SIRIUS XM RADIO INC.

(Exact name of company as specified in its charter)

QUARTERLY REPORT

For the Quarterly Period Ended September 30, 2019

Explanatory Note

Sirius XM Radio Inc. ("Sirius XM") is furnishing this Quarterly Report for the quarterly period ended September 30, 2019 (the "Quarterly 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, 4.625% Senior Notes due 2024, 5.375% Senior Notes due 2025, 5.375% Senior Notes due 2026, 5.00% Senior Notes due 2027 and 5.50% Senior Notes due 2029 (collectively, the "Notes").

Before making any investment decisions in Sirius XM or Sirius XM Holdings Inc. ("Holdings"), investors should read the following unaudited 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' Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019 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' Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019 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 unaudited consolidated financial statements included within this Quarterly Report for an explanation of differences between Sirius XM and Holdings' unaudited 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. "Pandora" refers to Sirius XM's wholly owned subsidiary Pandora Media, LLC (the successor to Pandora Media, Inc.) and its subsidiaries.

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

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
(in millions)	2019	2018	2019	2018
Revenue:				
Subscriber revenue	$ 1,556	$ 1,340	$ 4,551	$ 3,903
Advertising revenue	366	46	933	135
Equipment revenue	45	41	127	113
Other revenue	44	40	121	124
Total revenue	2,011	1,467	5,732	4,275
Operating expenses:				
Cost of services:				
Revenue share and royalties	592	343	1,684	1,057
Programming and content	116	96	338	303
Customer service and billing	119	95	352	284
Transmission	46	24	117	70
Cost of equipment	8	7	20	22
Subscriber acquisition costs	101	109	313	352
Sales and marketing	233	117	648	344
Engineering, design and development	78	31	206	89
General and administrative	124	86	379	264
Depreciation and amortization	118	76	344	222
Acquisition and other related costs	—	—	83	—
Total operating expenses	1,535	984	4,484	3,007
Income from operations	476	483	1,248	1,268
Other (expense) income:				
Interest expense	(103)	(86)	(287)	(263)
Loss on extinguishment of debt	(56)	—	(57)	—
Other (expense) income	(11)	(42)	(9)	82
Total other (expense) income	(170)	(128)	(353)	(181)
Income before income taxes	306	355	895	1,087
Income tax expense	(70)	(12)	(227)	(162)
Net income attributable to Sirius XM Radio Inc.'s sole stockholder	$ 236	$ 343	$ 668	$ 925
Foreign currency translation adjustment, net of tax	(5)	8	9	(10)
Total comprehensive income attributable to Sirius XM Radio Inc.'s sole stockholder	$ 231	$ 351	$ 677	$ 915

See accompanying notes to the unaudited consolidated financial statements.

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

(in millions, except per share data)	September 30, 2019	December 31, 2018
ASSETS	**(unaudited)**	
Current assets:		
Cash and cash equivalents	$ 79	$ 54
Receivables, net	632	233
Inventory, net	14	22
Related party current assets	11	11
Prepaid expenses and other current assets	200	158
Total current assets	936	478
Property and equipment, net	1,609	1,513
Intangible assets, net	3,505	2,501
Goodwill	3,841	2,290
Related party long-term assets	8,164	9,001
Deferred tax assets	183	293
Operating lease right-of-use assets	428	—
Other long-term assets	135	138
Total assets	$ 18,801	$ 16,214
LIABILITIES AND STOCKHOLDER EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$ 1,156	$ 736
Accrued interest	104	128
Current portion of deferred revenue	1,938	1,932
Current maturities of debt	2	3
Operating lease current liabilities	47	—
Related party current liabilities	4	4
Total current liabilities	3,251	2,803
Long-term deferred revenue	134	149
Long-term debt	7,968	6,885
Related party long-term liabilities	1	4
Deferred tax liabilities	48	47
Operating lease liabilities	407	—
Other long-term liabilities	91	102
Total liabilities	11,900	9,990
Commitments and contingencies (Note 14)		
Stockholder equity:		
Common stock, par value $0.001 per share; 9,000 shares authorized; 0.001 shares issued and outstanding at September 30, 2019 and December 31, 2018, respectively	—	—
Accumulated other comprehensive income (loss), net of tax	3	(6)
Additional paid-in capital	8,680	8,680
Accumulated deficit	(1,782)	(2,450)
Total stockholder equity	6,901	6,224
Total liabilities and stockholder equity	$ 18,801	$ 16,214

See accompanying notes to the unaudited consolidated financial statements.

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

For the Nine Months Ended September 30, 2019

	Common Stock					
(in millions)	Shares	Amount	Accumulated Other Comprehensive Income (Loss)	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
Balance at December 31, 2018	—	$ —	$ (6)	$ 8,680	$ (2,450)	$ 6,224
Comprehensive income, net of tax	—	—	9	—	668	677
Balance at September 30, 2019	—	$ —	$ 3	$ 8,680	$ (1,782)	$ 6,901

For the Three Months Ended September 30, 2019

	Common Stock					
(in millions)	Shares	Amount	Accumulated Other Comprehensive Income (Loss)	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
Balance at June 30, 2019	—	$ —	$ 8	$ 8,680	$ (2,018)	$ 6,670
Comprehensive income, net of tax	—	—	(5)	—	236	231
Balance at September 30, 2019	—	$ —	$ 3	$ 8,680	$ (1,782)	$ 6,901

See accompanying notes to the unaudited consolidated financial statements.

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

For the Nine Months Ended September 30, 2018

(in millions)	Common Stock Shares	Common Stock Amount	Accumulated Other Comprehensive (Loss) Income	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
Balance at December 31, 2017	—	$ —	$ 18	$ 8,680	$ (3,636)	$ 5,062
Cumulative effect of change in accounting principles	—	—	4	—	10	14
Comprehensive income, net of tax	—	—	(10)	—	925	915
Balance at September 30, 2018	—	$ —	$ 12	$ 8,680	$ (2,701)	$ 5,991

For the Three Months Ended September 30, 2018

(in millions)	Common Stock Shares	Common Stock Amount	Accumulated Other Comprehensive (Loss) Income	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
Balance at June 30, 2018	—	$ —	$ 4	$ 8,680	$ (3,040)	$ 5,644
Cumulative effect of change in accounting principles	—	—	—	—	(4)	(4)
Comprehensive income, net of tax	—	—	8	—	343	351
Balance at September 30, 2018	—	$ —	$ 12	$ 8,680	$ (2,701)	$ 5,991

See accompanying notes to the unaudited consolidated financial statements.

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

(in millions)	For the Nine Months Ended September 30, 2019	2018
Cash flows from operating activities:		
Net income	$ 668	$ 925
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	344	222
Non-cash interest expense, net of amortization of premium	8	7
Provision for doubtful accounts	40	38
Amortization of deferred income related to equity method investment	(2)	(2)
Loss on extinguishment of debt	57	—
Loss on unconsolidated entity investments, net	16	2
Loss (gain) on fair value instrument	7	(74)
Dividend received from unconsolidated entity investment	1	2
Share-based payment expense	192	100
Deferred income taxes	210	173
Changes in operating assets and liabilities:		
Receivables	(85)	(42)
Inventory	8	1
Related party, net	(104)	(99)
Prepaid expenses and other current assets	(9)	(35)
Other long-term assets	5	6
Operating lease right-of-use assets	16	—
Accounts payable and accrued expenses	80	(2)
Accrued interest	(24)	(53)
Deferred revenue	(46)	65
Operating lease liabilities	(4)	—
Other long-term liabilities	4	1
Net cash provided by operating activities	1,382	1,235
Cash flows from investing activities:		
Additions to property and equipment	(239)	(238)
Purchases of other investments	(7)	(7)
Acquisition of business, net of cash acquired	313	(1)
Sale of short-term investments	73	—
Investments in related parties and other equity investees	(14)	(8)
Repayment from related party	—	3
Net cash provided by (used in) investing activities	126	(251)
Cash flows from financing activities:		
Intercompany financing activities	(2,116)	(810)
Revolving credit facility, net of deferred financing costs	(374)	(184)
Proceeds from long-term borrowings, net of costs	2,715	—
Principal payments of long-term borrowings	(1,663)	(12)
Payment of premiums on redemption of debt	(45)	—
Net cash used in financing activities	(1,483)	(1,006)
Net increase (decrease) in cash, cash equivalents and restricted cash	25	(22)
Cash, cash equivalents and restricted cash at beginning of period	65	79
Cash, cash equivalents and restricted cash at end of period(1)	$ 90	$ 57

See accompanying notes to the unaudited consolidated financial statements.

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

(in millions)	For the Nine Months Ended September 30, 2019	2018
Supplemental Disclosure of Cash and Non-Cash Flow Information		
Cash paid during the period for:		
Interest, net of amounts capitalized	$ 300	$ 305
Income taxes paid	$ 6	$ 6
Non-cash investing and financing activities:		
Holdings' shares issued related to Pandora Acquisition	$ 2,355	$ —
Accumulated other comprehensive income (loss), net of tax	$ 9	$ (10)

(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.

(in millions)	September 30, 2019	December 31, 2018	September 30, 2018	December 31, 2017
Cash and cash equivalents	$ 79	$ 54	$ 46	$ 69
Restricted cash included in Other long-term assets	11	11	11	10
Total cash, cash equivalents and restricted cash at end of period	$ 90	$ 65	$ 57	$ 79

See accompanying notes to the unaudited consolidated financial statements.

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

(1) Business & Basis of Presentation

Business

We operate two complementary audio entertainment businesses - our Sirius XM business and our Pandora business.

Sirius XM

Our Sirius XM business features music, sports, entertainment, comedy, talk, news, traffic and weather channels, as well as infotainment services, in the United States on a subscription fee basis. Our service is distributed through our two proprietary satellite radio systems and through the internet via applications for mobile devices, home devices and other consumer electronic equipment. Satellite radios are primarily distributed through automakers, retailers and our website. Our Sirius XM service is also available through our user interface, which we call “360L,” that combines our satellite and streaming services into a single, cohesive in-vehicle entertainment experience. The primary source of revenue from our Sirius XM business is generated from subscription fees, with most of our customers subscribing to monthly, quarterly, semi-annual or annual plans. We also derive revenue from advertising on select non-music channels, direct sales of our satellite radios and accessories, and other ancillary services. As of September 30, 2019, our Sirius XM business had approximately 34.6 million subscribers.

In addition to our audio entertainment businesses, we provide connected vehicle services to several automakers and directly to consumers through aftermarket devices. These services are designed to enhance the safety, security and driving experience of consumers. We also offer a suite of data services that includes graphical weather, fuel prices, sports schedules and scores and movie listings, a traffic information service that includes information as to road closings, traffic flow and incident data to consumers with compatible in-vehicle navigation systems, and real-time weather services designed for improving situational awareness in vehicles, boats and planes.

Sirius XM also holds a 70% equity interest and 33% voting interest in Sirius XM Canada Holdings Inc. ("Sirius XM Canada"). Sirius XM Canada's subscribers are not included in our subscriber count or subscriber-based operating metrics.

Pandora

Our Pandora business operates a music, comedy and podcast streaming discovery platform, offering a personalized experience for each listener wherever and whenever they want to listen, whether through mobile devices, car speakers or connected devices. Pandora enables listeners to create personalized stations and playlists, discover new content, hear artist- and expert-curated playlists, podcasts and select Sirius XM content as well as search and play songs and albums on-demand. Pandora is available as an ad-supported radio service, a radio subscription service, called Pandora Plus, and an on-demand subscription service, called Pandora Premium. As of September 30, 2019, Pandora had approximately 6.3 million subscribers. The majority of revenue from our Pandora business is generated from advertising on our Pandora ad-supported radio service. In addition, as a result of the May 2018 acquisition of AdsWizz Inc. by Pandora, we provide a comprehensive digital audio advertising technology platform, which connects audio publishers and advertisers. As of September 30, 2019, our Pandora business had approximately 63.1 million monthly active users.

Liberty Media

As of September 30, 2019, Liberty Media Corporation (“Liberty Media”) beneficially owned, directly and indirectly, approximately 71% 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.

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

Basis of Presentation

The accompanying unaudited 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. Music Royalty Fee revenue was reported as Other revenue in our September 30, 2018 Quarterly Report. This revenue was reclassified to Subscriber revenue to conform with the current period presentation.

	For the Three Months Ended September 30, 2018			For the Nine Months Ended September 30, 2018		
	As Reported	Reclassification	Current Report	As Reported	Reclassification	Current Report
Subscriber revenue	$ 1,162	$ 178	$ 1,340	$ 3,419	$ 484	$ 3,903
Advertising revenue	46	—	46	135	—	135
Equipment revenue	41	—	41	113	—	113
Other revenue	218	(178)	40	608	(484)	124
Total revenue	$ 1,467	$ —	$ 1,467	$ 4,275	$ —	$ 4,275

The unaudited consolidated financial statements for Sirius XM for the quarterly period ended September 30, 2019 are essentially identical to the unaudited consolidated financial statements included in Holdings' Form 10-Q for the quarterly period ended September 30, 2019, filed with the SEC on October 31, 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, the issuance of Holdings' common stock related to the recapitalization of Sirius XM Canada and the issuance of Holdings' common stock related to the Pandora Acquisition have been reported as related party transactions within Sirius XM's unaudited consolidated financial statements. Refer to Note 10 for additional information related to related party transactions.
- As a result of the Pandora Acquisition effective February 1, 2019, we assumed Pandora's 1.75% Convertible Senior Notes due 2023 (the "Pandora 2023 Notes"). Upon the occurrence of certain events, the Pandora 2023 Notes can be convertible into shares of Holdings' common stock. Holdings allocates the principal amount of the Pandora 2023 Notes between liability and equity components. We have elected to measure the Pandora 2023 Notes at fair value with changes in fair value recorded within Sirius XM's unaudited consolidated statements of operations. Additionally, the different basis for the Pandora 2023 Notes between Holdings and SiriusXM results in a deferred tax liability at Holdings whereas none exists at SiriusXM. Refer to Note 11 for more information regarding the Pandora 2023 Notes.

In the opinion of our management, all normal recurring adjustments necessary for a fair presentation of our unaudited consolidated financial statements as of September 30, 2019 and for the three and nine months ended September 30, 2019 and 2018 have been made.

Interim results are not necessarily indicative of the results that may be expected for a full year. This Quarterly Report should be read together with our Annual Report for the year ended December 31, 2018, which is available on our website at http://investor.siriusxm.com/investoroverview/default.aspx#dividend-tab2, and 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 two reportable segments as our chief operating decision maker, our Chief Executive Officer, assesses performance and allocates resources based on the financial results of these segments. Refer to Note 15 for information related to our segments.

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

We have evaluated events subsequent to the balance sheet date and prior to the furnishing of this Quarterly Report for the three and nine months ended September 30, 2019 and have determined that no events have occurred that would require adjustment to our unaudited consolidated financial statements. For a discussion of subsequent events that do not require adjustment to our unaudited consolidated financial statements refer to Note 17.

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 unaudited consolidated financial statements include asset impairment, depreciable lives of our satellites, share-based payment expense, income taxes, and the purchase accounting related to the Pandora Acquisition (defined below).

(2) Acquisition

On February 1, 2019, through a series of transactions, Pandora Media, Inc., became an indirect wholly owned subsidiary of Sirius XM and continues to operate as Pandora Media, LLC (the "Pandora Acquisition"). In connection with the Pandora Acquisition, Holdings purchased all of the outstanding shares of the capital stock of Pandora for $2,355 by converting each outstanding share of Pandora common stock into 1.44 shares of Holdings' common stock and we also canceled our preferred stock investment in Pandora for $524 for total consideration of $2,879. Net cash acquired was $313. As part of the Pandora Acquisition, Holdings unconditionally guaranteed all of the payment obligations of Pandora under its outstanding 1.75% convertible senior notes due 2020 and 1.75% convertible senior notes due 2023.

