to a customer. We report revenues net of any tax assessed by a governmental authority that is both imposed on, and concurrent with, a specific revenue-producing transaction between a seller and a customer in our consolidated statements of comprehensive income. For equipment sales, we are responsible for arranging for shipping and handling. Shipping and handling costs billed to customers are recorded as revenue and are reported as a component of Cost of equipment.

The following is a description of the principal activities from which we generate our revenue, including from self-pay and paid promotional subscribers, advertising, and sales of equipment.

Subscriber revenue consists primarily of subscription fees and other ancillary subscription based revenues. Revenue is recognized on a straight line basis when the performance obligations to provide each service for the period are satisfied, which is over time as our subscription services are continuously transmitted and can be consumed by customers at any time. Consumers purchasing or leasing a vehicle with a factory-installed satellite radio typically receive between a three and twelve month subscription to our service. In certain cases, the subscription fees for these consumers are prepaid by the applicable automaker. Prepaid subscription fees received from automakers or directly from consumers are recorded as deferred revenue and amortized to revenue ratably over the service period which commences upon sale. Activation fees are recognized over one month as the activation fees are non-refundable and do not provide for a material right to the customer. There is no revenue recognized for unpaid trial subscriptions. In some cases we pay a loyalty fee to the OEM when we receive a certain amount of payments from self-pay customers acquired from that OEM. These fees are considered incremental costs to obtain a contract and are, therefore, recognized as an asset and amortized to Subscriber acquisition costs over an average subscriber life. Revenue share and loyalty fees paid to an OEM offering a paid trial are accounted for as a reduction of revenue as the payment does not provide a distinct good or service.

We recognize revenue from the sale of advertising as performance obligations are satisfied upon airing of the advertising; therefore, revenue is recognized at a point in time when each advertising spot is transmitted. Agency fees are calculated based on a stated percentage applied to gross billing revenue for our advertising inventory and are reported as a reduction of advertising revenue. Additionally, we pay certain third parties a percentage of advertising revenue. Advertising revenue is recorded gross of such revenue share payments as we control the advertising service, including the ability to establish pricing, and we are primarily responsible for providing the service. Advertising revenue share payments are recorded to Revenue share and royalties during the period in which the advertising is transmitted.

Equipment revenue and royalties from the sale of satellite radios, components and accessories are recognized when the performance obligation is satisfied and control is transferred, which is generally upon shipment. Revenue is recognized net of discounts and rebates. Shipping and handling costs billed to customers are recorded as revenue. Shipping and handling costs associated with shipping goods to customers are reported as a component of Cost of equipment.

Music royalty fee and other revenue primarily consists of U.S. music royalty fees ("MRF") collected from subscribers. The related costs we incur for the right to broadcast music and other programming are recorded as Revenue share and royalties expense. Fees received from subscribers for the MRF are recorded as deferred revenue and amortized to revenue ratably over the service period as the royalties relate to the subscription services which are continuously delivered to our customers.

Customers pay for the services in advance of the performance obligation and therefore these prepayments are recorded as deferred revenue. The deferred revenue is recognized as revenue in our consolidated statement of comprehensive income as the services are provided. Changes in the deferred revenue balance during the period ended December 31, 2018 was not materially impacted by other factors.

As the majority of our contracts are one year or less, we have utilized the optional exemption under ASC 606-10-50-14 and will not disclose information about the remaining performance obligations for contracts which have original expected durations of one year or less. As of December 31, 2018, less than ten percent of our total deferred revenue balance related to contracts that extended beyond one year. These contracts primarily include prepaid data trials which are typically provided for three to five years as well as for self-pay customers who prepay for their audio subscriptions for up to three years in advance. These amounts are recognized on a straight-line basis as our services are provided.

Revenue Share

We share a portion of our subscription revenues earned from self-pay subscribers with certain automakers. The terms of the revenue share agreements vary with each automaker, but are typically based upon the earned audio revenue as reported or gross billed audio revenue.

Programming Costs

Programming costs which are for a specified number of events are amortized on an event-by-event basis; programming costs which are for a specified season or include programming through a dedicated channel are amortized over the season or period on a straight-line basis. We allocate a portion of certain programming costs which are related to sponsorship and marketing activities to Sales and marketing expense on a straight-line basis over the term of the agreement.

Advertising Costs

Media is expensed when aired and advertising production costs are expensed as incurred. Advertising production costs include expenses related to marketing and retention activities, including expenses related to direct mail, outbound telemarketing and email communications. We also incur advertising production costs related to cooperative marketing and promotional events and sponsorships. During the years ended December 31, 2018, 2017 and 2016, we recorded advertising costs of $266,935, $262,701 and $226,969, respectively. These costs are reflected in Sales and marketing expense in our consolidated statements of comprehensive income.

Subscriber Acquisition Costs

Subscriber acquisition costs consist of costs incurred to acquire new subscribers which include hardware subsidies paid to radio manufacturers, distributors and automakers, including subsidies paid to automakers who include a satellite radio and a prepaid subscription to our service in the sale or lease price of a new vehicle; subsidies paid for chipsets and certain other components used in manufacturing radios; device royalties for certain radios and chipsets; commissions paid to retailers and automakers as incentives to purchase, install and activate radios; product warranty obligations; freight; and provisions for inventory allowance attributable to inventory consumed in our OEM and retail distribution channels. Subscriber acquisition costs do not include advertising costs, loyalty payments to distributors and dealers of radios and revenue share payments to automakers and retailers of radios.

Subsidies paid to radio manufacturers and automakers are expensed upon installation, shipment, receipt of product or activation and are included in Subscriber acquisition costs because we are responsible for providing the service to the customers. Commissions paid to retailers and automakers are expensed upon either the sale or activation of radios. Chipsets that are shipped to radio manufacturers and held on consignment are recorded as inventory and expensed as Subscriber acquisition costs when placed into production by radio manufacturers. Costs for chipsets not held on consignment are expensed as Subscriber acquisition costs when the automaker confirms receipt.

Research & Development Costs

Research and development costs are expensed as incurred and primarily include the cost of new product development, chipset design, software development and engineering. During the years ended December 31, 2018, 2017 and 2016, we recorded research and development costs of $105,975, $96,917 and $69,025, respectively. These costs are reported as a component of Engineering, design and development expense in our consolidated statements of comprehensive income.

Accumulated Other Comprehensive (Loss) Income, net of tax

Accumulated other comprehensive loss of $6,193 was primarily comprised of the cumulative foreign currency translation adjustments related to Sirius XM Canada (refer to Note 10 for additional information). During the year ended December 31, 2018, we recorded a foreign currency translation adjustment loss of $28,613, which is recorded net of tax of $9,451. In addition, we reclassified stranded tax effects of $4,013 related to the adoption of Accounting Standards Update ("ASU") 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. During the years ended December 31, 2017 and 2016, we recorded foreign currency translation adjustment gains of $18,546 and $363, respectively, net of tax.

Recent Accounting Pronouncements

In August 2018, the Financial Accounting Standards Board ("FASB") issued ASU 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*. The amendments in this ASU align the requirements for capitalizing implementation costs incurred in a hosting arrangement with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The implementation costs incurred in a hosting arrangement that is a service contract should be presented as a prepaid asset in the balance sheet and expensed over the term of the hosting arrangement to the same line item in the statement of income as the costs related to the hosting fees. The guidance in this ASU is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years, and early adoption is permitted including adoption in any interim period. The amendments should be applied either retrospectively or prospectively to all implementation costs incurred after adoption. This ASU will not have a material impact on our consolidated statements of operations.

In February 2016, FASB issued ASU 2016-02, *Leases (Topic 842)*. This ASU requires a company to recognize lease assets and liabilities arising from operating leases in the statement of financial position. This ASU does not significantly change the previous lease guidance for how a lessee should recognize the recognition, measurement, and presentation of expenses and cash flows arising from a lease. Additionally, the criteria for classifying a finance lease versus an operating lease are substantially the same as the previous guidance. This ASU is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and early adoption is permitted. In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842) Targeted Improvements*, amending certain aspects of the new leasing standard. The amendment allows an additional optional transition method whereby an entity records a cumulative effect adjustment to opening retained earnings in the year of adoption without restating prior periods. We will adopt this ASU on January 1, 2019 and elected the additional transition method and do not expect to record a cumulative effect adjustment to opening Accumulated deficit. Our leases consist of repeater leases, facility leases and equipment leases. We expect the adoption of ASU 2016-02 will result in the recognition of right-of-use assets of approximately $360,000 and lease liabilities of approximately $370,000 in our consolidated balance sheets for operating leases and will not impact our consolidated statements of operations or our debt.

Recently Adopted Accounting Policies

ASU 2014-09, Revenue - Revenue from Contracts with Customers. In May 2014, the FASB issued ASU 2014-09 which requires entities to recognize revenues when control of the promised goods or services is transferred to customers at an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. In addition, the standard requires disclosure of the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. We adopted ASU 2014-09, and all related amendments, which established ASC Topic 606 (the "new revenue standard"), effective as of January 1, 2018. We adopted the new revenue standard using the modified retrospective method by recognizing the cumulative effect of initially applying the new revenue standard to all non-completed contracts as of January 1, 2018 as an adjustment to opening Accumulated deficit in the period of adoption. Results for reporting periods beginning after January 1, 2018 are presented under the new revenue standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting under Topic 605.