The table below shows the value of the consideration paid in connection with the Pandora Acquisition:

		Total
Pandora common stock outstanding		272
Exchange ratio		1.44
Holdings' common stock issued		392
Price per share of Holdings common stock	$	5.83
Value of Holdings' common stock issued to Pandora stockholders	$	2,285
Value of replacement equity awards attributable to pre-combination service	$	70
Consideration of Holdings' common stock and replacement equity awards for pre-combination service	$	2,355
Sirius XM's Pandora preferred stock investment (related party fair value instrument) canceled	$	524
Total consideration for Pandora Acquisition	$	2,879
Value attributed to par at $0.001 par value	$	1
Balance to capital in excess of par value	$	2,354

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

The table below summarizes the fair value of the assets acquired and liabilities assumed as of the acquisition date:

Acquired Assets:		
Cash and cash equivalents	$	313
Receivables, net		353
Prepaid expenses and other current assets		109
Property and equipment		65
Intangible assets		1,107
Goodwill		1,551
Deferred tax assets		102
Operating lease right-of-use assets		96
Long term assets		7
Total assets	$	3,703
Assumed Liabilities:		
Accounts payable and accrued expenses	$	322
Deferred revenue		37
Operating lease current liabilities		27
Current maturities of debt		151
Long-term debt (a)		218
Operating lease liabilities		62
Other long-term liabilities		7
Total liabilities	$	824
Total consideration	$	2,879

(a) Includes the fair value of Pandora's 2023 Notes

The Pandora Acquisition was accounted for using the acquisition method of accounting. The initial purchase price allocation is preliminary and is subject to revision as permitted by ASC 805, *Business Combinations*. The primary areas of the purchase price allocation that are not yet finalized are related to certain assets, contingencies and tax balances. The excess purchase price over identifiable net tangible and intangible assets of $1,566 has been recorded to Goodwill in our unaudited consolidated balance sheets as of September 30, 2019. A total of $776 has been allocated to identifiable intangible assets subject to amortization and relates to the assessed fair value of the acquired customer relationships and software and technology and is being amortized over the estimated weighted average useful lives of 8 and 5 years, respectively. A total of $331 has been allocated to identifiable indefinite lived intangible assets and relates to the assessed fair value of the acquired trademarks. The fair value assessed for the majority of the remaining assets acquired and liabilities assumed equaled their carrying value. Goodwill represents synergies and economies of scale expected from the combination of services. Goodwill has been allocated to the Pandora segment. Additionally, in connection with the Pandora Acquisition, we acquired gross net operating loss (“NOL”) carryforwards of approximately $1,284 for federal income tax purposes that are available to offset future taxable income. The acquired NOL's are limited by Section 382 of the Internal Revenue Code. Those limitations are not expected to impact our ability to fully utilize those NOL's within the carryforward period.

We recognized acquisition related costs of $0 and $83 that were expensed in Acquisition and other related costs in our unaudited consolidated statements of comprehensive income during the three and nine months ended September 30, 2019, respectively.

Pro Forma Financial Information

Pandora was consolidated into our financial statements starting on the acquisition date, February 1, 2019. The aggregate revenue and net loss of Pandora consolidated into our financial statements since the date of acquisition was $447 and $47,000,000, respectively, for the three months ended September 30, 2019 and $1,139 and $225 for the nine months ended September 30, 2019, respectively. The following pro forma financial information presents our results as if the Pandora Acquisition had occurred on January 1, 2018:

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

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2019	2018	2019	2018
Total revenue	$ 2,013	$ 1,887	$ 5,852	$ 5,404
Net income	$ 235	$ 317	$ 687	$ 608

These pro forma results are based on estimates and assumptions, which we believe are reasonable. They are not the results that would have been realized had the acquisition actually occurred on January 1, 2018 and are not indicative of our consolidated results of operations in future periods. The pro forma results primarily include adjustments related to amortization of acquired intangible assets, depreciation of property and equipment, acquisition costs, fair value gain or loss on the Pandora investment and associated tax impacts. With respect to the three months ended September 30, 2019, the pro forma results only represent the effect of purchase price accounting, as Pandora's results of operations were fully reflected for the period).

(3) Summary of Significant Accounting Policies

Fair Value Measurements

For assets and liabilities required to be reported at fair value, GAAP provides a hierarchy that prioritizes inputs to valuation techniques used to measure fair value into three broad levels. Level 1 inputs are based on unadjusted quoted prices in active markets for identical instruments. Level 2 inputs are inputs, other than quoted market prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability. As of September 30, 2019 and December 31, 2018, the carrying amounts of cash and cash equivalents, receivables, and accounts payable approximated fair value due to the short-term nature of these instruments.

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

	September 30, 2019				December 31, 2018			
	Level 1	Level 2	Level 3	Total Fair Value	Level 1	Level 2	Level 3	Total Fair Value
Assets:								
Pandora investment [(a)]	—	—	—	$ —	—	$ 523	—	$ 523
Liabilities:								
Debt [(b)]	—	$ 8,349	—	$ 8,349	—	$ 6,633	—	$ 6,633

(a) During the year ended December 31, 2017, Sirius XM completed a $480 preferred stock investment in Pandora. Prior to the Pandora Acquisition, we elected the fair value option to account for this investment. This investment was canceled in conjunction with the Pandora Acquisition. Refer to Note 2 for information on this acquisition.

(b) The fair value for non-publicly traded debt 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 September 30, 2019 and December 31, 2018.

Accumulated Other Comprehensive Income (Loss)

Accumulated other comprehensive income of $3 was primarily comprised of the cumulative foreign currency translation adjustments related to our investment in and loan to Sirius XM Canada (refer to Note 10 for additional information). During the three and nine months ended September 30, 2019, we recorded foreign currency translation adjustment (loss) income of $(5) and $9, respectively, net of tax benefit (expense) of $1 and $(4), respectively. During the three and nine months ended September 30, 2018, we recorded a foreign currency translation adjustment income (loss) of $8 and $(10), respectively, net of a tax (expense) benefit of $(2) and $3, respectively.

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

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*. This ASU aligns 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.

Recently Adopted Accounting Policies

ASU 2016-02, Leases (Topic 842). In February 2016, FASB issued ASU 2016-02 which requires companies 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, measure, and present 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 was effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and early adoption was 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 adopted this ASU on January 1, 2019 and elected the additional transition method per ASU 2018-11. Our leases consist of repeater leases, facility leases and equipment leases. We elected the package of practical expedients permitted under the transition guidance within the new standard.

Adoption of the new standard resulted in the recording of additional lease assets and lease liabilities of approximately $347 and $369, respectively, as of January 1, 2019. The standard did not impact our consolidated statements of operations, consolidated statements of cash flows or debt. Additionally, we did not record a cumulative effect adjustment to opening retained earnings.

The effect of the changes made to our consolidated balance sheet as of January 1, 2019 for the adoption of ASU 2016-02 is included in the table below.

	Balance at December 31, 2018	Adjustments Due to ASU 2016-02	Balance at January 1, 2019
Balance Sheet			
Assets:			
Operating lease right-of-use assets	$ —	$ 347	$ 347
Liabilities:			
Accounts payable and accrued expenses	$ 736	$ (1)	$ 735
Operating lease current liabilities	—	30	30
Operating lease liabilities	—	339	339
Other long-term liabilities	102	(21)	81

(4) Receivables, net

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

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

Customer accounts receivable, net, includes receivables from our subscribers, advertising customers and other customers, 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 unaudited consolidated statements of comprehensive income.

Receivables from distributors primarily include billed and unbilled amounts due from automakers 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 automakers or other third parties.

Receivables, net, consists of the following:

	September 30, 2019	December 31, 2018
Gross customer accounts receivable	$ 518	$ 105
Allowance for doubtful accounts	(13)	(7)
Customer accounts receivable, net	$ 505	$ 98
Receivables from distributors	98	107
Other receivables	29	28
Total receivables, net	$ 632	$ 233

(5) 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 unaudited 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 unaudited consolidated statements of comprehensive income.

Inventory, net, consists of the following:

	September 30, 2019	December 31, 2018
Raw materials	$ 5	$ 5
Finished goods	15	23
Allowance for obsolescence	(6)	(6)
Total inventory, net	$ 14	$ 22

(6) 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 two reporting units 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.

As of September 30, 2019, there were no indicators of impairment, and no impairment losses were recorded for goodwill during the three and nine months ended September 30, 2019 and 2018. As of September 30, 2019, 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, which was recognized during the year ended December 31, 2008.

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

As a result of the Pandora Acquisition, we recorded additional goodwill of $1,551 during the nine months ended September 30, 2019 at our Pandora reporting unit. The goodwill of the acquired company is not deductible for tax purposes. Refer to Note 2 for information on this acquisition.

(7) Intangible Assets

Our intangible assets include the following:

		September 30, 2019			December 31, 2018		
	Weighted Average Useful Lives	**Gross Carrying Value**	**Accumulated Amortization**	**Net Carrying Value**	**Gross Carrying Value**	**Accumulated Amortization**	**Net Carrying Value**
Indefinite life intangible assets:							
FCC licenses	Indefinite	$ 2,084	$ —	$ 2,084	$ 2,084	$ —	$ 2,084
Trademarks	Indefinite	251	—	251	251	—	251
Definite life intangible assets:							
OEM relationships	15 years	220	(87)	133	220	(76)	144
Licensing agreements	12 years	45	(41)	4	45	(38)	7
Software and technology	7 years	35	(24)	11	35	(20)	15
Due to Pandora Acquisition:							
Indefinite life intangible assets:							
Trademarks	Indefinite	$ 331	$ —	$ 331	$ —	$ —	$ —
Definite life intangible assets:							
Customer relationships	8 years	403	(35)	368	—	—	—
Software and technology	5 years	373	(50)	323	—	—	—
Total intangible assets		$ 3,742	$ (237)	$ 3,505	$ 2,635	$ (134)	$ 2,501

Indefinite Life Intangible Assets

We have identified our FCC licenses and the Pandora and XM 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. As part of the Pandora Acquisition, we also identified $331 related to its trademarks, for which the fair value was determined using the relief from royalty method as of the acquisition date.

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.

Our annual impairment assessment of our identifiable indefinite life 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. As of September 30, 2019, there were no indicators of impairment, and no impairment loss was recognized for intangible assets with indefinite lives during the three and nine months ended September 30, 2019 and 2018.

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

Definite Life Intangible Assets

Amortization expense for all definite life intangible assets was $38 and $6 for the three months ended September 30, 2019 and 2018, respectively, and $103 and $17 for the nine months ended September 30, 2019 and 2018, respectively. There were no retirements of definite lived intangible assets during the three and nine months ended September 30, 2019. As part of the Pandora Acquisition, $776 was allocated to identifiable intangible assets subject to amortization and related to the assessed fair value of customer relationships and software and technology, which was determined by using the multi-period excess earnings method and the relief from royalty method, respectively, as of the acquisition date.

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 (remaining)	$ 38
2020	152
2021	146
2022	144
2023	134
Thereafter	225
Total definite life intangible assets, net	$ 839

(8) Property and Equipment

Property and equipment, net, consists of the following:

	September 30, 2019	December 31, 2018
Satellite system	$ 1,587	$ 1,587
Terrestrial repeater network	100	98
Leasehold improvements	94	58
Broadcast studio equipment	122	111
Capitalized software and hardware	964	824
Satellite telemetry, tracking and control facilities	84	76
Furniture, fixtures, equipment and other	88	97
Land	38	38
Building	63	63
Construction in progress	561	412
Total property and equipment	3,701	3,364
Accumulated depreciation and amortization	(2,092)	(1,851)
Property and equipment, net	$ 1,609	$ 1,513

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

Construction in progress consists of the following:

	September 30, 2019	December 31, 2018
Satellite system	$ 354	$ 296
Terrestrial repeater network	7	5
Capitalized software and hardware	162	77
Other	38	34
Construction in progress	$ 561	$ 412

Depreciation and amortization expense on property and equipment was $80 and $70 for the three months ended September 30, 2019 and 2018, respectively, and $241 and $205 for the nine months ended September 30, 2019 and 2018, respectively. There were no retirements of property and equipment during the nine months ended September 30, 2019 and 2018.

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 $4 and $3 for the three months ended September 30, 2019 and 2018, respectively, and $12 and $8 for the nine months ended September 30, 2019 and 2018, respectively, which related to the construction of our SXM-7 and SXM-8 satellites. We also capitalize a portion of share-based compensation related to employee time for capitalized software projects. Capitalized share-based compensation costs were $2 and $9 for the three and nine months ended September 30, 2019, respectively. We did not capitalize any share-based compensation for the three and nine months ended September 30, 2018.

Satellites

As of September 30, 2019, we owned a fleet of five satellites. The chart below provides certain information on our satellites as of September 30, 2019:

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

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

(9) Leases

We have operating and finance leases for offices, terrestrial repeaters, data centers and certain equipment. Our leases have remaining lease terms of less than 1 year to 18 years, some of which may include options to extend the leases for up to 5 years, and some of which may include options to terminate the leases within 1 year. We elected the practical expedient to account for the lease and non-lease components as a single component. Additionally, we elected the practical expedient to not recognize right-of-use assets or lease liabilities for short-term leases, which are those leases with a term of twelve months or less at the lease commencement date.

The components of lease expense were as follows:

	For the Three Months Ended September 30, 2019	For the Nine Months Ended September 30, 2019
Operating lease cost	$ 22	$ 60
Finance lease cost		
Amortization of right-of-use assets	1	4
Sublease income	(1)	(3)
Total lease cost	$ 22	$ 61

Supplemental cash flow information related to leases was as follows:

	For the Nine Months Ended September 30, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 51
Financing cash flows from finance leases	$ 3
Right-of-use assets obtained in exchange for lease obligations:	
Operating leases	$ 36

Supplemental balance sheet information related to leases was as follows:

	September 30, 2019
Operating Leases	
Operating lease right-of-use assets	$ 428
Operating lease current liabilities	47
Operating lease liabilities	407
Total operating lease liabilities	$ 454

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

	September 30, 2019
Finance Leases	
Property and equipment, gross	$ 15
Accumulated depreciation	(11)
Property and equipment, net	$ 4
Current maturities of debt	$ 2
Long-term debt	1
Total finance lease liabilities	$ 3

	September 30, 2019
Weighted Average Remaining Lease Term	
Operating leases	10 years
Finance leases	2 years

	September 30, 2019
Weighted Average Discount Rate	
Operating leases	5.3%
Finance leases	1.6%

Maturities of lease liabilities were as follows:

	Operating Leases	Finance Leases
Year ending December 31,		
2019 (remaining)	$ 12	$ 1
2020	73	1
2021	63	1
2022	60	—
2023	58	—
Thereafter	320	—
Total future minimum lease payments	586	3
Less imputed interest	(132)	—
Total	$ 454	$ 3

(10) Related Party Transactions

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

Liberty Media

As of September 30, 2019, Liberty Media beneficially owned, directly and indirectly, approximately 71% of the outstanding shares of Holdings' 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 share 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 and the Pandora Acquisition have been reported as related party transactions within our unaudited consolidated financial statements. The share based compensation for Sirius XM employees, Holdings' directors and third parties has been recorded in our unaudited consolidated financial statements. The Related party long-term assets balance as of September 30, 2019 and December 31, 2018 of Sirius XM includes $7,713 and $8,041 respectively, primarily for net amounts due from Holdings in connection with these equity-related transactions.

During the nine months ended September 30, 2019, we used $2,116 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, partially offset by the sale of a capped call security. This amount is included in our Related party long-term asset balance as a receivable due from Holdings.

Sirius XM Canada

In 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. The total consideration from Sirius XM to Sirius XM Canada during the year ended December 31, 2017 was $309, which included $130 in cash and Holdings issued $179 of its common stock to the holders of the shares of Sirius XM Canada acquired in the Transaction. We own 591 shares of preferred stock of Sirius XM Canada, which has a liquidation preference of one Canadian dollar per share. We also made a loan to Sirius XM Canada in the aggregate amount of $131 in connection with the Transaction. 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. During the nine months ended September 30, 2019 and 2018, Sirius XM Canada repaid less than $1 and $3 of the principal amount of the loan, respectively.

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.

Sirius XM Canada is accounted for as an equity method investment, and its results are not consolidated in our unaudited 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.

Our related party long-term assets balance as of September 30, 2019 and December 31, 2018 included the carrying value of our investment balance in Sirius XM Canada of $322 and $311, respectively, and, as of September 30, 2019 and December 31, 2018, also included $129 and $126, respectively, for the long-term value of the outstanding loan to Sirius XM Canada.

Sirius XM Canada paid gross dividends to us of less than $1 during each of the three months ended September 30, 2019 and 2018, and $1 and $2 during the nine months ended September 30, 2019 and 2018, respectively. Dividends are first recorded as a reduction to our investment balance in Sirius XM Canada to the extent a balance exists and then as Other (expense) income for any remaining portion.

We recorded revenue from Sirius XM Canada as Other revenue in our unaudited consolidated statements of comprehensive income of $25 during each of the three months ended September 30, 2019 and 2018, and $73 and $72 for the nine months ended September 30, 2019 and 2018, respectively.

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

Pandora

The $523 preferred stock investment in Pandora as of December 31, 2018 was canceled in conjunction with the Pandora Acquisition. Refer to Note 2 for information on this acquisition.

(11) Debt

Our debt as of September 30, 2019 and December 31, 2018 consisted of the following:

						Carrying value[a] at	
Issuer / Borrower	Issued	Debt	Maturity Date	Interest Payable	Principal Amount at September 30, 2019	September 30, 2019	December 31, 2018
Pandora (b) (c)	December 2015	1.75% Convertible Senior Notes	December 1, 2020	semi-annually on June 1 and December 1	$ 1	$ 1	$ —
Sirius XM (d)	July 2017	3.875% Senior Notes	August 1, 2022	semi-annually on February 1 and August 1	1,000	995	994
Sirius XM (d)	May 2013	4.625% Senior Notes	May 15, 2023	semi-annually on May 15 and November 15	500	498	497
Pandora (b) (e)	June 2018	1.75% Convertible Senior Notes	December 1, 2023	semi-annually on June 1 and December 1	193	225	—
Sirius XM (d) (h)	May 2014	6.00% Senior Notes	July 15, 2024	semi-annually on January 15 and July 15	—	—	1,490
Sirius XM (d) (i)	July 2019	4.625% Senior Notes	July 15, 2024	semi-annually on January 15 and July 15	1,500	1,484	—
Sirius XM (d)	March 2015	5.375% Senior Notes	April 15, 2025	semi-annually on April 15 and October 15	1,000	993	992
Sirius XM (d)	May 2016	5.375% Senior Notes	July 15, 2026	semi-annually on January 15 and July 15	1,000	992	991
Sirius XM (d)	July 2017	5.00% Senior Notes	August 1, 2027	semi-annually on February 1 and August 1	1,500	1,488	1,487
Sirius XM (d) (g)	June 2019	5.500% Senior Notes	July 1, 2029	semi-annually on January 1 and July 1	1,250	1,236	—
Sirius XM (f)	December 2012	Senior Secured Revolving Credit Facility (the "Credit Facility")	June 29, 2023	variable fee paid quarterly	65	65	439
Sirius XM	Various	Finance leases	Various	n/a	n/a	3	5
Total Debt						7,980	6,895
Less: total current maturities						2	3
Less: total deferred financing costs						10	7
Total long-term debt						$ 7,968	$ 6,885

(a) The carrying value of the obligations is net of any remaining unamortized original issue discount.
(b) Holdings has unconditionally guaranteed all of the payment obligations of Pandora under these notes.
(c) We acquired $152 in principal amount of the 1.75% Convertible Senior Notes due 2020 as part of the Pandora Acquisition. On February 14, 2019, Pandora announced a tender offer to repurchase for cash any and all of its outstanding 1.75% Convertible Senior Notes due 2020 at a price equal to 100% of the aggregate principal amount thereof plus accrued and unpaid interest thereon to, but not including, the repurchase date. On March 18, 2019, we purchased $151 in aggregate principal amount of the 1.75% Convertible Senior Notes due 2020 that had been validly tendered and not validly withdrawn in the repurchase offer. We recorded a $1 Loss on extinguishment of debt in connection with this transaction. In addition, we unwound a capped call security acquired as part of the Pandora Acquisition in March 2019 for $3.

(d) All material domestic subsidiaries, including Pandora and its subsidiaries, that guarantee the Credit Facility have guaranteed these notes.
(e) We acquired $193 in principal amount of the 1.75% Convertible Senior Notes due 2023 as part of the Pandora Acquisition. We elected to record the 1.75% Convertible Senior Notes due 2023 at fair value which will be remeasured each reporting period. The changes in fair value will be recorded in our unaudited consolidated statements of operations. The 1.75% Convertible Senior Notes due 2023 were not convertible into Holdings' common stock and not redeemable as of September 30, 2019. As a result, we have classified the debt as Long-term within our unaudited consolidated balance sheets.
(f) The $1,750 Credit Facility expires in June 2023. Our obligations under the Credit Facility are guaranteed by certain of our material domestic subsidiaries, including Pandora and its 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 September 30, 2019. Our outstanding borrowings under the Credit Facility are classified as Long-term debt within our unaudited consolidated balance sheets due to the long-term maturity of this debt. Additionally, the amount available for future borrowing under the Credit Facility is reduced by letters of credit issued for the benefit of Pandora, which were $1 as of September 30, 2019.
(g) On June 7, 2019, we issued $1,250 aggregate principal amount of the 5.500% Senior Notes due 2029 with a net original issuance discount and deferred financing costs in the aggregate of $16.
(h) On July 18, 2019, we redeemed $1,500 in outstanding principal amount of the 6.00% Senior Notes due 2024 for an aggregate purchase price, including premium and interest, of $1,546. We recognized $56 to Loss on extinguishment of debt, consisting primarily of unamortized discount, deferred financing fees and redemption premium, as a result of this redemption.
(i) On July 2, 2019 we issued $1,500 aggregate principal amount of the 4.625% Senior Notes due 2024 with a net original issuance discount and deferred financing costs in the aggregate of $19.

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.

Pandora Convertible Notes

Pandora's 1.75% Convertible Senior Notes due 2020 (the “Pandora 2020 Notes”) and Pandora's 1.75% Convertible Senior Notes due 2023 (the “Pandora 2023 Notes” and, together with the Pandora 2020 Notes, the “Pandora Convertible Notes”) are unsecured, senior obligations of Pandora. Holdings has guaranteed the payment and performance obligations of Pandora under the Pandora Convertible Notes and the indentures governing the Pandora Convertible Notes.

The Pandora 2020 Notes will mature on December 1, 2020, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms. Upon consummation of the Pandora Acquisition, the conversion rate applicable to the Pandora 2020 Notes was 87.7032 shares of Holdings’ common stock per $1,000 principal amount of the Pandora 2020 Notes. Pandora has irrevocably elected and determined to settle all conversion obligations from and after February 1, 2019 with respect to the Pandora 2020 Notes solely in cash. During the nine months ended September 30, 2019, Pandora purchased $151 in aggregate principal amount of the Pandora 2020 Notes. See footnote (c) to the table above.

The Pandora 2023 Notes will mature on December 1, 2023, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms. Upon consummation of the Pandora Acquisition, the conversion rate applicable to the Pandora 2023 Notes was 150.4466 shares of Holdings common stock per $1,000 principal amount of the Pandora 2023 Notes.

The indentures governing the Pandora Convertible Notes contain covenants that limit Pandora's ability to merge or consolidate and provide for customary events of default, which include nonpayment of principal or interest, breach of covenants, payment defaults or acceleration of other indebtedness and certain events of bankruptcy.

At September 30, 2019 and December 31, 2018, 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 shares of common stock. As of September 30, 2019 and 2018, there were 0.001 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 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 September 30, 2019 and 2018.

(13) Benefit Plans

We recognized share-based payment expense of $65 and $29 for the three months ended September 30, 2019 and 2018, respectively, and $192 and $100 for the nine months ended September 30, 2019 and 2018, respectively. This amount includes $21 of share-based compensation expense recorded in Acquisition and other related costs in our unaudited consolidated statements of comprehensive income during the nine months ended September 30, 2019.

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 September 30, 2019, 149 shares of common stock were available for future grants under the 2015 Plan.

In connection with the Pandora Acquisition, Holdings assumed all shares available for issuance (including any shares that later become available for issuance in accordance with the terms of the applicable plans) under each of the 2014 Stock Incentive Plan of AdsWizz Inc., the Pandora Media, Inc. 2011 Equity Incentive Plan, the Pandora Media, Inc. 2004 Stock Plan and the TheSavageBeast.com, Inc. 2000 Stock Incentive Plan, which were previously approved by stockholders of Pandora or the applicable adopting entity. All shares available under these stock plans became additional shares available for grant pursuant to the terms of the 2015 Plan (as adjusted, to the extent appropriate, to reflect the application of the exchange ratio). Subject to certain limitations set forth in the 2015 Plan, such shares may be used for awards under the 2015 Plan.

Other Plans

We maintain six additional share-based benefit plans — the Sirius XM Radio Inc. 2009 Long-Term Stock Incentive Plan, the Amended and Restated Sirius Satellite Radio 2003 Long-Term Stock Incentive Plan, the 2014 Stock Incentive Plan of AdsWizz Inc., the Pandora Media, Inc. 2011 Equity Incentive Plan, the Pandora Media, Inc. 2004 Stock Plan and the TheSavageBeast.com, Inc. 2000 Stock Incentive Plan. Excluding dividend equivalent units granted as a result of a declared dividend, no further awards may be made under these plans.

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

The following table summarizes the weighted-average assumptions used to compute the fair value of options granted to employees:

	For the Three Months Ended September 30,	For the Nine Months Ended September 30,	
	2018	2019	2018
Risk-free interest rate	2.8%	2.5%	2.7%
Expected life of options — years	4.98	3.36	4.44
Expected stock price volatility	23%	26%	23%
Expected dividend yield	0.6%	0.8%	0.7%

There were no options granted to employees during the three months ended September 30, 2019.

The following table summarizes stock option activity under Holdings' share-based plans for the nine months ended September 30, 2019:

	Options	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2018	243	$ 4.22		
Options granted in connection with Pandora Acquisition	7	$ 3.85		
Granted	13	$ 6.00		
Exercised	(32)	$ 3.48		
Forfeited, cancelled or expired	(3)	$ 5.50		
Outstanding as of September 30, 2019	228	$ 4.39	5.75	$ 440
Exercisable as of September 30, 2019	159	$ 3.93	5.08	$ 374

The weighted average grant date fair value per share of stock options granted during the nine months ended September 30, 2019 was $1.26. The total intrinsic value of stock options exercised during the nine months ended September 30, 2019 and 2018 was $83 and $206, respectively.

In connection with the Pandora Acquisition, each option granted by Pandora under its stock incentive plans to purchase shares of Pandora common stock, whether vested or unvested, was assumed and converted into an option to purchase shares of Holdings' common stock, with appropriate adjustments (based on the 1.44 exchange ratio) to the exercise price and number of shares of Holdings' common stock subject to such option, and has the same vesting schedule and exercise conditions as in effect as of immediately prior to the closing of the Pandora Acquisition; provided, that any Pandora stock option that had an exercise price per share that was equal to or greater than the value, at the closing of the Pandora Acquisition, of Holdings' common stock issued as merger consideration in exchange for each share of Pandora common stock, was canceled without payment. We recorded $8 to Goodwill related to pre-acquisition replacement equity awards attributable to pre-combination service.

We recognized share-based payment expense associated with stock options of $14 and $11 for the three months ended September 30, 2019 and 2018, respectively, and $49 and $52 for the nine months ended September 30, 2019 and 2018, respectively.

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

The following table summarizes the restricted stock unit, including PRSU, activity under our share-based plans for the nine months ended September 30, 2019:

	Shares	Grant Date Fair Value Per Share
Nonvested as of December 31, 2018	35	$ 5.50
Units granted in connection with Pandora Acquisition	48	$ 5.83
Granted	37	$ 5.97
Vested	(32)	$ 5.48
Forfeited	(6)	$ 5.82
Nonvested as of September 30, 2019	82	$ 5.89

The total intrinsic value of restricted stock units, including PRSUs, vesting during the nine months ended September 30, 2019 and 2018 was $192 and $76, respectively. During the nine months ended September 30, 2019, we granted 5 PRSUs to certain employees. We believe it is probable that the performance target applicable to these PRSUs will be achieved.

In connection with the Pandora Acquisition, each unvested restricted stock unit granted by Pandora under its stock incentive plans was assumed and converted into an unvested restricted stock unit of Holdings, with appropriate adjustments (based on the 1.44 exchange ratio) to the number of shares of Holding's common stock to be received, and has the same vesting schedule and settlement date as in effect as of immediately prior to the closing of the Pandora Acquisition. We recorded $62 to Goodwill related to pre-acquisition replacement equity awards attributable to pre-combination service.

In connection with the cash dividend paid during the nine months ended September 30, 2019, we granted less than 1 restricted stock units, 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 nine months ended September 30, 2019.

We recognized share-based payment expense associated with restricted stock units, including PRSUs, of $51 and $18 for the three months ended September 30, 2019 and 2018, respectively, and $143 and $48 for the nine months ended September 30, 2019 and 2018, 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 September 30, 2019 and December 31, 2018 was $476 and $254, respectively. The total unrecognized compensation costs at September 30, 2019 are expected to be recognized over a weighted-average period of 2.3 years.

401(k) Savings Plans

Sirius XM Radio Inc. 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 expenses of $2 for both the three months ended September 30, 2019 and 2018, and $6 for both the nine months ended September 30, 2019 and 2018, in connection with the Sirius XM Plan.

Pandora Media, LLC 401(k) Profit Sharing Plan and Trust

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

Pandora sponsors the Pandora Media, LLC 401(k) Profit Sharing Plan and Trust (the "Pandora Plan") for eligible employees. The Pandora Plan allows eligible employees to voluntarily contribute from 1% to 75% of their pre-tax eligible earnings, subject to certain defined limits. There is no employer matching of employee contributions under the Pandora Plan.

Sirius XM Holdings Inc. Deferred Compensation Plan

The Sirius XM Holdings Inc. Deferred Compensation Plan (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 both the three months ended September 30, 2019 and 2018 were less than $1, and were $7 for both the nine months ended September 30, 2019 and 2018. As of September 30, 2019 and December 31, 2018, the fair value of the investments held in the trust were $32 and $22, respectively, which is included in Other long-term assets in our unaudited consolidated balance sheets and classified as trading securities. Trading gains and losses associated with these investments are recorded in Other (expense) income within our unaudited consolidated statements of comprehensive income. The associated liability is recorded within Other long-term liabilities in our unaudited consolidated balance sheets, and any increase or decrease in the liability is recorded in General and administration expense within our unaudited consolidated statements of comprehensive income. For the three and nine months ended September 30, 2019 and 2018, we recorded an immaterial amount of unrealized gains on investments held in the trust.