The new revenue standard primarily impacts how we account for revenue share payments and also has other immaterial impacts.

Revenue Share - Paid Trials

We previously recorded revenue share related to paid trials as Revenue share and royalties expense. Under the new revenue standard, we have recorded these revenue share payments as a reduction to revenue as the payments do not transfer a distinct good or service to us. Prior to the adoption, we recognized revenue share related to paid trial subscriptions as the Current portion of deferred revenue. Under the new revenue standard, we reclassified the revenue share related to paid trial subscriptions existing as of the date of adoption from Current portion of deferred revenue to Accounts payable and accrued expenses. For new paid trial subscriptions, the net amount of the paid trial subscription is recorded as deferred revenue and the portion of revenue share is recorded to Accounts payable and accrued expenses.

Other Impacts

Other impacts of the new revenue standard include:

- Activation fees were previously recognized over the expected subscriber life using the straight-line method. Under the new revenue standard, activation fees have been recognized over a one month period from activation as the activation fees are non-refundable and they do not convey a material right. As of January 1, 2018, we reduced deferred revenue related to activation fees of $8,260, net of tax, to Accumulated deficit.

- Loyalty payments to OEMs were previously expensed when incurred as Subscriber acquisition costs. Under the new revenue standard, these costs have been capitalized in Prepaid expenses and other current assets as costs to obtain a contract and these costs will be amortized to Subscriber acquisition costs over an average self-pay subscriber life of that OEM. As of January 1, 2018, we capitalized previously expensed loyalty payments of $10,156, net of tax, to Prepaid expenses and other current assets by reducing Accumulated deficit.

These changes do not have a material impact to our financial statements.

ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. In February 2018, the FASB issued ASU 2018-02 to amend its standard on comprehensive income to provide an option for an entity to reclassify the stranded tax effects of the Tax Cuts and Jobs Act (the "Tax Act") that was passed in December 2017 from accumulated other comprehensive income ("AOCI") directly to retained earnings. The stranded tax effects result from the remeasurement of deferred tax assets and liabilities which were originally recorded in comprehensive income but whose remeasurement is reflected in the income statement. The guidance is effective for interim and fiscal years beginning after December 15, 2018, with early adoption permitted. We elected to adopt ASU 2018-02 effective January 1, 2018 and reclassified the stranded tax effects due to the Tax Act of $4,013 related to the currency translation adjustment from our investment balance and note receivable with Sirius XM Canada from AOCI to Accumulated deficit. The adoption did not have any impact on our consolidated statement of comprehensive income.

ASU 2018-07, Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting. In June 2018, the FASB issued ASU 2018-07 which simplifies the accounting for share-based payments made to nonemployees so that the accounting for such payments is substantially the same as those made to employees, with certain exceptions. Under this ASU, equity-classified share based awards to nonemployees will be measured at fair value on the grant date of the awards, entities will need to assess the probability of satisfying performance conditions if any are present, and awards will continue to be classified according to ASC 718 upon vesting which eliminates the need to reassess classification upon vesting, consistent with awards granted to employees, unless the award is modified after the service has been rendered, any other conditions necessary to earn the right to benefit from the instruments have been satisfied, and the nonemployee is no longer providing services. The guidance is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and early adoption is permitted. We elected to early adopt ASU 2018-07 effective July 1, 2018 and remeasured our unsettled liability-classified nonemployee awards at their January 1, 2018 fair value by recording a retrospective cumulative effect adjustment to opening Accumulated deficit and reclassified our previously liability-classified awards to equity.

(Dollars and shares in thousands, except per share amounts)

The cumulative effects of the changes made to our consolidated balance sheet as of January 1, 2018 for the adoption of ASU 2014-09, ASU 2018-02 and ASU 2018-07 are included in the table below.

	Balance at December 31, 2017	Adjustments Due to ASU 2014-09	Adjustments Due to ASU 2018-02	Adjustments Due to ASU 2018-07	Balance at January 1, 2018
Balance Sheet					
Assets					
Prepaid expenses and other current assets	$ 129,669	$ 8,262	$ —	$ —	$ 137,931
Other long-term assets	118,671	2,576	—	—	121,247
Deferred tax assets	505,528	(5,915)	—	—	499,613
Related party long-term assets	7,522,007	—	—	(4,132)	7,517,875
Liabilities:					
Accounts payable and accrued expenses	768,077	32,399	—	—	800,476
Current portion of deferred revenue	1,881,825	(41,902)	—	—	1,839,923
Long-term deferred revenue	174,579	(3,990)	—	—	170,589
Equity:					
Accumulated deficit	(3,635,628)	18,416	(4,013)	(4,132)	(3,625,357)
AOCI, net of tax	18,407	—	4,013	—	22,420

The following tables illustrate the impacts of adopting ASU 2014-09 on our consolidated statement of comprehensive income.

	For the Year Ended December 31, 2018		
	As Reported	Impact of Adopting ASU 2014-09	Balances Without Adoption of ASU 2014-09
Income Statement			
Revenues			
Subscriber revenue	$ 4,593,803	$ 94,767	$ 4,688,570
Expenses			
Revenue share and royalties	1,393,842	88,122	1,481,964
Subscriber acquisition costs	470,336	3,540	473,876
Income tax expense	(244,681)	(534)	(245,215)
Net Income	$ 1,175,893	$ 2,571	$ 1,178,464

ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*. This ASU updates the guidance related to the statement of cash flows and requires that the statement includes restricted cash with cash and cash equivalents when reconciling beginning and ending cash. The guidance was effective for fiscal years beginning after December 15, 2017, including interim periods within that reporting period. We adopted this ASU effective January 1, 2018. As a result of the adoption, we have added restricted cash to the reconciliation of beginning and ending cash and cash equivalents and included a reconciliation of total cash, cash equivalents and restricted cash to the balance sheet for each period presented in the consolidated statements of cash flows.

(Dollars and shares in thousands, except per share amounts)

ASU 2016-09, Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. We elected to early adopt this ASU in the third quarter of 2016, which required that any adjustments be reflected as of January 1, 2016, the beginning of the annual period that includes the interim period of adoption. The areas for simplification in this ASU involve several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, forfeiture calculations, and classification on the statement of cash flows. The primary impact of adoption of ASU 2016-09 was the recognition of excess tax benefits in our provision for income taxes.

Additionally, we recognized net operating losses related to excess share-based compensation tax return deductions that were previously tracked off balance sheet but not recorded in our financial statements. As of January 1, 2016, $293,896, net of a $1,946 reserve for an uncertain tax position, was recorded as an increase to our Deferred tax assets and decrease to our Accumulated deficit in our consolidated balance sheets as a result of the cumulative effect of this change in accounting principle.

(4) Fair Value Measurements

The fair value of a financial instrument is the amount at which the instrument could be exchanged in an orderly transaction between market participants. As of December 31, 2018 and 2017, the carrying amounts of cash and cash equivalents, receivables, and accounts payable approximated fair value due to the short-term nature of these instruments. ASC 820, *Fair Value Measurements and Disclosures*, establishes a fair value hierarchy for input into valuation techniques as follows:

i. Level 1 input: unadjusted quoted prices in active markets for identical instrument;

ii. Level 2 input: observable market data for the same or similar instrument but not Level 1, including quoted prices for identical or similar assets or liabilities in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

iii. Level 3 input: unobservable inputs developed using management's assumptions about the inputs used for pricing the asset or liability.

Investments are periodically reviewed for impairment and an impairment is recorded whenever declines in fair value below carrying value are determined to be other than temporary. In making this determination, we consider, among other factors, the severity and duration of the decline as well as the likelihood of a recovery within a reasonable timeframe.

Our assets and liabilities measured at fair value were as follows:

	December 31, 2018				December 31, 2017			
	Level 1	Level 2	Level 3	Total Fair Value	Level 1	Level 2	Level 3	Total Fair Value
Assets:								
Pandora investment [a]	—	$ 523,089	—	$ 523,089	—	$ 480,472	—	$ 480,472
Liabilities:								
Debt [b]	—	$6,632,505	—	$6,632,505	—	$6,987,473	—	$6,987,473

(a) During the year ended December 31, 2017, Sirius XM completed a $480,000 investment in Pandora. We have elected the fair value option to account for this investment. Refer to Note 10 for information on this transaction.

(b) The fair value for non-publicly traded instruments is based upon estimates from a market maker and brokerage firm. Refer to Note 11 for information related to the carrying value of our debt as of December 31, 2018 and 2017.

(5) Receivables, net

Receivables, net, includes customer accounts receivable, receivables from distributors and other receivables.

Customer accounts receivable, net, includes receivables from our subscribers and other customers, including advertising, and is stated at amounts due, net of an allowance for doubtful accounts. Our allowance for doubtful accounts is based upon our assessment of various factors. We consider historical experience, the age of the receivable balances, current economic conditions and other factors that may affect the counterparty’s ability to pay. Bad debt expense is included in Customer service and billing expense in our consolidated statements of comprehensive income.