(14) Commitments and Contingencies

The following table summarizes our expected contractual cash commitments as of September 30, 2019:

	2019	2020	2021	2022	2023	Thereafter	Total
Debt obligations	$ 1	$ 2	$ 1	$ 1,000	$ 758	$ 6,250	$ 8,012
Cash interest payments	41	400	393	393	340	1,024	2,591
Satellite and transmission	63	51	4	2	1	3	124
Programming and content	73	321	220	145	82	139	980
Sales and marketing	17	46	28	21	9	11	132
Satellite incentive payments	4	10	9	9	9	53	94
Operating lease obligations	13	76	61	53	46	172	421
Advertising sales commitments	8	20	15	—	—	—	43
Royalties, minimum guarantees and other	72	219	135	62	17	7	512
Total (1)	$ 292	$ 1,145	$ 866	$ 1,685	$ 1,262	$ 7,659	$ 12,909

(1) The table does not include our reserve for uncertain tax positions, which at September 30, 2019 totaled $8.

Debt obligations. Debt obligations include principal payments on outstanding debt and finance 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 brands and are obligated to make payments to sponsors, retailers, automakers, radio manufacturers and other third parties 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 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.

Maxar Technologies (formerly 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, terrestrial repeaters, data centers and equipment. 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.

Advertising Sales Commitments. We have entered into agreements with third parties that contain minimum advertising sales guarantees and require that we make guaranteed payments. As of September 30, 2019, we had future minimum guarantee commitments of $43, of which $8 will be paid in 2019 and the remainder will be paid thereafter. On a quarterly basis, we record the greater of the cumulative actual expense incurred or the cumulative minimum guarantee based on our forecast for the minimum guarantee period. The minimum guarantee period is the period of time that the minimum guarantee relates to, as specified in the agreement, which may be annual or a longer period.

Royalties, Minimum Guarantees and Other. We have entered into music royalty arrangements that include fixed payments. Certain of our content agreements also contain minimum guarantees and require that we make upfront minimum guaranteed payments. During the nine months ended September 30, 2019, we prepaid $22 in content costs related to minimum guarantees. As of September 30, 2019, we have future fixed minimum guarantee commitments of $80, of which $18 will be paid in 2019 and the remainder will be paid thereafter. On a quarterly basis, we record the greater of the cumulative actual content costs incurred or the cumulative minimum guarantee based on forecasted usage for the minimum guarantee period. The minimum guarantee period is the period of time that the minimum guarantee relates to, as specified in each agreement, which may be annual or a longer period. The cumulative minimum guarantee, based on forecasted usage, considers factors such as listening hours, revenue, subscribers and other terms of each agreement that impact our expected attainment or recoupment of the minimum guarantees based on the relative attribution method.

Several of our content agreements also include provisions related to the royalty payments and structures of those agreements relative to other content licensing arrangements, which, if triggered, could cause our payments under those agreements to escalate. In addition, record labels, publishers and performing rights organizations ("PROs") with whom we have entered into direct license agreements have the right to audit our content payments, and any such audit could result in disputes over whether we have paid the proper content costs.

We have also entered into various agreements with third parties for general operating purposes. The cost of Holdings' common stock acquired in Holdings' capital return program but not paid for as of September 30, 2019 was also included in this category.

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 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.

Following a mediation, in April 2019, we entered into an agreement to settle this purported class action suit. The settlement resolves the claims of consumers for the period October 2013 through January 2019. As part of the settlement, we paid $25 into a non-reversionary settlement fund from which cash to class members, notice, administrative costs, and attorney's fees and costs will be paid. The settlement also contemplates that we will provide three months of service to our All Access subscription package for those members of the class that elect to receive it, in lieu of cash, at no cost to those class members and who are not active subscribers at the time of the distribution. The availability of this three-month service option will not diminish the $25 common fund. As part of the settlement, we will also implement certain changes relating to our “Do-Not-Call” practices and telemarketing programs. Settlement of this matter is subject to, among other things, final approval by the Court.

Pre-1972 Sound Recording Litigation. On October 2, 2014, Flo & Eddie Inc. filed a class action suit against Pandora in the federal district court for the Central District of California. The complaint alleges a violation of California Civil Code Section 980, unfair competition, misappropriation and conversion in connection with the public performance of sound recordings recorded prior to February 15, 1972 (which we refer to as, "pre-1972 recordings"). On December 19, 2014, Pandora filed a motion to strike the complaint pursuant to California’s Anti-Strategic Lawsuit Against Public Participation ("Anti-SLAPP") statute, which following denial of Pandora’s motion was appealed to the Ninth Circuit Court of Appeals. In March 2017, the Ninth Circuit requested certification to the California Supreme Court on the substantive legal questions. The California Supreme Court accepted certification. In May 2019, the California Supreme Court issued an order dismissing consideration of the certified questions on the basis that, following the enactment of the Orrin G. Hatch-Bob Goodlatte Music Modernization Act, Pub. L. No. 115-264, 132 Stat. 3676 (2018) (the “MMA”), resolution of the questions posed by the Ninth Circuit Court of Appeals was no longer “necessary to . . . settle an important question of law.”

In September and October 2015, Arthur and Barbara Sheridan filed separate class action suits against Pandora in the federal district courts for the Northern District of California and the District of New Jersey. The complaints allege a variety of violations of common law and state copyright statutes, common law misappropriation, unfair competition, conversion, unjust enrichment and violation of rights of publicity arising from allegations that Pandora owes royalties for the public performance of pre-1972 recordings. The *Sheridan* actions in California and New Jersey are currently stayed pending the Ninth Circuit's decision in *Flo & Eddie, Inc. v. Pandora Media, Inc*.

In September 2016, Ponderosa Twins Plus One and others filed a class action suit against Pandora alleging claims similar to those asserted in *Flo & Eddie, Inc. v. Pandora Media Inc*. This action is also currently stayed in the Northern District of California pending the Ninth Circuit's decision in *Flo & Eddie, Inc. v. Pandora Media, Inc*.

The MMA grants a newly available federal preemption defense to the claims asserted in the aforementioned lawsuits. In July 2019, Pandora made the required payments and reporting under the MMA for certain of its uses of pre-1972 recordings to avail itself of this federal preemption defense. Based on the federal preemption contained in the MMA (along with other considerations), Pandora asked the Ninth Circuit to order the dismissal of the *Flo & Eddie, Inc. v. Pandora Media, Inc.* case. On October 17, 2019, the Ninth Circuit Court of Appeals issued a memorandum disposition concluding that the question of whether the MMA preempts Flo and Eddie's claims challenging Pandora's performance of pre-1972 recordings "depends on various unanswered factual questions" and remanded the case to the District Court for further proceedings.

When the stays in the remaining cases - the two *Sheridan v. Pandora Media, Inc.* cases and the *Ponderosa Twins Plus One et al. v. Pandora Media* case - are lifted, Pandora expects to file motions to dismiss those actions as well.

We believe we have substantial defenses to the claims asserted in these actions, and we intend to defend these actions vigorously.

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) Segments and Geographic Information

In accordance with FASB ASC Topic 280, *Segment Reporting*, we disaggregate our operations into two reportable segments: Sirius XM and Pandora. The change in segment reporting is due to the acquisition of Pandora. The financial results of these segments are utilized by the chief operating decision maker, who is our Chief Executive Officer, for evaluating segment performance and allocating resources. Our reportable segments have been determined based on our internal management structure. For additional information on our segments refer to Note 1.

Segment results include the revenues and cost of services which are directly attributable to each segment. There are no indirect revenues or costs incurred that are allocated to the segments. There are planned intersegment advertising campaigns which will be eliminated. We had less than $1 of intersegment advertising revenue during the three and nine months ended September 30, 2019.

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

Segment revenue and gross profit were as follows during the periods presented:

	For the Three Months Ended September 30, 2019		
	Sirius XM	Pandora	Total
Revenue			
Subscriber revenue	$ 1,424	$ 132	$ 1,556
Advertising revenue	51	315	366
Equipment revenue	45	—	45
Other revenue	44	—	44
Total revenue	1,564	447	2,011
Cost of services [(a)]	(597)	(273)	(870)
Segment gross profit	$ 967	$ 174	$ 1,141

The reconciliation between reportable segment gross profit to consolidated income before income tax is as follows:

	Three Months Ended September 30, 2019
Segment Gross Profit	$ 1,141
Subscriber acquisition costs	(101)
Sales and marketing [(a)]	(210)
Engineering, design and development [(a)]	(63)
General and administrative [(a)]	(108)
Depreciation and amortization	(118)
Share-based payment expense	(65)
Total other (expense) income	(160)
Consolidated income before income taxes	$ 316

(a) Share-based payment expense of $11 related to cost of services, $23 related to sales and marketing, $15 related to engineering, design and development and $16 related to general and administrative has been excluded.

	For the Nine Months Ended September 30, 2019		
	Sirius XM	Pandora	Total
Revenue			
Subscriber revenue	$ 4,196	$ 355	$ 4,551
Advertising revenue	149	784	933
Equipment revenue	127	—	127
Other revenue	121	—	121
Total revenue	4,593	1,139	5,732
Cost of services [(b)]	(1,761)	(720)	(2,481)
Segment gross profit	$ 2,832	$ 419	$ 3,251

The reconciliation between reportable segment gross profit to consolidated income before income tax is as follows:

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

	Nine Months Ended September 30, 2019
Segment Gross Profit	$ 3,251
Subscriber acquisition costs	(313)
Sales and marketing [(b)]	(591)
Engineering, design and development [(b)]	(169)
General and administrative [(b)]	(332)
Depreciation and amortization	(344)
Share-based payment expense	(171)
Acquisition and other related costs	(83)
Total other (expense) income	(350)
Consolidated income before income taxes	$ 898

(b) Share-based payment expense of $30 related to cost of services, $57 related to sales and marketing, $37 related to engineering, design and development and $47 related to general and administrative has been excluded.

A measure of segment assets is not currently provided to the Chief Executive Officer and has therefore not been provided.

As of September 30, 2019, long-lived assets were predominantly located in the United States. No individual foreign country represented a material portion of our consolidated revenue during the three and nine months ended September 30, 2019.

(16) Income Taxes

For the three months ended September 30, 2019 and 2018, income tax expense was $70 and $12, respectively, and $227 and $162 for the nine months ended September 30, 2019 and 2018, respectively.

Our effective tax rate for the three months ended September 30, 2019 and 2018 was 22.2% and 3.3%, respectively. Our effective tax rate for the nine months ended September 30, 2019 and 2018 was 25.3% and 14.9%, respectively. The effective tax rate for the three months ended September 30, 2019 was primarily impacted by the recognition of excess tax benefits related to share based compensation. The effective tax rate for the nine months ended September 30, 2019 was primarily impacted by the increase to the valuation allowance related to the federal research and development credits that are no longer expected to be realizable. The effective tax rate for the three and nine months ended September 30, 2018 was primarily impacted by the recognition of excess tax benefits related to share based compensation and a benefit related to state research and development credits. We estimate our effective tax rate for the year ending December 31, 2019 will be approximately 24%.

As of September 30, 2019 and December 31, 2018, we had a valuation allowance related to deferred tax assets of $86 and $66, respectively, that were not likely to be realized due to certain net operating loss limitations, including tax credits, and acquired net operating losses that were not more likely than not going to be utilized.

(17) Subsequent Events

Holdings' Capital Return Program

For the period from October 1, 2019 to October 29, 2019 we repurchased $54 of Holdings' common stock on the open market, including fees and commissions.

On October 10, 2019, Holdings' board of directors declared a quarterly dividend on Holdings' common stock in the amount of $0.01331 per share of Holdings' common stock payable on November 29, 2019 to Holdings' stockholders of record as of the close of business on November 8, 2019.

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

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

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

Special Note Regarding Forward-Looking Statements

The following cautionary statements identify important factors that could cause our actual results to differ materially from those projected in forward-looking statements made in this Quarterly Report and in other reports and documents published by us from time to time. Any statements about our beliefs, plans, objectives, expectations, assumptions, future events or performance are not historical facts and may be forward-looking. These statements are often, but not always, made through the use of words or phrases such as "will likely result," "are expected to," "will continue," "is anticipated," "estimated," "intend," "plan," "projection" and "outlook." Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this Quarterly Report and in other reports and documents published by us from time to time, including the risk factors described under "Risk Factors" in Part II, Item 1A, of Holdings' Form 10-Q for the quarter ended March 31, 2019 and "Management's Discussion and Analysis of Financial Condition and Results of Operations" herein and in Part II, Item 7, of Holdings' Annual Report on Form 10-K for the year ended December 31, 2018.

Among the significant factors that could cause our actual results to differ materially from those expressed in the forward-looking statements are:

- We face substantial competition and that competition is likely to increase over time
- If our efforts to attract and retain subscribers and listeners, or convert listeners into subscribers, are not successful, our business will be adversely affected
- We engage in extensive marketing efforts and the continued effectiveness of those efforts are an important part of our business
- A substantial number of our subscribers periodically cancel their subscriptions and we cannot predict how successful we will be at retaining customers
- Our ability to profitably attract and retain subscribers as our marketing efforts reach more price-sensitive consumers is uncertain
- Our failure to convince advertisers of the benefits of our ad-supported service could harm our business
- If we are unable to maintain revenue growth from our advertising products, particularly in mobile advertising, our results of operations will be adversely affected
- If we fail to accurately predict and play music, comedy or other content that our listeners enjoy, we may fail to retain existing and attract new listeners
- If we fail to protect the security of personal information about our customers, we could be subject to costly government enforcement actions and private litigation and our reputation could suffer
- Interruption or failure of our information technology and communications systems could impair the delivery of our service and harm our business
- Privacy and data security laws and regulations may impose legal liabilities and may hinder our ability to sell advertising
- Consumer protection laws and our failure to comply with them could damage our business
- We rely on third parties for the operation of our business, and the failure of third parties to perform could adversely affect our business
- Our business depends in part upon the auto industry
- Our Pandora business depends in part upon consumer electronics manufacturers
- The market for music rights is changing and is subject to significant uncertainties
- Our ability to offer interactive features in our Pandora services depends upon maintaining licenses with copyright owners
- The rates we must pay for "mechanical rights" to use musical works on our Pandora service have increased substantially and these new rates may adversely affect our business
- Our use of pre-1972 sound recordings on our Pandora service could result in additional costs
- Failure of our satellites would significantly damage our business
- Our Sirius XM service may experience harmful interference from new wireless operations
- Failure to comply with FCC requirements could damage our business
- Economic conditions, including advertising budgets and discretionary spending, may adversely affect our business and operating results
- If we are unable to attract and retain qualified personnel, our business could be harmed

- We may not realize the benefits of acquisitions or other strategic investments and initiatives, including the acquisition of Pandora
- We may from time to time modify our business plan, and these changes could adversely affect us and our financial condition
- We have a significant amount of indebtedness, and our debt contains certain covenants that restrict our operations
- Our facilities could be damaged by natural catastrophes or terrorist activities
- The unfavorable outcome of pending or future litigation could have an adverse impact on our operations and financial condition
- Failure to protect our intellectual property or actions by third parties to enforce their intellectual property rights could substantially harm our business and operating results
- Some of our services and technologies may use “open source” software, which may restrict how we use or distribute our services or require that we release the source code subject to those licenses
- Rapid technological and industry changes and new entrants could adversely impact our services
- Existing or future laws and regulations could harm our business
- We may be exposed to liabilities that other entertainment service providers would not customarily be subject to
- Our business and prospects depend on the strength of our brands
- Holdings is a “controlled company” within the meaning of the NASDAQ listing rules and, as a result, qualify for, and rely on, exemptions from certain corporate governance requirements
- While Holdings currently pays a quarterly cash dividend to holders of Holding's common stock, Holdings may change its dividend policy at any time
- Holdings' principal stockholder has significant influence, including over actions requiring stockholder approval, and its interests may differ from the interests of other holders of our common stock

Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any of these forward-looking statements. In addition, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which the statement is made, to reflect the occurrence of unanticipated events or otherwise, 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.

Recent Developments

On February 1, 2019, through a series of transactions, Pandora Media, Inc., became an indirect wholly owned subsidiary of Sirius XM and continues to operate as Pandora Media, LLC (the “Pandora Acquisition”).

Each share of Pandora common stock, par value $0.0001 per share, outstanding immediately prior to the consummation of the transactions, was converted into 1.44 shares (the “Exchange Ratio”) of Holdings' common stock.

Further, pursuant to the transactions:

- Each option granted by Pandora under its stock incentive plans to purchase shares of Pandora common stock, whether vested or unvested, was 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 has the same vesting schedule and exercise conditions as in effect as of immediately prior to the closing of the transactions; provided that any Pandora stock option that had an exercise price per share that was equal to or greater than the value, at the closing of the transactions, of Holdings' common stock issued as merger consideration in exchange for each share of Pandora common stock, was canceled without payment therefore; and

- Each unvested restricted stock unit granted by Pandora under its stock incentive plans was 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 has the same vesting schedule and settlement date as in effect as of immediately prior to the closing of the transactions.

In connection with the transaction, Holdings issued in the aggregate $2,355 of its common stock and assumed $345 in aggregate principal amount of Pandora’s outstanding debt.

Executive Summary

We operate two complementary audio entertainment businesses - our Sirius XM business and our Pandora business.

Sirius XM

Our Sirius XM business features music, sports, entertainment, comedy, talk, news, traffic and weather channels, as well as infotainment services, in the United States on a subscription fee basis. Our service is distributed through our two proprietary satellite radio systems and through the internet via applications for mobile devices, home devices and other consumer electronic equipment. Satellite radios are primarily distributed through automakers, retailers and our website. Our Sirius XM service is also available through our user interface, which we call "360L," that combines our satellite and streaming services into a single, cohesive in-vehicle entertainment experience. The primary source of revenue from our Sirius XM business is generated from subscription fees, with most of our customers subscribing to monthly, quarterly, semi-annual or annual plans. We also derive revenue from advertising on select non-music channels, direct sales of our satellite radios and accessories, and other ancillary services. As of September 30, 2019, our Sirius XM business had approximately 34.6 million subscribers.

In addition to our audio entertainment businesses, we provide connected vehicle services to several automakers and directly to consumers through aftermarket devices. These services are designed to enhance the safety, security and driving experience of consumers. We also offer a suite of data services that includes graphical weather, fuel prices, sports schedules and scores and movie listings, a traffic information service that includes information as to road closings, traffic flow and incident data to consumers with compatible in-vehicle navigation systems, and real-time weather services designed for improving situational awareness in vehicles, boats and planes.

Sirius XM also holds a 70% equity interest and 33% voting interest in Sirius XM Canada Holdings Inc. ("Sirius XM Canada"). Sirius XM Canada's subscribers are not included in our subscriber count or subscriber-based operating metrics.

Pandora

Our Pandora business operates a music, comedy and podcast streaming discovery platform, offering a personalized experience for each listener wherever and whenever they want to listen, whether through mobile devices, car speakers or connected devices. Pandora enables listeners to create personalized stations and playlists, discover new content, hear artist- and expert-curated playlists, podcasts and select Sirius XM content as well as search and play songs and albums on-demand. Pandora is available as an ad-supported radio service, a radio subscription service, called Pandora Plus, and an on-demand subscription service, called Pandora Premium. As of September 30, 2019, Pandora had approximately 6.3 million subscribers. The majority of revenue from our Pandora business is generated from advertising on our Pandora ad-supported radio service. In addition, as a result of the May 2018 acquisition of AdsWizz Inc. by Pandora, we provide a comprehensive digital audio advertising technology platform, which connects audio publishers and advertisers. As of September 30, 2019, our Pandora business had approximately 63.1 million monthly active users.

Liberty Media

As of September 30, 2019, Liberty Media beneficially owned, directly and indirectly, approximately 71% 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.

Presentation

This Quarterly Report for the three and nine months ended September 30, 2019, includes our unaudited results compared with the three and nine months ended September 30, 2018. The discussion of our results of operations for the three and nine months ended September 30, 2019 includes the financial results of Pandora from February 1, 2019, the date of the Pandora Acquisition, while the results of operations for the three and nine months ended September 30, 2018 do not include the results of Pandora since that was prior to the Pandora Acquisition. We also include unaudited information on the revenues and costs of services of each of our segments compared with the three and nine months ended September 30, 2018. The absence of the Pandora results for January 2019 and from the three and nine months ended September 30, 2018 may render the comparison of the unaudited actual results for the three and nine months ended September 30, 2019 to the prior period less meaningful.

We have also included in this Quarterly Report for the three and nine months ended September 30, 2019 *pro forma* unaudited results compared with the three and nine months ended September 30, 2018. We also include *pro forma* unaudited information on the revenues and costs of sales of each of our segments compared with the three and nine months ended

September 30, 2018. These *pro forma* results assume that the Pandora Acquisition occurred on January 1, 2018 and eliminate the effect of certain purchase accounting adjustments associated with the Pandora Acquisition.

We have also included in this Quarterly Report certain financial performance measures for our company as well as for our Sirius XM and our Pandora businesses, when applicable, some of which are not calculated and presented in accordance with generally accepted accounting principles in the United States (“Non-GAAP”). These Non-GAAP items include free cash flow and adjusted EBITDA. We also present certain operating performance measures. These financial and operating performance measures are also presented on a *pro forma* basis and assume that the Pandora Acquisition occurred on January 1, 2018 and eliminate the effect of certain purchase accounting adjustments associated with the Pandora Acquisition. See “Key Financial and Operating Performance Metrics,” for more information on these performance measures.

Results of Operations

Unaudited Actual Results

Set forth below are our results of operations for the three and nine months ended September 30, 2019 compared with the three and nine months ended September 30, 2018. The inclusion of Pandora's results in the three and nine months ended September 30, 2019 (since the date of the Pandora acquisition of February 1, 2019) may render direct comparisons with results for prior periods less meaningful. The results of operations are presented for each of our reporting segments for revenue and cost of services and on a consolidated basis for all other items.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,		2019 vs 2018 Change			
					Three Months		Nine Months	
	2019	2018	2019	2018	Amount	%	Amount	%
Revenue								
Sirius XM:								
Subscriber revenue	$ 1,424	$ 1,340	$ 4,196	$ 3,903	$ 84	6 %	$ 293	8 %
Advertising revenue	51	46	149	135	5	11 %	14	10 %
Equipment revenue	45	41	127	113	4	10 %	14	12 %
Other revenue	44	40	121	124	4	10 %	(3)	(2)%
Total Sirius XM revenue	1,564	1,467	4,593	4,275	97	7 %	318	7 %
Pandora:								
Subscriber revenue	132	—	355	—	132	nm	355	nm
Advertising revenue	315	—	784	—	315	nm	784	nm
Total Pandora revenue	447	—	1,139	—	447	nm	1,139	nm
Total consolidated revenue	2,011	1,467	5,732	4,275	544	37 %	1,457	34 %
Cost of services								
Sirius XM:								
Revenue share and royalties	358	343	1,065	1,057	15	4 %	8	1 %
Programming and content	113	96	328	303	17	18 %	25	8 %
Customer service and billing	99	95	296	284	4	4 %	12	4 %
Transmission	29	24	79	70	5	21 %	9	13 %
Cost of equipment	8	7	20	22	1	14 %	(2)	(9)%
Total Sirius XM cost of services	607	565	1,788	1,736	42	7 %	52	3 %
Pandora:								
Revenue share and royalties	234	—	619	—	234	nm	619	nm
Programming and content	3	—	10	—	3	nm	10	nm
Customer service and billing	20	—	56	—	20	nm	56	nm
Transmission	17	—	38	—	17	nm	38	nm
Total Pandora cost of services	274	—	723	—	274	nm	723	nm
Total consolidated cost of services	881	565	2,511	1,736	316	56 %	775	45 %
Subscriber acquisition costs	101	109	313	352	(8)	(7)%	(39)	(11)%
Sales and marketing	233	117	648	344	116	99 %	304	88 %
Engineering, design and development	78	31	206	89	47	152 %	117	131 %
General and administrative	124	86	379	264	38	44 %	115	44 %
Depreciation and amortization	118	76	344	222	42	55 %	122	55 %
Acquisition and other related costs	—	—	83	—	—	nm	83	nm
Total operating expenses	1,535	984	4,484	3,007	551	56 %	1,477	49 %
Income from operations	476	483	1,248	1,268	(7)	(1)%	(20)	(2)%
Other (expense) income:								
Interest expense	(103)	(86)	(287)	(263)	(17)	(20)%	(24)	(9)%
Loss on extinguishment of debt	(56)	—	(57)	—	(56)	nm	(57)	nm
Other (expense) income	(11)	(42)	(9)	82	31	nm	(91)	nm
Total other (expense) income	(170)	(128)	(353)	(181)	(42)	nm	(172)	nm
Income before income taxes	306	355	895	1,087	(49)	(14)%	(192)	(18)%
Income tax expense	(70)	(12)	(227)	(162)	(58)	(483)%	(65)	(40)%
Net income	$ 236	$ 343	$ 668	$ 925	$ (107)	(31)%	$ (257)	(28)%

nm - not meaningful

Sirius XM Revenue

Refer to page 41 for our discussion on Sirius XM revenue.

Pandora Revenue

Pandora revenue includes actual results for the period from the acquisition date to September 30, 2019. Refer to page 41 for our discussion on Pandora revenue.

Sirius XM Cost of Services

Refer to page 42 for our discussion on Sirius XM cost of services.

Pandora Cost of Services

Pandora cost of services includes actual results for the period from the acquisition date to September 30, 2019. Refer to page 43 for our discussion on Pandora cost of services.

Operating Costs

Subscriber Acquisition Costs are costs associated with our satellite radio and connected vehicle services and 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 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.

For the three months ended September 30, 2019 and 2018, subscriber acquisition costs were $101 and $109, respectively, a decrease of 7%, or $8, and decreased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, subscriber acquisition costs were $313 and $352, respectively, a decrease of 11% or $39, and decreased as a percentage of total revenue. The decreases were driven by reductions to OEM hardware subsidy rates, lower subsidized costs related to the transition of chipsets, and a decrease in the volume of satellite radio installations.

We expect subscriber acquisition costs to fluctuate with OEM installations; however, the subsidized chipsets cost is expected to decline as we transition to a new generation of chipsets. 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 and artist marketing; and personnel related costs including salaries, commissions, and sales support. Marketing costs include expenses related to direct mail, outbound telemarketing, email communications, and digital performance media.

For the three months ended September 30, 2019 and 2018, sales and marketing expenses were $233 and $117, respectively, an increase of 99%, or $116, and increased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, sales and marketing expenses were $648 and $344, respectively, an increase of 88%, or $304, and increased as a percentage of total revenue. The increases were primarily due to the inclusion of Pandora, and additional subscriber communications, retention programs and acquisition 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 and listeners.

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 the design and development costs to incorporate Sirius XM radios into new vehicles manufactured by automakers.

For the three months ended September 30, 2019 and 2018, engineering, design and development expenses were $78 and $31, respectively, an increase of 152%, or $47, and increased as a percentage of total revenue. For the nine months ended

September 30, 2019 and 2018, engineering, design and development expenses were $206 and $89, respectively, an increase of 131%, or $117, and increased as a percentage of total revenue. The increases were driven by the inclusion of Pandora.

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.

For the three months ended September 30, 2019 and 2018, general and administrative expenses were $124 and $86, respectively, an increase of 44%, or $38, and increased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, general and administrative expenses were $379 and $264, respectively, an increase of 44%, or $115, and increased as a percentage of total revenue. The increase for the three month period was primarily driven by the inclusion of Pandora. The increase for the nine month period was primarily driven by the inclusion of Pandora and by a one-time $25 legal settlement reserve associated with certain Do-Not-Call litigation.

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 cost of assets used in operations, including our satellite constellations, property, equipment and intangible assets, over their estimated service lives.

For the three months ended September 30, 2019 and 2018, depreciation and amortization expense was $118 and $76, respectively, an increase of 55%, or $42, and increased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, depreciation and amortization expense was $344 and $222, respectively, an increase of 55%, or $122, and increased as a percentage of total revenue. The increases were driven by the amortization of definite life intangibles resulting from the Pandora Acquisition and higher depreciation costs related to additional assets placed in-service.

Acquisition and Other Related Costs represents expenses associated with the Pandora Acquisition and related reorganization costs.

For the three and nine months ended September 30, 2019, acquisition and other related costs were $0 and $83, respectively. There were no acquisition and other related costs in 2018.

Other (Expense) Income

Interest Expense includes interest on outstanding debt.

For the three months ended September 30, 2019 and 2018, interest expense was $103 and $86, respectively. For the nine months ended September 30, 2019 and 2018, interest expense was $287 and $263, respectively. The increases were primarily driven by higher average debt due to the issuances of the 5.500% Senior Notes due 2029 and the 4.625% Senior Notes due 2024 as well as the inclusion of Pandora debt, partially offset by the redemption of the 6.00% Senior Notes due 2024 and lower interest rates.

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

We recorded a $56 and $57 loss on extinguishment of debt during the three and nine months ended September 30, 2019, respectively. The loss for the nine month period was due to the redemption of $1,500 in principal amount of Sirius XM's 6.00% Senior Notes due 2024 and the repurchase of $151 principal amount of Pandora's 1.75% Convertible Senior Notes due 2020. There was no loss on extinguishment of debt during the three and nine months ended September 30, 2018.

Other (Expense) Income primarily includes realized and unrealized gains and losses, interest and dividend income, our share of the income or loss from our equity investments, and transaction costs related to non-operating investments.

For the three months ended September 30, 2019 and 2018, other (expense) income was $(11) and $(42), respectively. For the nine months ended September 30, 2019 and 2018, other (expense) income was $(9) and $82, respectively. For the three and nine months ended September 30, 2019, we recorded our share of Sirius XM Canada's net loss and losses on other investments, which were partially offset by interest earned on our loan to Sirius XM Canada and trading gains associated with the investments held for our Deferred Compensation Plan. For the three and nine months ended September 30, 2018, other income was driven by unrealized (losses)/gains of $(44) and $74 from a fair value adjustment of our investment in Pandora, respectively, and interest earned on our loan to Sirius XM Canada.

Income Taxes

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

For the three months ended September 30, 2019 and 2018, income tax expense was $70 and $12, respectively, and $227 and $162 for the nine months ended September 30, 2019 and 2018, respectively.

Our effective tax rate for the three months ended September 30, 2019 and 2018 was 22.2% and 3.3%, respectively. Our effective tax rate for the nine months ended September 30, 2019 and 2018 was 25.3% and 14.9%, respectively. The effective tax rate for the three months ended September 30, 2019 was primarily impacted by the recognition of excess tax benefits related to share based compensation. The effective tax rate for the nine months ended September 30, 2019 was primarily impacted by the increase to the valuation allowance related to the federal research and development credits that are no longer expected to be realizable. The effective tax rate for the three and nine months ended September 30, 2018 was primarily impacted by the recognition of excess tax benefits related to share based compensation and a benefit related to state research and development credits. We estimate our effective tax rate for the year ending December 31, 2019 will be approximately 24%.