(Dollars and shares in thousands, except per share amounts)

Receivables from distributors primarily include billed and unbilled amounts due from OEMs for services included in the sale or lease price of vehicles, as well as billed amounts due from wholesale distributors of our satellite radios. Other receivables primarily include amounts due from manufacturers of our radios, modules and chipsets where we are entitled to subsidies and royalties based on the number of units produced. We have not established an allowance for doubtful accounts for our receivables from distributors or other receivables as we have historically not experienced any significant collection issues with OEMs or other third parties.

Receivables, net, consists of the following:

	December 31, 2018	December 31, 2017
Gross customer accounts receivable	$ 104,604	$ 100,342
Allowance for doubtful accounts	(6,618)	(9,500)
Customer accounts receivable, net	$ 97,986	$ 90,842
Receivables from distributors	107,251	121,410
Other receivables	27,749	29,475
Total receivables, net	$ 232,986	$ 241,727

(6) Inventory, net

Inventory consists of finished goods, refurbished goods, chipsets and other raw material components used in manufacturing radios and connected vehicle devices. Inventory is stated at the lower of cost or market. We record an estimated allowance for inventory that is considered slow moving or obsolete or whose carrying value is in excess of net realizable value. The provision related to products purchased for resale in our direct to consumer distribution channel and components held for resale by us is reported as a component of Cost of equipment in our consolidated statements of comprehensive income. The provision related to inventory consumed in our OEM channel is reported as a component of Subscriber acquisition costs in our consolidated statements of comprehensive income.

Inventory, net, consists of the following:

	December 31, 2018	December 31, 2017
Raw materials	$ 4,854	$ 6,489
Finished goods	23,056	21,225
Allowance for obsolescence	(5,712)	(7,515)
Total inventory, net	$ 22,198	$ 20,199

(7) Goodwill

Goodwill represents the excess of the purchase price over the estimated fair value of the net tangible and identifiable intangible assets acquired in business combinations. Our annual impairment assessment of our single reporting unit is performed as of the fourth quarter of each year, and an assessment is performed at other times if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. ASC 350, *Intangibles - Goodwill and Other*, states that an entity should perform its annual or interim goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. We performed a qualitative analysis to determine whether it was more likely than not that a goodwill impairment exists. We were not aware of any adverse qualitative factors that would indicate any impairment to our goodwill as of the date of our annual assessment for 2018 and as of December 31, 2018.

We recorded $3,403 to Goodwill related to an immaterial acquisition during the year ended December 31, 2018.

As of December 31, 2018, there were no indicators of impairment, and no impairment losses were recorded for goodwill during the years ended December 31, 2018 and 2017. As of December 31, 2018, the cumulative balance of goodwill impairments recorded since the July 2008 merger between our wholly owned subsidiary, Vernon Merger Corporation, and XM Satellite Radio Holdings Inc. ("XM"), was $4,766,190, which was recognized during the year ended December 31, 2008.

(Dollars and shares in thousands, except per share amounts)

(8) Intangible Assets

Our intangible assets include the following:

	Weighted Average Useful Lives	December 31, 2018			December 31, 2017		
		Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
Indefinite life intangible assets:							
FCC licenses	Indefinite	$ 2,083,654	$ —	$ 2,083,654	$ 2,083,654	$ —	$ 2,083,654
Trademarks	Indefinite	250,800	—	250,800	250,800	—	250,800
Definite life intangible assets:							
Subscriber relationships	9 years	—	—	—	380,000	(380,000)	—
OEM relationships	15 years	220,000	(75,778)	144,222	220,000	(61,111)	158,889
Licensing agreements	12 years	45,289	(38,012)	7,277	45,289	(34,350)	10,939
Software and technology	7 years	35,572	(20,164)	15,408	43,915	(25,351)	18,564
Total intangible assets		$ 2,635,315	$ (133,954)	$ 2,501,361	$ 3,023,658	$ (500,812)	$ 2,522,846

Indefinite Life Intangible Assets

We have identified our FCC licenses and the XM and Automatic trademarks as indefinite life intangible assets after considering the expected use of the assets, the regulatory and economic environment within which they are used and the effects of obsolescence on their use.

We hold FCC licenses to operate our satellite digital audio radio service and provide ancillary services. Each of the FCC licenses authorizes us to use radio spectrum, a reusable resource that does not deplete or exhaust over time.

ASC 350-30-35, *Intangibles - Goodwill and Other*, provides for an option to first perform a qualitative assessment to determine whether it is more likely than not that an asset is impaired. If the qualitative assessment supports that it is more likely than not that the fair value of the asset exceeds its carrying value, a quantitative impairment test is not required. If the qualitative assessment does not support the fair value of the asset, then a quantitative assessment is performed. Our annual impairment assessment of our identifiable indefinite lived intangible assets is performed as of the fourth quarter of each year. An assessment is performed at other times if an event occurs or circumstances change that would more likely than not reduce the fair value of the asset below its carrying value. If the carrying value of the intangible assets exceeds its fair value, an impairment loss is recognized in an amount equal to that excess.

We completed qualitative assessments of our FCC licenses and XM and, to the extent applicable, Automatic trademarks during the fourth quarter of 2018, 2017 and 2016. As of the date of our annual assessment for 2018, 2017 and 2016, our qualitative impairment assessment of the fair value of our indefinite intangible assets indicated that such assets substantially exceeded their carrying value and therefore was not at risk of impairment. No impairments were recorded for intangible assets with indefinite lives during the years ended December 31, 2018, 2017 and 2016.

Definite Life Intangible Assets

Definite-lived intangible assets are amortized over their respective estimated useful lives to their estimated residual values, in a pattern that reflects when the economic benefits will be consumed, and are reviewed for impairment under the provisions of ASC 360-10-35, *Property, Plant and Equipment/Overall/Subsequent Measurement*. We review intangible assets subject to amortization for impairment whenever events or circumstances indicate that the carrying amount of an asset may not be recoverable. If the sum of the expected cash flows, undiscounted and without interest, is less than the carrying amount of the asset, an impairment loss is recognized in an amount by which the carrying amount of the asset exceeds its fair value. No impairments were recorded for intangible assets with definite lives during the years ended December 31, 2018, 2017 and 2016.

(Dollars and shares in thousands, except per share amounts)

Amortization expense for all definite life intangible assets was $23,185, $37,455 and $48,545 for the years ended December 31, 2018, 2017 and 2016, respectively. We retired definite lived intangible assets of $390,043 during the year ended December 31, 2018 primarily related to fully amortized subscriber relationships and acquired proprietary software. There were no retirements of definite lived intangible assets during the years ended December 31, 2017 and 2016. The expected amortization expense for each of the fiscal years 2019 through 2023 and for periods thereafter is as follows:

Years ending December 31,	Amount
2019	$ 23,268
2020	22,687
2021	17,198
2022	15,542
2023	15,446
Thereafter	72,766
Total definite life intangible assets, net	$ 166,907

(9) Property and Equipment

Property and equipment, including satellites, are stated at cost, less accumulated depreciation. Equipment under capital leases is stated at the present value of minimum lease payments. Depreciation is calculated using the straight-line method over the following estimated useful life of the asset:

Satellite system	15 years
Terrestrial repeater network	5 - 15 years
Broadcast studio equipment	3 - 15 years
Capitalized software and hardware	2 - 7 years
Satellite telemetry, tracking and control facilities	3 - 15 years
Furniture, fixtures, equipment and other	2 - 7 years
Building	20 or 30 years
Leasehold improvements	Lesser of useful life or remaining lease term

We review long-lived assets, such as property and equipment, for impairment whenever events or changes in circumstances indicate the carrying amount may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds the estimated future cash flows, an impairment charge is recognized in an amount by which the carrying amount exceeds the fair value of the asset. We did not record any impairments during the years ended December 31, 2018, 2017 and 2016.

(Dollars and shares in thousands, except per share amounts)

Property and equipment, net, consists of the following:

	December 31, 2018	December 31, 2017
Satellite system	$ 1,586,794	$ 1,586,794
Terrestrial repeater network	98,093	123,254
Leasehold improvements	58,447	57,635
Broadcast studio equipment	111,031	96,582
Capitalized software and hardware	824,345	639,516
Satellite telemetry, tracking and control facilities	75,837	69,147
Furniture, fixtures, equipment and other	97,078	96,965
Land	38,411	38,411
Building	62,649	61,824
Construction in progress	411,503	301,153
Total property and equipment	3,364,188	3,071,281
Accumulated depreciation and amortization	(1,851,323)	(1,608,515)
Property and equipment, net	$ 1,512,865	$ 1,462,766

Construction in progress consists of the following:

	December 31, 2018	December 31, 2017
Satellite system	$ 296,281	$ 183,243
Terrestrial repeater network	4,388	2,515
Capitalized software and hardware	76,980	94,456
Other	33,854	20,939
Construction in progress	$ 411,503	$ 301,153

Depreciation and amortization expense on property and equipment was $277,535, $261,147, and $220,434 for the years ended December 31, 2018, 2017 and 2016, respectively. We retired property and equipment of $35,122, $78,559 and $843,129 during the years ended December 31, 2018, 2017 and 2016, respectively, which included approximately $801,206 related to satellites during 2016. We recognized a loss on disposal of assets of $12,912, which was recorded in Satellite and transmission expense in our consolidated statements of comprehensive income, during the year ended December 31, 2016, which related to the disposal of certain obsolete spare parts for a future satellite.