Additionally, in connection with the Pandora Acquisition, we acquired gross NOL carryforwards of approximately $1,284 for federal income tax purposes. These NOL carryforwards are available to offset future taxable income. The acquired NOLs are limited annually by Section 382 of the Internal Revenue Code but we expect to fully utilize those NOLs within the carryforward period.

Unaudited Pro Forma Results

Set forth below are our pro forma results of operations for the three and nine months ended September 30, 2019 compared with the three and nine months ended September 30, 2018. These pro forma results are based on estimates and assumptions, which we believe are reasonable. They are not the results that would have been realized had the Pandora Acquisition actually occurred on January 1, 2018 and are not indicative of our consolidated results of operations in future periods. The pro forma results primarily include adjustments related to amortization of acquired intangible assets, depreciation of property and equipment, acquisition costs, fair value gain or loss on the Pandora investment and associated tax impacts. Please refer to the Footnotes to Results of Operations (pages 46 through 50) following our discussion of results of operations.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,		2019 vs 2018 Change			
					Three Months		Nine Months	
	2019	2018	2019	2018	Amount	%	Amount	%
Revenue	(Pro Forma)	(Pro Forma)	(Pro Forma)	(Pro Forma)				
Sirius XM:								
Subscriber revenue	$ 1,424	$ 1,340	$ 4,196	$ 3,903	$ 84	6 %	$ 293	8 %
Advertising revenue	51	46	149	135	5	11 %	14	10 %
Equipment revenue	45	41	127	113	4	10 %	14	12 %
Other revenue	46	42	127	130	4	10 %	(3)	(2)%
Total Sirius XM revenue	1,566	1,469	4,599	4,281	97	7 %	318	7 %
Pandora:								
Subscriber revenue	132	126	401	345	6	5 %	56	16 %
Advertising revenue	315	292	852	778	23	8 %	74	10 %
Total Pandora revenue	447	418	1,253	1,123	29	7 %	130	12 %
Total consolidated revenue	2,013	1,887	5,852	5,404	126	7 %	448	8 %
Cost of services								
Sirius XM:								
Revenue share and royalties	358	343	1,065	1,057	15	4 %	8	1 %
Programming and content	113	96	328	303	17	18 %	25	8 %
Customer service and billing	99	95	296	284	4	4 %	12	4 %
Transmission	29	24	79	70	5	21 %	9	13 %
Cost of equipment	8	7	20	22	1	14 %	(2)	(9)%
Total Sirius XM cost of services	607	565	1,788	1,736	42	7 %	52	3 %
Pandora:								
Revenue share and royalties	238	235	701	694	3	1 %	7	1 %
Programming and content	3	3	10	7	—	— %	3	43 %
Customer service and billing	20	25	64	69	(5)	(20)%	(5)	(7)%
Transmission	17	14	43	38	3	21 %	5	13 %
Total Pandora cost of services	278	277	818	808	1	— %	10	1 %
Total consolidated cost of services	885	842	2,606	2,544	43	5 %	62	2 %
Subscriber acquisition costs	101	109	313	352	(8)	(7)%	(39)	(11)%
Sales and marketing	233	214	684	638	19	9 %	46	7 %
Engineering, design and development	78	69	220	195	9	13 %	25	13 %
General and administrative	124	126	395	388	(2)	(2)%	7	2 %
Depreciation and amortization	118	117	359	345	1	1 %	14	4 %
Total operating expenses	1,539	1,477	4,577	4,462	62	4 %	115	3 %
Income from operations	474	410	1,275	942	64	16 %	333	35 %
Other (expense) income:								
Interest expense	(103)	(93)	(289)	(284)	(10)	(11)%	(5)	(2)%
Loss on extinguishment of debt	(56)	—	(57)	(17)	(56)	— %	(40)	(235)%
Other (expense) income	(11)	3	(8)	14	(14)	(467)%	(22)	(157)%
Total other (expense) income	(170)	(90)	(354)	(287)	(80)	(89)%	(67)	(23)%
Income before income taxes	304	320	921	655	(16)	(5)%	266	41 %
Income tax expense	(69)	(3)	(234)	(47)	(66)	nm	(187)	(398)%
Net income	$ 235	$ 317	687	608	$ (82)	(26)%	$ 79	13 %
Adjusted EBITDA	$ 657	$ 585	$ 1,841	$ 1,539	$ 72	12 %	$ 302	20 %

nm - not meaningful

Sirius XM Revenue

Sirius XM Subscriber Revenue includes self-pay and paid promotional subscriptions, U.S. Music Royalty Fees and other ancillary fees.

For the three months ended September 30, 2019 and 2018, subscriber revenue was $1,424 and $1,340, respectively, an increase of 6%, or $84. For the nine months ended September 30, 2019 and 2018, subscriber revenue was $4,196 and $3,903, respectively, an increase of 8%, or $293. The increases were primarily driven by higher U.S. Music Royalty Fees due to a higher music royalty rate and self-pay subscription revenue as a result of a 3% increase in the daily weighted average number of subscribers.

We expect subscriber revenues to increase based on the growth of our subscriber base, increases in the average price charged and the sale of additional services to subscribers.

Sirius XM Advertising Revenue includes the sale of advertising on Sirius XM's non-music channels.

For the three months ended September 30, 2019 and 2018, advertising revenue was $51 and $46, respectively, an increase of 11%, or $5. For the nine months ended September 30, 2019 and 2018, advertising revenue was $149 and $135, respectively, an increase of 10%, or $14. The increases were primarily due to a greater number of advertising spots sold and transmitted as well as increases in rates charged per spot.

We expect our Sirius XM advertising revenue to continue to grow as more advertisers are attracted to our national platform and growing subscriber base.

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

For the three months ended September 30, 2019 and 2018, equipment revenue was $45 and $41, respectively, an increase of 10%, or $4. For the nine months ended September 30, 2019 and 2018, equipment revenue was $127 and $113, respectively, an increase of 12%, or $14. The increases were driven by an increase in royalty revenue due to our transition to a new generation of chipsets.

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

Sirius XM Other Revenue includes service and advisory revenue from our Sirius XM Canada, our connected vehicle services, and ancillary revenues.

For the three months ended September 30, 2019 and 2018, other revenue was $46 and $42, respectively, an increase of 10%, or $4. For the nine months ended September 30, 2019 and 2018, other revenue was $127 and $130, respectively, a decrease of 2%, or $3. The increase for the three month period was primarily driven by higher revenue generated by our connected vehicle services. The decrease for the nine month period was primarily driven by a decrease in data usage revenue generated from our connected vehicle services.

We expect other revenue to increase due to additional revenues generated from our connected vehicle services.

Pandora Revenue

Pandora Subscriber Revenue includes fees charged for Pandora Plus and Pandora Premium subscriptions.

For the three months ended September 30, 2019 and 2018, Pandora subscriber revenue was $132 and $126, respectively, an increase of 5%, or $6. For the nine months ended September 30, 2019 and 2018, Pandora subscriber revenue was $401 and $345, respectively, an increase of 16%, or $56. The increases were primarily due to a greater weighted average number of subscribers.

We expect Pandora subscriber revenues to remain relatively flat as growth of our Pandora subscriber base is offset by the expiration of the one-year promotional trial with T-Mobile.

Pandora Advertising Revenue is generated primarily from audio, display and video advertising.

For the three months ended September 30, 2019 and 2018, Pandora advertising revenue was $315 and $292, respectively, an increase of 8%, or $23. For the nine months ended September 30, 2019 and 2018, Pandora advertising revenue was $852 and $778, respectively, an increase of 10%, or $74. The increases were primarily due to increased sell-through percentage, growth in our off-platform advertising revenue, and revenue growth in the AdsWizz business.

We expect our advertising revenue to continue to increase due to our off-platform advertising opportunities.

Total Consolidated Revenue

Total Consolidated Revenue for the three months ended September 30, 2019 and 2018, was $2,013 and $1,887, respectively, an increase of 7%, or $126. Total Consolidated Revenue for the nine months ended September 30, 2019 and 2018, was $5,852 and $5,404, respectively, an increase of 8%, or $448.

Sirius XM Cost of Services

Sirius XM Cost of Services includes revenue share and royalties, programming and content, customer service and billing and transmission expenses.

Sirius XM Revenue Share and Royalties include royalties for transmitting content, including streaming royalties, as well as automaker, content provider and advertising revenue share.

For the three months ended September 30, 2019 and 2018, revenue share and royalties were $358 and $343, respectively, an increase of 4%, or $15, but decreased as a percentage of total Sirius XM revenue. For the nine months ended September 30, 2019 and 2018, revenue share and royalties were $1,065 and $1,057, respectively, an increase of 1%, or $8, but decreased as a percentage of total Sirius XM revenue. The increases were driven by overall greater revenues subject to royalties and revenue share. The increase for the nine month period was partially offset by a $69 charge during the second quarter of 2018 related to the legal settlement that resolved all outstanding claims, including ongoing audits, under Sirius XM's statutory license for sound recordings for the period January 1, 2007 through December 31, 2017.

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

Sirius XM 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.

For the three months ended September 30, 2019 and 2018, programming and content expenses were $113 and $96, respectively, an increase of 18%, or $17, and increased as a percentage of total Sirius XM revenue. For the nine months ended September 30, 2019 and 2018, programming and content expenses were $328 and $303, respectively, an increase of 8%, or $25, and increased as a percentage of total Sirius XM revenue. The increases were primarily driven by higher content licensing costs as well as greater personnel-related costs.

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

Sirius XM 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, bad debt expense, and transaction fees.

For the three months ended September 30, 2019 and 2018, customer service and billing expenses were $99 and $95, respectively, an increase of 4%, or $4, but decreased as a percentage of total Sirius XM revenue. For the nine months ended September 30, 2019 and 2018, customer service and billing expenses were $296 and $284, respectively, an increase of 4%, or $12, but decreased as a percentage of total Sirius XM revenue. The increase for the three month period was driven by increased transaction fees from a larger subscriber base and higher call center costs due to volume. The increase for the nine month period was driven by increased transaction fees from a larger subscriber base and higher bad debt expense, partially offset by lower call center costs due to improved agent rates.

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

Sirius XM 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 Internet streaming and connected vehicle services.

For the three months ended September 30, 2019 and 2018, transmission expenses were $29 and $24, respectively, an increase of 21%, or $5, and increased as a percentage of total Sirius XM revenue. For the nine months ended September 30, 2019 and 2018, transmission expenses were $79 and $70, respectively, an increase of 13%, or $9, and increased as a percentage of total Sirius XM revenue. The increases were primarily driven by higher cloud hosting and wireless costs associated with our streaming services and higher repeater network costs.

We expect our Sirius XM transmission expenses to increase as costs associated with our investments in Internet streaming grow.

Sirius XM 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.

For the three months ended September 30, 2019 and 2018, cost of equipment was $8 and $7, respectively, an increase of 14%, or $1, and increased as a percentage of equipment revenue. For the nine months ended September 30, 2019 and 2018, cost of equipment was $20 and $22, respectively, a decrease of 9%, or $2, and decreased as a percentage of equipment revenue. The increase for the three month period was primarily due to an increase in our inventory reserve and shipping costs, partially offset by lower direct sales to connected vehicle consumers. The decrease for the nine month period was primarily due to lower direct sales to satellite radio and connected vehicle consumers, partially offset by an increase in our inventory reserve.

We expect our Sirius XM cost of equipment to increase with the sales of our streaming devices, satellite radios and connected vehicle devices.

Pandora Cost of Services

Pandora Cost of Services includes revenue share and royalties, programming and content, customer service and billing, and transmission expenses.

Pandora Revenue Share and Royalties includes licensing fees paid for streaming music or other content to our subscribers and listeners as well as revenue share paid to third party ad servers. We make payments to third party ad servers for the period the advertising impressions are delivered or click-through actions occur, and accordingly, we record this as a cost of service in the related period.

For the three months ended September 30, 2019 and 2018, revenue share and royalties were $238 and $235, respectively, an increase of 1%, or $3, but decreased as a percentage of total Pandora revenue. For the nine months ended September 30, 2019 and 2018, revenue share and royalties were $701 and $694, respectively, an increase of 1%, or $7, but decreased as a percentage of total Pandora revenue. The increases were primarily attributable to higher revenue share driven by overall greater revenues, partially offset by lower costs resulting from renegotiated agreements with major and independent labels, distributors, PROs and publishers.

We expect our Pandora revenue share and royalty costs to increase as off-platform revenue increases.

Pandora Programming and Content includes costs to produce live listener events and promote content.

For the three months ended September 30, 2019 and 2018, programming and content expenses were $3 and decreased as a percentage of total Pandora revenue. For the nine months ended September 30, 2019 and 2018, programming and content expenses were $10 and $7, respectively, an increase of 43%, or $3, and increased as a percentage of total Pandora revenue. The increase for the nine month period was primarily attributable to higher personnel-related and content costs.

We expect our Pandora programming and content costs to increase as we offer additional programming and continue to produce live listener events and promotions.

Pandora Customer Service and Billing includes transaction fees on subscription purchases through mobile app stores, and bad debt expense.

For the three months ended September 30, 2019 and 2018, customer service and billing expenses were $20 and $25, respectively, a decrease of 20%, or $5, and decreased as a percentage of total Pandora revenue. For the nine months ended September 30, 2019 and 2018, customer service and billing expenses were $64 and $69, respectively, a decrease of 7%, or $5, and decreased as a percentage of total Pandora revenue. The decreases were primarily driven by bad debt recoveries.

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

Pandora Transmission includes costs associated with content streaming, maintaining our streaming radio and on-demand subscription services and creating and serving advertisements through third-party ad servers.

For the three months ended September 30, 2019 and 2018, transmission expenses were $17 and $14, respectively, an increase of 21%, or $3, and increased as a percentage of total Pandora revenue. For the nine months ended September 30, 2019 and 2018, transmission expenses were $43 and $38, respectively, an increase of 13%, or $5, and increased as a percentage of total Pandora revenue. The increases were primarily driven by web hosting costs and personnel related costs.

We expect our Pandora transmission costs to increase with growth in our subscriber base and off-platform advertising.

Operating Costs

Subscriber Acquisition Costs are costs only associated with our satellite radio and connected vehicle services and 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 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.

For the three months ended September 30, 2019 and 2018, subscriber acquisition costs were $101 and $109, respectively, a decrease of 7%, or $8, and decreased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, subscriber acquisition costs were $313 and $352, respectively, a decrease of 11%, or $39, and decreased as a percentage of total revenue. The decreases were driven by reductions to OEM hardware subsidy rates, lower subsidized costs related to the transition of chipsets, and a decrease in the volume of satellite radio installations.

We expect subscriber acquisition costs to fluctuate with OEM installations; however, the subsidized chipsets cost is expected to decline as we transition to a new generation of chipsets. 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 and artist marketing; and personnel related costs including salaries, commissions, and sales support. Marketing costs include expenses related to direct mail, outbound telemarketing, email communications, and digital performance media.

For the three months ended September 30, 2019 and 2018, sales and marketing expenses were $233 and $214, respectively, an increase of 9%, or $19, and increased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, sales and marketing expenses were $684 and $638, respectively, an increase of 7%, or $46, but decreased as a percentage of total revenue. The increases were primarily due to additional subscriber communications, retention programs and acquisition campaigns, as well as higher personnel-related costs.

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 and listeners.

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.

For the three months ended September 30, 2019 and 2018, engineering, design and development expenses were $78 and $69, respectively, an increase of 13%, or $9, and increased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, engineering, design and development expenses were $220 and $195, respectively, an increase of 13%, or $25, and increased as a percentage of total revenue. The increases were driven by higher personnel-related costs.

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.

For the three months ended September 30, 2019 and 2018, general and administrative expenses were $124 and $126, respectively, a decrease of 2%, or $2, and decreased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, general and administrative expenses were $395 and $388, respectively, an increase of 2%, or $7, but decreased as a percentage of total revenue. The decrease for the three months was driven by lower legal and personnel costs. The increase for the nine months was primarily driven by a one-time $25 legal settlement reserve associated with Do-Not-Call litigation and higher rent, partially offset by lower personnel-related costs and a one-time sales and use tax recorded in the second quarter of 2018.

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 cost of assets used in operations, including our satellite constellations, property, equipment and intangible assets, over their estimated service lives.

For the three months ended September 30, 2019 and 2018, depreciation and amortization expense was $118 and $117, respectively, an increase of 1%, or $1, but decreased as a percentage of total revenue. For the nine months ended September 30, 2019 and 2018, depreciation and amortization expense was $359 and $345, respectively, an increase of 4%, or $14, but decreased as a percentage of total revenue. The increases were driven by the additional amortization associated with the acquired intangible assets recorded as part of the Pandora Acquisition, and higher depreciation costs related to additional assets placed in-service.

Other (Expense) Income

Interest Expense includes interest on outstanding debt.

For the three months ended September 30, 2019 and 2018, interest expense was $103 and $93, respectively, an increase of 11%, or $10. For the nine months ended September 30, 2019 and 2018, interest expense was $289 and $284, respectively, an increase of 2%, or $5. The increases were primarily driven by higher average debt due to the issuances of the 5.500% Senior Notes due 2029 and the 4.625% Senior Notes due 2024, partially offset by the redemption of the 6.00% Senior Notes due 2024, the repurchase of the Pandora 1.75% Convertible Senior Notes due 2020, and lower interest rates.

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

For the three months ended September 30, 2019, we recorded a $56 loss on extinguishment of debt primarily due to the redemption of our 6.00% Senior Notes due 2024. During the nine months ended September 30, 2018, Pandora recorded a $17 loss on extinguishment of debt primarily due to the exchange of their 1.75% Convertible Senior Notes due 2020 for new 1.75% Convertible Senior Notes due 2023.

Other (Expense) Income primarily includes realized and unrealized gains and losses, interest and dividend income, our share of the income or loss from our equity investments, and transaction costs related to non-operating investments.

For the three months ended September 30, 2019 and 2018, other (expense) income was $(11) and $3, respectively. For the nine months ended September 30, 2019 and 2018, other (expense) income was $(8) and $14, respectively. For the three and nine months ended September 30, 2019, we recorded our share of Sirius XM Canada's net loss and losses on other investments, partially offset by interest earned on our loan to Sirius XM Canada and trading gains associated with the investments held for our Deferred Compensation Plan. For the three and nine months ended September 30, 2018, other income was driven by interest earned on our loan to Sirius XM Canada and short-term investments.

Income Taxes

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

For the three months ended September 30, 2019 and 2018, income tax expense was $69 and $3, respectively, and $234 and $47 for the nine months ended September 30, 2019 and 2018, respectively.

Our effective tax rate for the three months ended September 30, 2019 and 2018 was 22.0% and 0.9%, respectively. Our effective tax rate for the nine months ended September 30, 2019 and 2018 was 25.3% and 7.2%, respectively. The effective tax rate for the three months ended September 30, 2019 was primarily impacted by the recognition of excess tax benefits related to share based compensation. The effective tax rate for the nine months ended September 30, 2019 was primarily impacted by the increase to the valuation allowance related to the federal research and development credits that are no longer expected to be realizable. The effective tax rate for the three and nine months ended September 30, 2018 was primarily impacted by the recognition of excess tax benefits related to share based compensation and a benefit related to state research and development credits. We estimate our effective tax rate for the year ending December 31, 2019 will be approximately 24%.

In connection with the Pandora Acquisition, we acquired gross NOL carryforwards of approximately $1,284 for federal income tax purposes. These NOL carryforwards are available to offset future taxable income. The acquired NOLs are limited annually by Section 382 of the Internal Revenue Code but we expect to fully utilize those NOLs within the carryforward period.

Footnotes to Pro forma Results of Operations

The following tables reconcile our results of operations as reported to our *pro forma* results of operations for the three and nine months ended September 30, 2019 and 2018 which includes the Pandora pre-acquisition financial information for the applicable periods and the effects of purchase price accounting. These pro forma results are based on estimates and assumptions, which we believe are reasonable. They are not the results that would have been realized had the Pandora Acquisition actually occurred on January 1, 2018 and are not indicative of our consolidated results of operations in future periods. The pro forma results primarily include adjustments related to amortization of acquired intangible assets, depreciation of property and equipment, acquisition costs, fair value gain or loss on the Pandora investment and associated tax impacts.

	Unaudited for the Three Months Ended September 30, 2019				
	As Reported	Predecessor Financial Information	Purchase Price Accounting Adjustments	Ref	Pro Forma
Revenue					
Sirius XM:					
Subscriber revenue	$ 1,424	$ —	$ —		$ 1,424
Advertising revenue	51	—	—		51
Equipment revenue	45	—	—		45
Other revenue	44	—	2	(a)	46
Total Sirius XM revenue	1,564	—	2		1,566
Pandora:					
Subscriber revenue	132	—	—		132
Advertising revenue	315	—	—		315
Total Pandora revenue	447	—	—		447
Total consolidated revenue	2,011	—	2		2,013
Cost of services					
Sirius XM:					
Revenue share and royalties	358	—	—		358
Programming and content	113	—	—		113
Customer service and billing	99	—	—		99
Transmission	29	—	—		29
Cost of equipment	8	—	—		8
Total Sirius XM cost of services	607	—	—		607
Pandora:					
Revenue share and royalties	234	—	4	(b)	238
Programming and content	3	—	—		3
Customer service and billing	20	—	—		20
Transmission	17	—	—		17
Total Pandora cost of services	274	—	4		278
Total consolidated cost of services	881	—	4		885
Subscriber acquisition costs	101	—	—		101
Sales and marketing	233	—	—		233
Engineering, design and development	78	—	—		78
General and administrative	124	—	—		124
Depreciation and amortization	118	—	—		118
Acquisition and other related costs	—	—	—		—
Total operating expenses	1,535	—	4		1,539
Income (loss) from operations	476	—	(2)		474
Other (expense) income:					
Interest expense	(103)	—	—		(103)
Loss on extinguishment of debt	(56)	—	—		(56)
Other (expense) income	(11)	—	—		(11)
Total other (expense) income	(170)	—	—		(170)
Income (loss) before income taxes	306	—	(2)		304
Income tax expense	(70)	—	1	(c)	(69)
Net income	$ 236	$ —	$ (1)		$ 235

(a) This adjustment eliminates the impact of additional revenue associated with certain programming agreements recorded as part of the XM Merger.

(b) This adjustment includes the impact of additional expense associated with minimum guarantee royalty contracts recorded as part of the Pandora Acquisition.

(c) This adjustment to income taxes was calculated by applying Sirius XM's statutory tax rate at September 30, 2019 to the pro forma adjustments of $(2).

	Unaudited for the Three Months Ended September 30, 2018				
	As Reported	Predecessor Financial Information (d)	Purchase Price Accounting and Pro Forma Adjustments	Ref	Pro Forma
Revenue					
Sirius XM:					
Subscriber revenue	$ 1,340	$ —	$ —		$ 1,340
Advertising revenue	46	—	—		46
Equipment revenue	41	—	—		41
Other revenue	40	—	2	(e)	42
Total Sirius XM revenue	1,467	—	2		1,469
Pandora:					
Subscriber revenue	—	126	—		126
Advertising revenue	—	292	—		292
Total Pandora revenue	—	418	—		418
Total consolidated revenue	1,467	418	2		1,887
Cost of services					
Sirius XM:					
Revenue share and royalties	343	—	—		343
Programming and content	96	—	—		96
Customer service and billing	95	—	—		95
Transmission	24	—	—		24
Cost of equipment	7	—	—		7
Total Sirius XM cost of services	565	—	—		565
Pandora:					
Revenue share and royalties	—	235	—		235
Programming and content	—	3	—		3
Customer service and billing	—	25	—		25
Transmission	—	14	—		14
Total Pandora cost of services	—	277	—		277
Total consolidated cost of services	565	277	—		842
Subscriber acquisition costs	109	—	—		109
Sales and marketing	117	97	—		214
Engineering, design and development	31	38	—		69
General and administrative	86	49	(9)	(f)	126
Depreciation and amortization	76	16	25	(g)	117
Total operating expenses	984	477	16		1,477
Income from operations	483	(59)	(14)		410
Other (expense) income:					
Interest expense	(86)	(7)	—		(93)
Loss on extinguishment of debt	—	—	—		—
Other (expense) income	(42)	2	43	(h)	3
Total other (expense) income	(128)	(5)	43		(90)
Income before income taxes	355	(64)	29		320
Income tax expense	(12)	—	9	(i)	(3)
Net income	$ 343	$ (64)	$ 38		$ 317

(d) Represents Pandora's results for the period July 1, 2018 through September 30, 2018.

(e) This adjustment eliminates the impact of additional revenue associated with certain programming agreements recorded as part of the XM Merger.

(f) This adjustment eliminates the impact of transaction related costs, recorded by Pandora, to advisers for the planned acquisition by Sirius XM.

(g) This adjustment includes the impact of the additional amortization associated with the acquired intangible assets recorded as part of the Pandora Acquisition that are subject to amortization, partially offset by normal depreciation associated with assets revalued in purchase accounting.

(h) This adjustment eliminates the unrealized loss for the fair value adjustment of our preferred stock investment in Pandora.

(i) This adjustment to income taxes was calculated by applying Sirius XM's statutory tax rate at September 30, 2018 to the pro forma adjustments of $29 and Pandora's loss before income tax of $(64).

	Unaudited for the Nine Months Ended September 30, 2019				
	As Reported	Predecessor Financial Information (j)	Purchase Price Accounting and Pro Forma Adjustments	Ref	Pro Forma
Revenue					
Sirius XM:					
Subscriber revenue	$ 4,196	$ —	$ —		$ 4,196
Advertising revenue	149	—	—		149
Equipment revenue	127	—	—		127
Other revenue	121	—	6	(k)	127
Total Sirius XM revenue	4,593	—	6		4,599
Pandora:					
Subscriber revenue	355	46	—		401
Advertising revenue	784	68	—		852
Total Pandora revenue	1,139	114	—		1,253
Total consolidated revenue	5,732	114	6		5,852
Cost of services					
Sirius XM:					
Revenue share and royalties	1,065	—	—		1,065
Programming and content	328	—	—		328
Customer service and billing	296	—	—		296
Transmission	79	—	—		79
Cost of equipment	20	—	—		20
Total Sirius XM cost of services	1,788	—	—		1,788
Pandora:					
Revenue share and royalties	619	71	11	(l)	701
Programming and content	10	—	—		10
Customer service and billing	56	8	—		64
Transmission	38	5	—		43
Total Pandora cost of services	723	84	11		818
Total consolidated cost of services	2,511	84	11		2,606
Subscriber acquisition costs	313	—	—		313
Sales and marketing	648	36	—		684
Engineering, design and development	206	14	—		220
General and administrative	379	16	—		395
Depreciation and amortization	344	6	9	(m)	359
Acquisition and other related costs	83	1	(84)	(n)	—
Total operating expenses	4,484	157	(64)		4,577
Income (loss) from operations	1,248	(43)	70		1,275
Other (expense) income:					
Interest expense	(287)	(2)	—		(289)
Loss on extinguishment of debt	(57)	—	—		(57)
Other (expense) income	(9)	1	—		(8)
Total other (expense) income	(353)	(1)	—		(354)
Income (loss) before income taxes	895	(44)	70		921
Income tax expense	(227)	—	(7)	(o)	(234)
Net income	$ 668	$ (44)	$ 63		$ 687

(j) Represents Pandora’s results for the period January 1, 2019 through January 31, 2019.

(k) This adjustment eliminates the impact of additional revenue associated with certain programming agreements recorded as part of the XM Merger.

(l) This adjustment includes the impact of additional expense associated with minimum guarantee royalty contracts recorded as part of the Pandora Acquisition.

(m) This adjustment includes the impact of the additional amortization associated with the acquired intangible assets recorded as part of the Pandora Acquisition that are subject to amortization, partially offset by normal depreciation associated with assets revalued in purchase accounting.
(n) This adjustment eliminates the impact of acquisition and other related costs.
(o) This adjustment to income taxes was calculated by applying Sirius XM's statutory tax rate at September 30, 2019 to the pro forma adjustments of $70 and Pandora's pre-acquisition loss before income tax of $(44).

	Unaudited for the Nine Months Ended September 30, 2018				
	As Reported	Predecessor Financial Information (p)	Purchase Price Accounting and Pro Forma Adjustments	Ref	Pro Forma
Revenue					
Sirius XM:					
Subscriber revenue	$ 3,903	$ —	$ —		$ 3,903
Advertising revenue	135	—	—		135
Equipment revenue	113	—	—		113
Other revenue	124	—	6	(q)	130
Total Sirius XM revenue	4,275	—	6		4,281
Pandora:					
Subscriber revenue	—	345	—		345
Advertising revenue	—	778	—		778
Total Pandora revenue	—	1,123	—		1,123
Total consolidated revenue	4,275	1,123	6		5,404
Cost of services					
Sirius XM:					
Revenue share and royalties	1,057	—	—		1,057
Programming and content	303	—	—		303
Customer service and billing	284	—	—		284
Transmission	70	—	—		70
Cost of equipment	22	—	—		22
Total Sirius XM cost of services	1,736	—	—		1,736
Pandora:					
Revenue share and royalties	—	694	—		694
Programming and content	—	7	—		7
Customer service and billing	—	69	—		69
Transmission	—	38	—		38
Total Pandora cost of services	—	808	—		808
Total consolidated cost of services	1,736	808	—		2,544
Subscriber acquisition costs	352	—	—		352
Sales and marketing	344	294	—		638
Engineering, design and development	89	106	—		195
General and administrative	264	133	(9)	(r)	388
Depreciation and amortization	222	44	79	(s)	345
Total operating expenses	3,007	1,385	70		4,462
Income (loss) from operations	1,268	(262)	(64)		942
Other (expense) income:					
Interest expense	(263)	(21)	—		(284)
Loss on extinguishment of debt	—	(17)	—		(17)
Other (expense) income	82	6	(74)	(t)	14
Total other (expense) income	(181)	(32)	(74)		(287)
Income (loss) before income taxes	1,087	(294)	(138)		655
Income tax expense	(162)	7	108	(u)	(47)
Net income	$ 925	$ (287)	$ (30)		$ 608

(p) Represents Pandora's results for the period January 1, 2018 through September 30, 2018.
(q) This adjustment eliminates the impact of additional revenue associated with certain programming agreements recorded as part of the XM Merger.

(r) This adjustment eliminates the impact of transaction related costs, recorded by Pandora, to advisers for the planned acquisition by Sirius XM.
(s) This adjustment includes the impact of the additional amortization associated with the acquired intangible assets recorded as part of the Pandora Acquisition that are subject to amortization, partially offset by normal depreciation associated with assets revalued in purchase accounting.
(t) This adjustment eliminates the unrealized gain for the fair value adjustment of our preferred stock investment in Pandora.
(u) This adjustment to income taxes was calculated by applying Sirius XM's statutory tax rate at September 30, 2018 to the pro forma adjustments of $(138) and Pandora's loss before income tax of $(294).