We capitalize a portion of the interest on funds borrowed to finance the construction and launch of our satellites. Capitalized interest is recorded as part of the asset's cost and depreciated over the satellite's useful life. Capitalized interest costs were $11,864, $4,948 and $419 for the years ended December 31, 2018, 2017 and 2016, respectively, which related to the construction of our SXM-7 and SXM-8 satellites.

(Dollars and shares in thousands, except per share amounts)

Satellites

As of December 31, 2018, we owned a fleet of five satellites. The chart below provides certain information on our satellites as of December 31, 2018:

Satellite Description	Year Delivered	Estimated End of Depreciable Life
SIRIUS FM-5	2009	2024
SIRIUS FM-6	2013	2028
XM-3	2005	2020
XM-4	2006	2021
XM-5	2010	2025

Each satellite requires an FCC license and prior to the expiration of each license, we are required to apply for a renewal of the FCC satellite licenses. The renewal and extension of our licenses is reasonably certain at minimal cost, which is expensed as incurred.

The following table outlines the years in which each of our satellite licenses expires:

FCC satellite licenses	Expiration year
SIRIUS FM-5	2025
SIRIUS FM-6	2022
XM-3	2021
XM-4	2022
XM-5	2026

(10) Related Party Transactions

In the normal course of business, we enter into transactions with related parties such as Liberty Media, Sirius XM Canada and Pandora.

Liberty Media

As of December 31, 2018, Liberty Media beneficially owned, directly and indirectly, approximately 73% of the outstanding shares of our common stock. Liberty Media has two executives and one of its directors on our board of directors. Gregory B. Maffei, the President and Chief Executive Officer of Liberty Media, is the Chairman of our board of directors.

Sirius XM Holdings

Sirius XM is a wholly-owned subsidiary of Holdings. Holdings has no operations independent of Sirius XM. All equity-related transactions, including repurchases of Holdings' common stock, dividend payments on shares of Holdings' common stock, the issuance of equity related to stock-based compensation for Sirius XM employees, Holdings' directors and third parties and the issuance of Holdings' common stock related to the recapitalization of Sirius XM Canada have been reported as related party transactions within our consolidated financial statements. The stock-based compensation for Sirius XM employees, Holdings' directors and third parties has been recorded in our consolidated financial statements. The Related party long-term assets balance as of December 31, 2018 and December 31, 2017 of Sirius XM includes $8,040,802 and $6,559,927, respectively, primarily for net amounts due from Holdings in connection with these equity-related transactions.

(Dollars and shares in thousands, except per share amounts)

During the year ended December 31, 2018, we used $1,515,720 of our cash for the purchase and retirement of shares of Holdings' common stock under Holdings' repurchase program and payment of a cash dividend on Holdings' common stock. This amount is included in our Related party long-term asset balance as a receivable due from Holdings.

Sirius XM Canada

On May 25, 2017, we completed a recapitalization of Sirius XM Canada (the "Transaction"), which is now a privately held corporation.

Following the Transaction, we hold a 70% equity interest and 33% voting interest in Sirius XM Canada, with the remainder of the voting power and equity interests held by two of Sirius XM Canada's previous shareholders. The total consideration from Sirius XM to Sirius XM Canada, excluding transaction costs, during the year ended December 31, 2017 was $308,526, which included $129,676 in cash and we issued 35,000 shares of our common stock with an aggregate value of $178,850 to the holders of the shares of Sirius XM Canada acquired in the Transaction. Sirius XM received common stock, non-voting common stock and preferred stock of Sirius XM Canada. We own 590,950 shares of preferred stock of Sirius XM Canada, which has a liquidation preference of one Canadian dollar per share.

In connection with the Transaction, we also made a loan to Sirius XM Canada in the aggregate amount of $130,794. The loan is denominated in Canadian dollars and is considered a long-term investment with any unrealized gains or losses reported within Accumulated other comprehensive (loss) income. The loan has a term of fifteen years, bears interest at a rate of 7.62% per annum and includes customary covenants and events of default, including an event of default relating to Sirius XM Canada's failure to maintain specified leverage ratios. The terms of the loan require Sirius XM Canada to prepay a portion of the outstanding principal amount of the loan within sixty days of the end of each fiscal year in an amount equal to any cash on hand in excess of C$10,000 at the last day of the financial year if all target dividends have been paid in full. During the year ended December 31, 2018, Sirius XM Canada repaid $3,242 of the principal amount of the loan.

In connection with the Transaction, we also entered into a Services Agreement and an Advisory Services Agreement with Sirius XM Canada. Each agreement has a thirty year term. Pursuant to the Services Agreement, Sirius XM Canada pays us 25% of its gross revenues on a monthly basis through December 31, 2021 and 30% of its gross revenues on a monthly basis thereafter. Pursuant to the Advisory Services Agreement, Sirius XM Canada pays us 5% of its gross revenues on a monthly basis. These agreements superseded and replaced the former agreements between Sirius XM Canada and its predecessors and us.

Sirius XM Canada is accounted for as an equity method investment, and its results are not consolidated in our consolidated financial statements. Sirius XM Canada does not meet the requirements for consolidation as we do not have the ability to direct the most significant activities that impact Sirius XM Canada's economic performance.

The difference between our investment and our share of the fair value of the underlying net assets of Sirius XM Canada is first allocated to either finite-lived intangibles or indefinite-lived intangibles and the balance is attributed to goodwill. We follow ASC 350, *Intangibles - Goodwill and Other*, which requires that equity method finite-lived intangibles be amortized over their estimated useful life while indefinite-lived intangibles and goodwill are not amortized. The amortization of equity method finite-lived intangible assets is recorded in Other income (expense) in our consolidated statements of comprehensive income. We periodically evaluate our equity method investments to determine if there has been an other-than temporary decline in fair value below carrying value. Equity method finite-lived intangibles, indefinite-lived intangibles and goodwill are included in the carrying amount of the investment.

We had the following related party balances associated with Sirius XM Canada:

	December 31, 2018	December 31, 2017
Related party current assets	$ 10,585	$ 10,284
Related party long-term assets	$ 437,227	$ 481,608
Related party current liabilities	$ 4,335	$ 2,839
Related party long-term liabilities	$ 4,270	$ 7,364

(Dollars and shares in thousands, except per share amounts)

As of December 31, 2018 and 2017, our related party current asset balance included amounts due under the Services Agreement and Advisory Services Agreement and certain amounts related to transactions outside the scope of the new services arrangements. Our related party long-term assets balance as of December 31, 2018 and 2017 included the carrying value of our investment balance in Sirius XM Canada of $311,213 and $341,214, respectively, and, as of December 31, 2018 and 2017, also included $126,013 and $140,073, respectively, for the long-term value of the outstanding loan to Sirius XM Canada. Our related party liabilities as of each of December 31, 2018 and 2017 included $2,776 for the current portion of deferred revenue and $2,312 and $5,088, respectively, for the long-term portion of deferred revenue recorded as of the date of the Sirius and XM merger related to agreements with legacy XM Canada, now Sirius XM Canada. These costs are being amortized on a straight line basis through 2020.

We recorded the following revenue and other income associated with Sirius XM Canada in our consolidated statements of comprehensive income:

	For the Years Ended December 31,		
	2018	2017	2016
Revenue [(a)(b)]	$ 96,960	$ 87,111	$ 45,962
Other income (expense)			
Share of net (loss) earnings [(b)]	$ (804)	$ 4,561	$ 12,529
Dividends [(c)]	$ —	$ —	$ 3,575
Interest income [(d)]	$ 10,302	$ 6,243	$ —

(a) Prior to the Transaction, under our former agreements with Sirius XM Canada, we received a percentage-based fee of 10% and 15% for certain types of subscription revenue earned by Sirius XM Canada for the use of the Sirius and XM platforms, respectively, and additional fees for premium services and fees for activation fees and reimbursements for other charges. We record revenue from Sirius XM Canada as Music royalty fee and other revenue in our consolidated statements of comprehensive income.

(b) Prior to the Transaction, we recognized our proportionate share of revenue and earnings or losses attributable to Sirius XM Canada on a one month lag. As a result of the Transaction, there is no longer a one-month lag and Sirius XM Canada changed its fiscal year-end to December 31 to align with our fiscal year. For the years ended December 31, 2018 and 2017, Share of net (loss) earnings included $2,434 and $1,501, respectively, of amortization expense related to equity method intangible assets.

(c) Sirius XM Canada paid gross dividends to us of $2,240, $3,796, and $7,548 during the years ended December 31, 2018, 2017 and 2016, respectively. Dividends are first recorded as a reduction to our investment balance in Sirius XM Canada to the extent a balance existed and then as Other income (expense) for the remaining portion.

(d) This interest income relates to the loan to Sirius XM Canada and is recorded as Other income (expense) in our consolidated statements of comprehensive income.

Pandora

On September 22, 2017, we completed a $480,000 investment in Pandora in which we purchased 480 shares of Pandora's Series A Convertible Preferred Stock, par value $0.0001 per share (the "Series A Preferred Stock"). As of December 31, 2018, the Series A Preferred Stock, including accrued but unpaid dividends, represents a stake of approximately 18% of Pandora's common stock outstanding and approximately a 15% interest on an as-converted basis. Pandora operates an internet-based music discovery platform, offering a personalized experience for listeners.

The Series A Preferred Stock is convertible at the option of the holders at any time into shares of common stock of Pandora ("Pandora Common Stock") at an initial conversion price of $10.50 per share of Pandora Common Stock and an initial conversion rate of 95.2381 shares of Pandora Common Stock per share of Series A Preferred Stock, subject to certain customary anti-dilution adjustments. Holders of the Series A Preferred Stock are entitled to a cumulative dividend at the rate of 6.0% per annum, payable quarterly in arrears, if and when declared. Pandora has the option to pay dividends in cash or accumulate dividends in lieu of paying cash. Any conversion of Series A Preferred Stock may be settled by Pandora, at its option, in shares of Pandora Common Stock, cash or any combination thereof. However, unless and until Pandora's stockholders have approved the issuance of greater than 19.99% of the outstanding Pandora Common Stock, the Series A Preferred Stock may not be converted into more than 19.99% of Pandora's outstanding Pandora Common Stock as of June 9, 2017. The liquidation preference of the Series A Preferred Stock, including accrued dividends of $40,969, was $520,969 as of December 31, 2018.

As the investment includes a conversion option, we have elected to account for this investment under the fair value option to reduce the accounting asymmetry that would otherwise arise when recognizing the changes in the fair value of available-for-sale investments. Under the fair value option, any gains (losses) associated with the change in fair value will be recognized in Other income within our consolidated statements of comprehensive income. In connection with the acquisition of Pandora, the Series A Preferred Stock will be canceled as part of the proposed transaction. We recognized a $42,617 and $472 unrealized gain during the years ended December 31, 2018 and 2017 as Other income (expense) in our consolidated statements of comprehensive income for this investment. The fair value of our investment in Pandora, including accrued dividends, as of December 31, 2018 and 2017 was $523,089 and $480,472, respectively, and is recorded as a related party long-term asset within our consolidated balance sheets. This investment does not meet the requirements for the equity method of accounting as it does not qualify as in-substance common stock.

On September 23, 2018, Holdings entered into an Agreement and Plan of Merger and Reorganization (the "Merger Agreement"), by and among Holdings, Pandora, Billboard Holding Company, Inc., a wholly-owned subsidiary of Pandora, Billboard Acquisition Sub, Inc., a wholly-owned subsidiary of Billboard Holding Company, Inc., Sirius XM and White Oaks Acquisition Corp., pursuant to which, subject to the terms and conditions of the Merger Agreement, Holdings agreed to acquire Pandora (such transaction, the "Merger"). Pursuant to the Merger, each outstanding share of Pandora Common Stock, will be converted into the right to receive 1.44 shares (the "Exchange Ratio") of Holdings common stock, par value $0.001 per share ("Holdings Common Stock"). In connection with the Merger, the Series A Preferred Stock will be canceled for no consideration.

Further, pursuant to the Merger:

- each option granted by Pandora under its stock incentive plans to purchase shares of Pandora Common Stock, whether vested or unvested will be assumed and converted into an option to purchase shares of Holdings Common Stock, with appropriate adjustments (based on the Exchange Ratio) to the exercise price and number of shares of Holdings Common Stock subject to such option, and will have the same vesting schedule and exercise conditions as in effect as of immediately prior to the closing of the Merger;

- each unvested restricted stock unit granted by Pandora under its stock incentive plans will be assumed and converted into an unvested restricted stock unit of Holdings, with appropriate adjustments (based on the Exchange Ratio) to the number of shares of Holdings Common Stock to be received, and will have the same vesting schedule and settlement date as in effect as of immediately prior to the closing of the Merger; and

- each unvested performance award granted by Pandora under its stock incentive plans shall be canceled and forfeited if the per share value of merger consideration at the closing of the transactions as determined pursuant to the Merger Agreement is less than $20.00, and otherwise each such award will be assumed and converted into a time vesting award to receive a number of shares of Holdings Common Stock based on the Exchange Ratio, and will have the same vesting schedule as in effect as of immediately prior to the closing of the Merger.

The Merger Agreement contains customary representations and warranties from both Holdings and Pandora, and each party has agreed to customary covenants, including covenants relating to the conduct of Holdings' and Pandora's businesses during the period between the execution of the Merger Agreement and the closing of the Merger. In the case of Pandora, such obligations include its agreement to call a meeting of its stockholders to adopt the Merger Agreement, and, subject to certain exceptions, to recommend that its stockholders adopt the Merger Agreement.

The Pandora stockholders voted to adopt the Merger Agreement at a special stockholder meeting on January 29, 2019.

The completion of the Merger is subject to customary conditions, including, among others, the absence of any law or order that prohibits or makes illegal the Merger and, subject to certain exceptions, the accuracy of the representations and warranties of each party and compliance by the parties with their respective covenants.

(Dollars and shares in thousands, except per share amounts)

(11) Debt

Our debt as of December 31, 2018 and 2017 consisted of the following:

Issuer / Borrower	Issued	Debt	Maturity Date	Interest Payable	Principal Amount at December 31, 2018	Carrying value[a] at December 31, 2018	Carrying value[a] at December 31, 2017
Sirius XM (b)	July 2017	3.875% Senior Notes	August 1, 2022	semi-annually on February 1 and August 1	$ 1,000,000	$ 993,628	$ 992,011
Sirius XM (b)	May 2013	4.625% Senior Notes	May 15, 2023	semi-annually on May 15 and November 15	500,000	497,207	496,646
Sirius XM (b)	May 2014	6.00% Senior Notes	July 15, 2024	semi-annually on January 15 and July 15	1,500,000	1,489,539	1,488,002
Sirius XM (b)	March 2015	5.375% Senior Notes	April 15, 2025	semi-annually on April 15 and October 15	1,000,000	992,283	991,285
Sirius XM (b)	May 2016	5.375% Senior Notes	July 15, 2026	semi-annually on January 15 and July 15	1,000,000	991,067	990,138
Sirius XM (b)	July 2017	5.00% Senior Notes	August 1, 2027	semi-annually on February 1 and August 1	1,500,000	1,487,309	1,486,162
Sirius XM (c)	December 2012	Senior Secured Revolving Credit Facility (the "Credit Facility")	June 29, 2023	variable fee paid quarterly	1,750,000	439,000	300,000
Sirius XM	Various	Capital leases	Various	n/a	n/a	5,380	10,597
Total Debt						6,895,413	6,754,841
Less: total current maturities						3,447	5,105
Less: total deferred financing costs for Notes						7,430	8,493
Total long-term debt						$ 6,884,536	$ 6,741,243

(a) The carrying value of the obligations is net of any remaining unamortized original issue discount.
(b) Substantially all of our domestic wholly-owned subsidiaries have guaranteed these notes.
(c) In June 2018, we entered into an amendment to extend the maturity of the Credit Facility to June 2023. Our obligations under the Credit Facility are guaranteed by certain of our material domestic subsidiaries and are secured by a lien on substantially all of our assets and the assets of our material domestic subsidiaries. Interest on borrowings is payable on a monthly basis and accrues at a rate based on LIBOR plus an applicable rate. We are also required to pay a variable fee on the average daily unused portion of the Credit Facility which is payable on a quarterly basis. The variable rate for the unused portion of the Credit Facility was 0.25% per annum as of December 31, 2018. Our outstanding borrowings under the Credit Facility are classified as Long-term debt within our consolidated balance sheets due to the long-term maturity of this debt.

Covenants and Restrictions

Under the Credit Facility, we must comply with a debt maintenance covenant that cannot exceed a total leverage ratio, calculated as consolidated total debt to consolidated operating cash flow, of 5.0 to 1.0. The Credit Facility generally requires compliance with certain covenants that restrict our ability to, among other things, (i) incur additional indebtedness, (ii) incur liens, (iii) pay dividends or make certain other restricted payments, investments or acquisitions, (iv) enter into certain transactions with affiliates, (v) merge or consolidate with another person, (vi) sell, assign, lease or otherwise dispose of all or substantially all of our assets, and (vii) make voluntary prepayments of certain debt, in each case subject to exceptions.

The indentures governing our notes restrict our non-guarantor subsidiaries' ability to create, assume, incur or guarantee additional indebtedness without such non-guarantor subsidiary guaranteeing each such series of notes on a pari passu basis. The indentures governing the notes also contain covenants that, among other things, limit our ability and the ability of our subsidiaries to create certain liens; enter into sale/leaseback transactions; and merge or consolidate.

Under our debt agreements, the following generally constitute an event of default: (i) a default in the payment of interest; (ii) a default in the payment of principal; (iii) failure to comply with covenants; (iv) failure to pay other indebtedness after final maturity or acceleration of other indebtedness exceeding a specified amount; (v) certain events of bankruptcy; (vi) a judgment for payment of money exceeding a specified aggregate amount; and (vii) voidance of subsidiary guarantees, subject to grace periods where applicable. If an event of default occurs and is continuing, our debt could become immediately due and payable.

At December 31, 2018 and 2017, we were in compliance with our debt covenants.

(12) Stockholder Equity

Common Stock, par value $0.001 per share

We are authorized to issue up to 9,000,000 shares of common stock. As of December 31, 2018 and 2017, there were one thousand shares of common stock of Sirius XM issued and outstanding, which were owned by Holdings.

Preferred Stock, par value $0.001 per share

We are authorized to issue up to 50,000 shares of undesignated preferred stock with a liquidation preference of $0.001 per share. There were no shares of preferred stock issued or outstanding as of December 31, 2018 and 2017.

(13) Benefit Plans

We recognized share-based payment expense of $133,175, $124,069 and $108,604 for the years ended December 31, 2018, 2017 and 2016, respectively.

We account for equity instruments granted in accordance with ASC 718, *Compensation - Stock Compensation*. ASC 718 requires all share-based compensation payments to be recognized in the financial statements based on fair value. We use the Black-Scholes-Merton option-pricing model to value stock option awards and have elected to treat awards with graded vesting as a single award. Share-based compensation expense is recognized ratably over the requisite service period, which is generally the vesting period. We measure restricted stock awards and units using the fair market value of the restricted shares of common stock on the day the award is granted. Stock-based awards granted to employees, non-employees and members of our board of directors include stock options and restricted stock units.

Fair value as determined using the Black-Scholes-Merton model varies based on assumptions used for the expected life, expected stock price volatility, expected dividend yield and risk-free interest rates. For the years ended December 31, 2018, 2017 and 2016, we estimated the fair value of awards granted using the hybrid approach for volatility, which weights observable historical volatility and implied volatility of qualifying actively traded options on our common stock. The expected life assumption represents the weighted-average period stock-based awards are expected to remain outstanding. These expected life assumptions are established through a review of historical exercise behavior of stock-based award grants with similar vesting periods. Where historical patterns do not exist for non-employees, contractual terms are used. Dividend yield is based on the current expected annual dividend per share and our stock price. The risk-free interest rate represents the daily treasury yield curve rate at the grant date based on the closing market bid yields on actively traded U.S. treasury securities in the over-the-counter market for the expected term. Our assumptions may change in future periods.

2015 Long-Term Stock Incentive Plan

In May 2015, Holdings' stockholders approved the Sirius XM Holdings Inc. 2015 Long-Term Stock Incentive Plan (the “2015 Plan”). Employees, consultants and members of Holdings' board of directors are eligible to receive awards under the 2015 Plan. The 2015 Plan provides for the grant of stock options, restricted stock awards, restricted stock units and other stock-based awards that the compensation committee of Holdings' board of directors deems appropriate. Stock-based awards granted under the 2015 Plan are generally subject to a graded vesting requirement, which is generally three to four years from the grant date. Stock options generally expire ten years from the date of grant. Restricted stock units include performance-based restricted stock units (“PRSUs”), the vesting of which are subject to the achievement of performance goals and the employee's continued employment and generally cliff vest on the third anniversary of the grant date. Each restricted stock unit entitles the holder to receive one share of common stock upon vesting. As of December 31, 2018, 154,973 shares of common stock were available for future grants under the 2015 Plan.

(Dollars and shares in thousands, except per share amounts)

Other Plans

Holdings maintains two other share-based benefit plans — the Sirius XM Radio Inc. 2009 Long-Term Stock Incentive Plan and the Amended and Restated Sirius Satellite Radio 2003 Long-Term Stock Incentive Plan. Excluding dividend equivalent units granted as a result of a declared dividend, no further awards may be made under these plans.

The following table summarizes the weighted-average assumptions used to compute the fair value of options granted to employees and members of Holdings' board of directors:

	For the Years Ended December 31,		
	2018	2017	2016
Risk-free interest rate	2.7%	1.8%	1.1%
Expected life of options — years	4.38	4.59	4.25
Expected stock price volatility	23%	24%	22%
Expected dividend yield	0.7%	0.7%	0.0%

Since Holdings did not historically pay dividends on our common stock prior to the fourth quarter of 2016, the expected dividend yield used in the Black-Scholes-Merton option-pricing model was less than one tenth percent for the year ended December 31, 2016.

The following table summarizes stock option activity under Holdings' share-based plans for the years ended December 31, 2018, 2017 and 2016:

	Options	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at the beginning of January 1, 2016	338,481	$ 3.29		
Granted	55,222	$ 4.14		
Exercised	(50,728)	$ 2.66		
Forfeited, cancelled or expired	(10,327)	$ 4.30		
Outstanding as of December 31, 2016	332,648	$ 3.50		
Granted	27,339	$ 5.49		
Exercised	(73,296)	$ 3.21		
Forfeited, cancelled or expired	(6,234)	$ 4.07		
Outstanding as of December 31, 2017	280,457	$ 3.76		
Granted	31,704	$ 6.59		
Exercised	(64,631)	$ 3.35		
Forfeited, cancelled or expired	(4,128)	$ 4.76		
Outstanding as of December 31, 2018	243,402	$ 4.22	6.32	$ 391,868
Exercisable as of December 31, 2018	143,804	$ 3.60	5.40	$ 303,266

The weighted average grant date fair value per share of stock options granted during the years ended December 31, 2018, 2017 and 2016 was $1.45, $1.17 and $0.81, respectively. The total intrinsic value of stock options exercised during the years ended December 31, 2018, 2017 and 2016 was $214,705, $166,517 and $81,204, respectively.

We recognized share-based payment expense associated with stock options of $67,158, $78,491 and $80,266 for the years ended December 31, 2018, 2017 and 2016, respectively.

(Dollars and shares in thousands, except per share amounts)

The following table summarizes the restricted stock unit, including PRSU, activity under our share-based plans for the years ended December 31, 2018, 2017 and 2016:

	Shares	Grant Date Fair Value Per Share
Nonvested at the beginning of January 1, 2016	16,088	$ 3.73
Granted	18,523	$ 4.21
Vested	(4,212)	$ 3.68
Forfeited	(506)	$ 3.75
Nonvested as of December 31, 2016	29,893	$ 4.03
Granted	11,721	$ 5.35
Vested	(8,842)	$ 3.92
Forfeited	(1,449)	$ 4.42
Nonvested as of December 31, 2017	31,323	$ 4.54
Granted	17,475	$ 6.40
Vested	(12,775)	$ 4.43
Forfeited	(1,415)	$ 4.99
Nonvested as of December 31, 2018	34,608	$ 5.50

The total intrinsic value of restricted stock units, including PRSUs, vesting during the years ended December 31, 2018, 2017 and 2016 was $84,623, $48,473 and $17,807, respectively. During the years ended December 31, 2018, 2017 and 2016, we granted 5,158, 938 and 3,036 PRSUs to certain employees, respectively. We believe it is probable that the performance target applicable to these PRSUs will be achieved.

In connection with the cash dividends paid during the years ended December 31, 2018, 2017 and 2016, we granted 249, 247 and 70 restricted stock units, respectively, including PRSUs, in accordance with the terms of existing award agreements. These grants did not result in any additional incremental share-based payment expense being recognized during the years ended December 31, 2018, 2017 and 2016.

We recognized share-based payment expense associated with restricted stock units, including PRSUs, of $66,017, $45,578 and $28,338 for the years ended December 31, 2018, 2017 and 2016, respectively.

Total unrecognized compensation costs related to unvested share-based payment awards for stock options and restricted stock units, including PRSUs, granted to employees, members of our board of directors and third parties at December 31, 2018 and 2017 was $254,273 and $241,521, respectively. The total unrecognized compensation costs at December 31, 2018 are expected to be recognized over a weighted-average period of 1.8 years.

401(k) Savings Plan

We sponsor the Sirius XM Radio Inc. 401(k) Savings Plan (the "Sirius XM Plan") for eligible employees. The Sirius XM Plan allows eligible employees to voluntarily contribute from 1% to 50% of their pre-tax eligible earnings, subject to certain defined limits. We match 50% of an employee's voluntary contributions per pay period on the first 6% of an employee's pre-tax salary up to a maximum of 3% of eligible compensation. We may also make additional discretionary matching, true-up matching and non-elective contributions to the Sirius XM Plan. Employer matching contributions under the Sirius XM Plan vest at a rate of 33.33% for each year of employment and are fully vested after three years of employment for all current and future contributions. Our cash employer matching contributions are not used to purchase shares of Holdings' common stock on the open market, unless the employee elects Holdings' common stock as their investment option for this contribution. We recognized $8,692, $7,582 and $7,104 in expense during the years ended December 31, 2018, 2017 and 2016, respectively, in connection with the Sirius XM Plan.

(Dollars and shares in thousands, except per share amounts)

Sirius XM Holdings Inc. Deferred Compensation Plan

In 2015, Holdings' adopted the Sirius XM Holdings Inc. Deferred Compensation Plan (the "DCP"). The DCP allows members of Holdings' board of directors and certain eligible employees to defer all or a portion of their base salary, cash incentive compensation and/or board of directors' cash compensation, as applicable. Pursuant to the terms of the DCP, Holdings or any of its subsidiaries may elect to make additional contributions beyond amounts deferred by participants, but is under no obligation to do so. Holdings has established a grantor (or "rabbi") trust to facilitate the payment of its obligations under the DCP.

Contributions to the DCP, net of withdrawals, for the years ended December 31, 2018, 2017 and 2016 were $7,605, $7,628 and $4,295, respectively. As of December 31, 2018 and 2017, the fair value of the investments held in the trust were $21,860 and $14,641, respectively, which is included in Other long-term assets in our consolidated balance sheets and classified as trading securities. Trading gains and losses associated with these investments are recorded in Other income within our consolidated statements of comprehensive income. The associated liability is recorded within Other long-term liabilities in our consolidated balance sheets, and any increase or decrease in the liability is recorded in General and administration expense within our consolidated statements of comprehensive income. For the years ended December 31, 2018 and 2017, we recorded an immaterial amount of unrealized losses and gains on investments, respectively, held in the trust.

(14) Commitments and Contingencies

The following table summarizes our expected contractual cash commitments as of December 31, 2018:

	2019	2020	2021	2022	2023	Thereafter	Total
Debt obligations	$ 3,447	$ 1,207	$ 726	$1,000,000	$ 939,000	$ 5,000,000	$ 6,944,380
Cash interest payments	357,524	358,448	358,368	358,362	296,983	631,875	2,361,560
Satellite and transmission	97,794	50,735	3,883	2,428	1,448	2,840	159,128
Programming and content	261,577	220,853	126,024	55,956	33,433	129,984	827,827
Sales and marketing	37,277	8,386	7,461	1,646	204	—	54,974
Satellite incentive payments	11,002	10,197	8,574	8,558	8,821	52,946	100,098
Operating lease obligations	43,334	49,563	45,746	42,457	35,192	144,961	361,253
Royalties and other	168,710	113,658	92,059	23,224	5,023	10	402,684
Total (1)	$ 980,665	$ 813,047	$ 642,841	$1,492,631	$ 1,320,104	$ 5,962,616	$11,211,904

(1) The table does not include our reserve for uncertain tax positions, which at December 31, 2018 totaled $8,541.

Debt obligations. Debt obligations include principal payments on outstanding debt and capital lease obligations.

Cash interest payments. Cash interest payments include interest due on outstanding debt and capital lease payments through maturity.

Satellite and transmission. We have entered into agreements with several third parties to design, build, launch and insure two satellites, SXM-7 and SXM-8. We also have entered into agreements with third parties to operate and maintain satellite telemetry, tracking and control facilities and certain components of our terrestrial repeater networks.

Programming and content. We have entered into various programming and content agreements. Under the terms of these agreements, our obligations include fixed payments, advertising commitments and revenue sharing arrangements. In certain of these agreements, the future revenue sharing costs are dependent upon many factors and are difficult to estimate; therefore, they are not included in our minimum contractual cash commitments.

Sales and marketing. We have entered into various marketing, sponsorship and distribution agreements to promote our brand and are obligated to make payments to sponsors, retailers, automakers and radio manufacturers under these agreements. Certain programming and content agreements also require us to purchase advertising on properties owned or controlled by the licensors.

Satellite incentive payments. Boeing Satellite Systems International, Inc., the manufacturer of certain of our in-orbit satellites, may be entitled to future in-orbit performance payments upon XM-3 and XM-4 meeting their fifteen-year design life, which we expect to occur. Boeing may also be entitled to up to $10,000 of additional incentive payments if our XM-4 satellite continues to operate above baseline specifications during the five years beyond the satellite's fifteen-year design life, which is currently not expected to occur.

Space Systems/Loral, the manufacturer of certain of our in-orbit satellites, may be entitled to future in-orbit performance payments upon XM-5, SIRIUS FM-5 and SIRIUS FM-6 meeting their fifteen-year design life, which we expect to occur.

Operating lease obligations. We have entered into both cancelable and non-cancelable operating leases for office space, equipment and terrestrial repeaters. These leases provide for minimum lease payments, additional operating expense charges, leasehold improvements and rent escalations that have initial terms ranging from one to fifteen years, and certain leases have options to renew. The effect of the rent holidays and rent concessions are recognized on a straight-line basis over the lease term, including reasonably assured renewal periods. Total rent recognized in connection with leases for the years ended December 31, 2018, 2017 and 2016 was $43,494, $43,375 and $46,968, respectively.

Royalties and other. We have entered into certain music royalty arrangements that include fixed payments. We have also entered into various agreements with third parties for general operating purposes.

In addition to the minimum contractual cash commitments described above, we have entered into other variable cost arrangements. These future costs are dependent upon many factors and are difficult to anticipate; however, these costs may be substantial. We may enter into additional programming, distribution, marketing and other agreements that contain similar variable cost provisions. We also have a surety bond of approximately $45,000 primarily used as security against non-performance in the normal course of business. We do not have any other significant off-balance sheet financing arrangements that are reasonably likely to have a material effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources.

Legal Proceedings

In the ordinary course of business, we are a defendant or party to various claims and lawsuits, including those discussed below.

We record a liability when we believe that it is both probable that a liability will be incurred, and the amount of loss can be reasonably estimated. We evaluate developments in legal matters that could affect the amount of liability that has been previously accrued and make adjustments as appropriate. Significant judgment is required to determine both probability and the estimated amount of a loss or potential loss. We may be unable to reasonably estimate the reasonably possible loss or range of loss for a particular legal contingency for various reasons, including, among others, because: (i) the damages sought are indeterminate; (ii) the proceedings are in the relative early stages; (iii) there is uncertainty as to the outcome of pending proceedings (including motions and appeals); (iv) there is uncertainty as to the likelihood of settlement and the outcome of any negotiations with respect thereto; (v) there remain significant factual issues to be determined or resolved; (vi) the relevant law is unsettled; or (vii) the proceedings involve novel or untested legal theories. In such instances, there may be considerable uncertainty regarding the ultimate resolution of such matters, including the likelihood or magnitude of a possible eventual loss, if any.

Telephone Consumer Protection Act Suits. On March 13, 2017, Thomas Buchanan, individually and on behalf of all others similarly situated, filed a class action complaint against us in the United States District Court for the Northern District of Texas, Dallas Division. The plaintiff in this action alleges that we violated the Telephone Consumer Protection Act of 1991 (the "TCPA") by, among other things, making telephone solicitations to persons on the National Do-Not-Call registry, a database established to allow consumers to exclude themselves from telemarketing calls unless they consent to receive the calls in a signed, written agreement, and making calls to consumers in violation of our internal Do-Not-Call registry. The plaintiff is seeking various forms of relief, including statutory damages of five hundred dollars for each violation of the TCPA or, in the alternative, treble damages of up to fifteen hundred dollars for each knowing and willful violation of the TCPA and a permanent injunction prohibiting us from making, or having made, any calls to land lines that are listed on the National Do-Not-Call registry or our internal Do-Not-Call registry. The plaintiff has filed a motion seeking class certification, and that motion is pending. We believe we have substantial defenses to the claims asserted in this action, and we intend to defend this action vigorously.

(Dollars and shares in thousands, except per share amounts)

Other Matters. In the ordinary course of business, we are a defendant in various other lawsuits and arbitration proceedings, including derivative actions; actions filed by subscribers, both on behalf of themselves and on a class action basis; former employees; parties to contracts or leases; and owners of patents, trademarks, copyrights or other intellectual property. None of these other matters, in our opinion, is likely to have a material adverse effect on our business, financial condition or results of operations.

(15) Income Taxes

There is no current U.S. federal income tax provision, as all federal taxable income was offset by utilizing U.S. federal net operating loss carryforwards. The current state income tax provision is primarily related to taxable income in certain states that have suspended or limited the ability to use net operating loss carryforwards or where net operating losses have been fully utilized. The current foreign income tax provision is primarily related to foreign withholding taxes on dividends paid to us by Sirius XM Canada. Income tax expense is the sum of current income tax plus the change in deferred tax assets and liabilities.

Sirius XM and its wholly-owned subsidiaries are included in the consolidated federal income tax returns of Holdings. Holdings files a consolidated federal income tax return with its wholly-owned subsidiaries, including Sirius XM. Income tax expense consisted of the following:

	For the Years Ended December 31,		
	2018	2017	2016
Current taxes:			
Federal	$ —	$ —	$ —
State	12,038	(32,579)	(21,782)
Foreign	(144)	(202)	(383)
Total current taxes	11,894	(32,781)	(22,165)
Deferred taxes:			
Federal	(258,930)	(564,171)	(304,179)
State	2,355	(19,349)	(19,383)
Total deferred taxes	(256,575)	(583,520)	(323,562)
Total income tax expense	$ (244,681)	$ (616,301)	$ (345,727)

Income tax expense for Sirius XM and Holdings was the same for the years ended December 31, 2018, 2017 and 2016. The following table presents a reconciliation of the U.S. federal statutory tax rate and our effective tax rate:

	For the Years Ended December 31,		
	2018	2017	2016
Federal tax expense, at statutory rate	21.0 %	35.0 %	35.0 %
State income tax expense, net of federal benefit	3.6 %	2.8 %	2.8 %
Change in valuation allowance	1.0 %	(0.1)%	— %
Tax credits	(6.8)%	(1.7)%	(6.1)%
Stock-based compensation	(3.1)%	(2.9)%	(0.6)%
Federal tax reform - deferred rate change	— %	14.6 %	— %
Other, net	1.5 %	1.0 %	0.6 %
Effective tax rate	17.2 %	48.7 %	31.7 %

(Dollars and shares in thousands, except per share amounts)

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Act. The Tax Act made broad and complex changes to the U.S. tax code, including, accelerated depreciation that will allow for full expensing of qualified property. The Tax Act also reduced the U.S. federal corporate income tax rate from 35% to 21%.

The effective tax rate of 17.2% for the year ended December 31, 2018 was primarily impacted by the reduced federal tax rate to 21%, the recognition of excess tax benefits related to share based compensation and a benefit related to state and federal research and development credits. The effective tax rate of 48.7% for the year ended December 31, 2017 was negatively impacted by the revaluation of our net deferred tax assets, excluding after tax credits as of December 31, 2017 as a result of the reduction of the federal corporate income tax rate. This was offset by the recognition of excess tax benefits related to share based compensation and a benefit related to federal research and development credits, under the Protecting Americans from Tax Hikes Act of 2015. Based on this revaluation, we recorded an additional tax expense of $184,599 to reduce our net deferred tax asset balance for the year ended December 31, 2017. The effective tax rate of 31.7% for the year ended December 31, 2016 was primarily impacted by the benefit related to federal research and development credits.

Deferred income taxes are recognized for the tax consequences related to temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for tax purposes at each year-end, based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences can be carried forward under tax law. Our evaluation of the realizability of deferred tax assets considers both positive and negative evidence, including historical financial performance, scheduled reversal of deferred tax assets and liabilities, projected taxable income and tax planning strategies. The weight given to the potential effects of positive and negative evidence is based on the extent to which it can be objectively verified. A valuation allowance is recognized when, based on the weight of all available evidence, it is considered more likely than not that all, or some portion, of the deferred tax assets will not be realized.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities, shown before jurisdictional netting, are presented below:

	For the Years Ended December 31,	
	2018	2017
Deferred tax assets:		
Net operating loss carryforwards and tax credits	$ 952,316	$ 686,277
Deferred revenue	88,502	500,461
Accrued bonus	26,825	24,150
Expensed costs capitalized for tax	15,978	13,914
Investments	11,965	29,881
Stock based compensation	55,436	50,065
Other	5,940	20,819
Total deferred tax assets	1,156,962	1,325,567
Deferred tax liabilities:		
Depreciation of property and equipment	(230,053)	(156,003)
FCC license	(515,627)	(506,578)
Other intangible assets	(101,650)	(105,471)
Other	2,049	(7,273)
Total deferred tax liabilities	(845,281)	(775,325)
Net deferred tax assets before valuation allowance	311,681	550,242
Valuation allowance	(66,229)	(52,883)
Total net deferred tax asset	$ 245,452	$ 497,359

(Dollars and shares in thousands, except per share amounts)

Net operating loss carryforwards and tax credits increased as a result of accelerated tax benefits due to accounting methods changes and accelerated depreciation that allowed for full expensing on qualified property under the Tax Act offset by the utilization of net operating losses related to current year taxable income. For the years ended December 31, 2018 and 2017, we recorded $96,971 and $21,700 state and federal tax credits, respectively. Our gross federal net operating loss carryforwards are approximately $2,760,000.

As of December 31, 2018 and 2017, we had a valuation allowance related to deferred tax assets of $66,229 and $52,883, respectively, which were not likely to be realized due to the timing of certain federal and state net operating loss limitations. During the year ended December 31, 2018, our allowance increased primarily due to time limitations associated with federal research and development credits. During the year ended December 31, 2017, our valuation allowance increased primarily due to the impact of the Tax Act as the federal rate decreases from 35% to 21% affected the value of the state valuation allowances. The net operating loss carryforwards and tax credits upon which the valuation allowance is assessed are projected to expire on various dates through 2037 and 2038, respectively.

ASC 740, *Income Taxes*, requires a company to first determine whether it is more likely than not that a tax position will be sustained based on its technical merits as of the reporting date, assuming that taxing authorities will examine the position and have full knowledge of all relevant information. A tax position that meets this more likely than not threshold is then measured and recognized at the largest amount of benefit that is greater than fifty percent likely to be realized upon effective settlement with a taxing authority. If the tax position is not more likely than not to be sustained, the gross amount of the unrecognized tax position will not be recorded in the financial statements but will be shown in tabular format within the uncertain income tax positions. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs due to the following conditions: (1) the tax position is “more likely than not” to be sustained, (2) the tax position, amount, and/or timing is ultimately settled through negotiation or litigation, or (3) the statute of limitations for the tax position has expired. A number of years may elapse before an uncertain tax position is effectively settled or until there is a lapse in the applicable statute of limitations. We record interest and penalties related to uncertain tax positions in Income tax expense in our consolidated statements of comprehensive income.

As of December 31, 2018 and 2017, the gross liability for income taxes associated with uncertain tax positions was $387,149 and $334,254, respectively. If recognized, $306,675 of unrecognized tax benefits would affect our effective tax rate. Uncertain tax positions are recognized in Other long-term liabilities which, as of December 31, 2018 and 2017, were $8,541 and $12,190, respectively, including accrued interest. No penalties have been accrued.

We have state income tax audits pending. We do not expect the ultimate outcome of these audits to have a material adverse effect on our financial position or results of operations. We also do not currently anticipate that our existing reserves related to uncertain tax positions as of December 31, 2018 will significantly increase or decrease during the year ending December 31, 2019. Various events could cause our current expectations to change. Should our position with respect to the majority of these uncertain tax positions be upheld, the effect would be recorded in our consolidated statements of comprehensive income as part of the income tax provision. We recorded interest expense of $627 and $708 for the years ended December 31, 2018 and 2017, respectively, related to unrecognized tax benefits.

Changes in our uncertain income tax positions, from January 1 through December 31 are set forth below:

	2018	2017
Balance, beginning of year	$ 334,254	$ 303,583
Increases in tax positions for prior years	65,099	14,530
Increases in tax positions for current years	14,594	16,141
Decreases in tax positions for prior years	(26,798)	—
Balance, end of year	$ 387,149	$ 334,254

(16) Subsequent Events

Pandora Acquisition

The Pandora stockholders voted to adopt the Merger Agreement at a special stockholder meeting on January 29, 2019.

Holdings' Capital Return Program

On January 29, 2019, Holdings' board of directors declared a quarterly dividend on Holdings' common stock in the amount of $0.0121 per share of Holdings' common stock payable on February 28, 2019 to Holdings' stockholders of record as of the close of business on February 11, 2019.

On January 29, 2019, Holdings' board of directors approved an additional $2,000,000 for repurchase of Holdings' common stock. The new approval increases the amount of common stock that we have been authorized to repurchase to an aggregate of $14,000,000. Shares of common stock may be purchased from time to time on the open market and in privately negotiated transactions, including in accelerated stock repurchase transactions and transactions with Liberty Media and its affiliates. We intend to fund the additional repurchases through a combination of cash on hand, cash generated by operations and future borrowings.

(Dollars and shares in thousands, except per share amounts)

(17) Quarterly Financial Data--Unaudited

Our quarterly results of operations are summarized below:

	For the Three Months Ended			
	March 31	June 30	September 30	December 31
2018 (1)				
Total revenue	$ 1,375,102	$ 1,432,299	$ 1,467,383	$ 1,495,908
Cost of services	$ (534,652)	$ (636,668)	$ (564,735)	$ (572,551)
Income from operations	$ 423,591	$ 361,627	$ 482,557	$ 459,173
Net income	$ 289,441	$ 292,352	$ 343,048	$ 251,052
2017 (1)				
Total revenue	$ 1,294,066	$ 1,347,569	$ 1,379,596	$ 1,403,898
Cost of services	$ (497,107)	$ (513,446)	$ (519,024)	$ (572,405)
Income from operations	$ 393,840	$ 416,353	$ 433,965	$ 396,706
Net income (loss)	$ 207,073	$ 202,109	$ 275,722	$ (36,996)

(1) Net income (loss) per share for Sirius XM is not presented since Sirius XM is a wholly-owned subsidiary of Holdings.