Key Financial and Operating Performance Metrics

In this section, we present certain financial performance measures some of which are presented as Non-GAAP items, which include free cash flow and adjusted EBITDA. We also present certain operating performance measures. 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") and the Pandora Acquisition. 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 57 through 60 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 57 through 60) 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 September 30, 2019 compared to September 30, 2018.

	As of September 30,		2019 vs 2018 Change	
(subscribers in thousands)	2019	2018 [1]	Amount	%
Sirius XM				
Self-pay subscribers	29,637	28,501	1,136	4 %
Paid promotional subscribers	4,917	5,192	(275)	(5)%
Ending subscribers	34,554	33,693	861	3 %
Traffic users	9,378	8,359	1,019	12 %
Sirius XM Canada subscribers	2,706	2,667	39	1 %
Pandora				
Monthly active users - all services	63,100	68,785	(5,685)	(8)%
Self-pay subscribers	6,257	5,996	261	4 %
Paid promotional subscribers	45	759	(714)	(94)%
Ending subscribers	6,302	6,755	(453)	(7)%

nm - not meaningful

(1) Includes Pandora's results as of September 30, 2018.

The following table contains our Non-GAAP financial and operating performance measures which are based on our adjusted results of operations for the three and nine months ended September 30, 2019 and 2018.

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,		2019 vs 2018 Change			
					Three Months		Nine Months	
(subscribers in thousands)	2019	2018 [2]	2019 [1]	2018 [3]	Amount	%	Amount	%
Sirius XM								
Self-pay subscribers	302	298	723	988	4	1 %	(265)	(27)%
Paid promotional subscribers	(92)	(100)	(207)	(31)	8	(8)%	(176)	568 %
Net additions	210	198	516	957	12	6 %	(441)	(46)%
Weighted average number of subscribers	34,397	33,545	34,181	33,192	852	3 %	989	3 %
Average self-pay monthly churn	1.7%	1.8%	1.7%	1.7%	(0.1)%	(6)%	—%	— %
ARPU [4]	$ 13.90	$ 13.48	$ 13.75	$ 13.24	$ 0.42	3 %	$ 0.51	4 %
SAC, per installation	$ 21.01	$ 23.67	$ 22.62	$ 26.50	$ (2.66)	(11)%	$ (3.88)	(15)%
Pandora								
Self-pay subscribers	33	20	343	518	13	65 %	(175)	(34)%
Paid promotional subscribers	(688)	759	(711)	759	(1,447)	(191)%	(1,470)	(194)%
Net additions	(655)	779	(368)	1,277	(1,434)	(184)%	(1,645)	(129)%
Weighted average number of subscribers	6,753	6,270	6,778	5,865	483	8 %	913	16 %
ARPU	$ 6.46	$ 6.68	$ 6.56	$ 6.51	$ (0.22)	(3)%	$ 0.05	1 %
Ad supported listener hours (in billions)	3.32	3.59	10.23	11.30	(0.27)	(8)%	(1.07)	(9)%
Advertising revenue per thousand listener hours (RPM)	$ 85.33	$ 77.84	$ 75.96	$ 67.14	$ 7.49	10 %	$ 8.82	13 %
Licensing costs per thousand listener hours (LPM)	$ 39.05	$ 37.80	$ 37.83	$ 36.99	$ 1.25	3 %	$ 0.84	2 %
Licensing costs per paid subscriber (LPU)	$ 4.09	$ 4.51	$ 4.07	$ 4.64	$ (0.42)	(9)%	$ (0.57)	(12)%
Total Company								
Adjusted EBITDA	$ 657	$ 585	$ 1,841	$ 1,539	$ 72	12 %	$ 302	20 %
Free cash flow	$ 465	$ 288	$ 1,239	$ 1,101	$ 177	61 %	$ 138	13 %

nm - not meaningful

(1) Includes Pandora's results for the nine month period, including pre-acquisition results for the period January 1, 2019 through January 31, 2019.

(2) Includes Pandora's pre-acquisition results for the period July 1, 2018 through September 30, 2018.

(3) Includes Pandora's pre-acquisition results for the period January 1, 2018 through September 30, 2018.
(4) ARPU for Sirius XM excludes subscriber revenue from our connected vehicle services of $41 and $30 for the three months and $116 and $81 for the nine months ended September 30, 2019 and 2018, respectively.

Sirius XM

Subscribers. At September 30, 2019, Sirius XM had approximately 34,554 subscribers, an increase of 861, or 3%, from the approximately 33,693 as of September 30, 2018. The increase in subscribers was primarily due to growth in our self-pay subscriber base from subsequent owner trial conversions as well as subscriber win back programs.

For the three months ended September 30, 2019 and 2018, net additions were 210 and 198, respectively. For the nine months ended September 30, 2019 and 2018, net additions were 516 and 957, respectively. Paid promotional subscribers decreased due to declines in shipments and trial starts from automakers offering paid subscriptions. Self-pay net additions decreased primarily due to increases in vehicle related deactivations.

Traffic Users. We offer services that provide graphic information as to road closings, traffic flow and incident data to consumers with compatible in-vehicle navigation systems. At September 30, 2019, Sirius XM had approximately 9,378 traffic users, an increase of 1,019 users, or 12%, from the approximately 8,359 traffic users as of September 30, 2018.

Sirius XM Canada Subscribers. At September 30, 2019, Sirius XM Canada had approximately 2,706 subscribers, an increase of 39, or 1%, from the approximately 2,667 Sirius XM Canada subscribers as of September 30, 2018.

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 57 through 60 for more details.)

For the three months ended September 30, 2019 and 2018, our average self-pay monthly churn rate was 1.7% and 1.8%, respectively. For the nine months ended September 30, 2019 and 2018, our average self-pay monthly churn rate was 1.7%. The decrease for the three month period was primarily driven by improvements in both voluntary and non-pay churn.

ARPU is derived from total earned Sirius XM subscriber revenue (excluding revenue derived from our connected vehicle services) and net advertising 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 57 through 60 for more details.)

For the three months ended September 30, 2019 and 2018, subscriber ARPU - Sirius XM was $13.90 and $13.48, respectively. For the nine months ended September 30, 2019 and 2018, subscriber ARPU - Sirius XM was $13.75 and $13.24, respectively. The increase was driven by increases in the U. S. Music Royalty Fee and higher advertising revenue.

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 57 through 60 for more details.)

For the three months ended September 30, 2019 and 2018, SAC, per installation, was $21.01 and $23.67, respectively. For the nine months ended September 30, 2019 and 2018, SAC, per installation, was $22.62 and $26.50, respectively. The decrease was driven by our transition to a new generation of chipsets and reductions to OEM hardware subsidy rates.

Pandora

Monthly Active Users. At September 30, 2019, Pandora had approximately 63,100 monthly active users, a decrease of 5,685 monthly active users, or 8%, from the 68,785 monthly active users as of September 30, 2018. The decrease in monthly active users was driven by an increase in ad-supported listener churn and a decrease in the number of new users.

Subscribers. At September 30, 2019, Pandora had approximately 6,302 subscribers, a decrease of 453, or 7%, from the approximately 6,755 as of September 30, 2018.

For the three months ended September 30, 2019 and 2018, net additions were (655) and 779, respectively. For the nine months ended September 30, 2019 and 2018, net additions were (368) and 1,277, respectively. Net additions decreased due to a decrease in paid promotional subscribers from the expiration of an agreement with T-Mobile.

ARPU is defined as average monthly revenue per paid subscriber on our Pandora subscription services. (See the accompanying glossary on pages 57 through 60 for more details.)

For the three months ended September 30, 2019 and 2018, subscriber ARPU - Pandora was $6.46 and $6.68, respectively. For the nine months ended September 30, 2019 and 2018, subscriber ARPU - Pandora was $6.56 and $6.51, respectively. The decrease for the three month period in subscriber ARPU was primarily driven by a shift to Pandora Premium family plans. The increase for the nine month period was primarily driven by an increase in the number of Pandora Premium subscribers while the number of lower price Pandora Plus subscribers decreased.

Ad supported listener hours are a key indicator of our Pandora business and the engagement of our Pandora listeners. We include ad supported listener hours related to Pandora's non-radio content offerings in the definition of listener hours.

For the three months ended September 30, 2019 and 2018, ad supported listener hours were 3,320 and 3,590, respectively. For the nine months ended September 30, 2019 and 2018, ad supported listener hours were 10,230 and 11,300, respectively. The decline in ad supported listener hours was primarily driven by an increase in ad-supported listener churn.

RPM is a key indicator of our ability to monetize advertising inventory created by our listener hours on the Pandora services. Ad RPM is calculated by dividing advertising revenue by the number of thousands of listener hours of our Pandora advertising-based service.

For the three months ended September 30, 2019 and 2018, RPM was $85.33 and $77.84, respectively. For the nine months ended September 30, 2019 and 2018, RPM was $75.96 and $67.14, respectively. The increase was a result of an increase in the average price per ad due to new advertising products resulting in improved monetization and increased sell-through percentage.

LPM is tracked for our non-subscription, ad-supported service across all Pandora delivery platforms. The content acquisition costs included in our ad LPM calculations are based on the rates set by our license agreements with record labels, performing rights organizations and music publishers or the applicable rates set by the Copyright Royalty Board if we have not entered into a license agreement with the copyright owner of a particular sound recording.

For the three months ended September 30, 2019 and 2018, LPM was $39.05 and $37.80, respectively. For the nine months ended September 30, 2019 and 2018, LPM was $37.83 and $36.99, respectively. The increase was primarily driven by increases to track rates.

LPU is defined as average monthly licensing costs per paid subscriber on our Pandora subscription services. LPU is a key measure of our ability to manage costs for our subscription services.

For the three months ended September 30, 2019 and 2018, LPU was $4.09 and $4.51, respectively. For the nine months ended September 30, 2019 and 2018, LPU was $4.07 and $4.64, respectively. The decrease was due to lower minimum guarantees associated with our direct license agreements with major and independent labels, distributors, PROs and publishers.

Total Company

*Adjusted EBITDA. A*djusted EBITDA is defined as net income before interest expense, income tax expense and depreciation and amortization, adjusted for pro forma information which includes of the predecessor periods. (Pandora's results for the period January 1, 2019 through January 31, 2019 and January 1, 2018 through September 30, 2018.) Adjusted EBITDA excludes the impact of other expense (income), loss on extinguishment of debt, other non-cash charges, such as certain purchase price accounting adjustments, share-based payment expense, and legal settlements and reserves (if applicable). (See the accompanying glossary on pages 57 through 60 for a reconciliation to GAAP and for more details.)

For the three months ended September 30, 2019 and 2018, adjusted EBITDA was $657 and $585, respectively, an increase of 12%, or $72. For the nine months ended September 30, 2019 and 2018, adjusted EBITDA was $1,841 and $1,539, respectively, an increase of 20%, or $302. The increase was due to growth in Sirius XM subscriber revenue from higher U.S. Music Royalty Fee due to a higher music royalty rate and a 3% increase in the daily weighted average number of subscribers, Pandora advertising revenue, and Pandora subscriber revenue growth from an increase in the average number of self-pay subscribers; partially offset by higher revenue share and royalty costs driven by growth in our revenue.

Free Cash Flow includes cash provided by operations, net of additions to property and equipment, and restricted and other investment activity. (See the accompanying glossary on pages 57 through 60 for a reconciliation to GAAP and for more details.)

For the three months ended September 30, 2019 and 2018, free cash flow was $465 and $288, respectively, an increase of $177, or 61%. For the nine months ended September 30, 2019 and 2018, free cash flow was $1,239 and $1,101, respectively, an increase of $138, or 13%. The increase was driven by a one-time lump sum payment of $150 to resolve all outstanding claims under our statutory license for sound recordings for the period January 1, 2007 through December 31, 2017, paid during the three months ended September 30, 2018. The increase for the nine month period was partially offset by a one-time payment of $25 for a legal settlement paid during the three months ended March 31, 2019.

Liquidity and Capital Resources

Cash Flows for the nine months ended September 30, 2019 compared with the nine months ended September 30, 2018

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

	For the Nine Months Ended September 30,		
	2019	2018	2019 vs 2018
Net cash provided by operating activities	$ 1,382	$ 1,235	$ 147
Net cash provided by (used in) investing activities	126	(251)	377
Net cash used in financing activities	(1,483)	(1,006)	(477)
Net increase (decrease) in cash, cash equivalents and restricted cash	25	(22)	47
Cash, cash equivalents and restricted cash at beginning of period	65	79	(14)
Cash, cash equivalents and restricted cash at end of period	$ 90	$ 57	$ 33

Cash Flows Provided by Operating Activities

Cash flows provided by operating activities increased by $147 to $1,382 for the nine months ended September 30, 2019 from $1,235 for the nine months ended September 30, 2018.

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 Pandora, advertising on certain non-music channels on Sirius XM 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 listeners and subscribers, general corporate expenditures, and compensation and related costs.

Cash Flows Provided by (Used in) Investing Activities

Cash flows provided by investing activities in the nine months ended September 30, 2019 were primarily due to cash received from the Pandora Acquisition and from the sale of short-term investments, partially offset by spending primarily for capitalized software and hardware, and to construct replacement satellites. Cash flows used in investing activities in the nine months ended September 30, 2018 were primarily due to spending primarily for capitalized software and hardware, and to construct replacement satellites. We spent $146 and $121 on capitalized software and hardware as well as $46 and $91 to construct replacement satellites during the nine months ended September 30, 2019 and 2018, respectively.

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 nine months ended September 30, 2019 were primarily due to the purchase and retirement of shares of Holdings' common stock under Holdings' repurchase program for $1,959, the redemption of Sirius XM's 6.00% Senior Notes due 2024 in aggregate amount of $1,546, repayment under the Credit Facility of $374, the repurchase for $152 of Pandora's 1.75% Convertible Senior Notes due 2020 and the payment of cash dividends on Holdings' common stock of $167, partially offset by cash provided by the issuance of $2,715 in aggregate principal amount of 5.500% Senior Notes due 2029, net of costs. Cash flows used in financing activities in the nine months ended September 30, 2018 were primarily due to the purchase and retirement for $662 of shares of Holdings' common stock under Holdings' repurchase program, repayment under the Credit Facility of $184 and the payment of cash dividends on Holdings' common stock of $148.

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 September 30, 2019, $65 was outstanding under our Credit Facility. As the amount available for future borrowing is reduced by $1 related to letters of credit issued for the benefit of Pandora, $1,684 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 existing business.

We may from time to time purchase our outstanding debt through open market purchases, privately negotiated transactions or otherwise. Purchases or retirement of debt, if any, will depend on prevailing market conditions, liquidity requirements, contractual restrictions and other factors. The amounts involved may be material.

Holdings' Capital Return Program

As of September 30, 2019, Holdings' board of directors had authorized for repurchase an aggregate of $14,000 of Holdings' common stock. As of September 30, 2019, Holdings' cumulative repurchases since December 2012 under Holdings' stock repurchase program totaled $12,640, and $1,360 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 October 10, 2019, Holdings' board of directors declared a quarterly dividend on Holdings' common stock in the amount of $0.01331 per share of Holdings' common stock payable on November 29, 2019 to Holdings' stockholders of record as of the close of business on November 8, 2019. Holdings' board of directors expects to declare regular quarterly dividends, in an aggregate annual amount of $0.05324 per share of Holdings' common stock.

Debt Covenants

The indentures governing our senior notes and Pandora's convertible notes and the agreement governing the Credit Facility include restrictive covenants. As of September 30, 2019, we were in compliance with such covenants. For a discussion of our “Debt Covenants,” refer to Note 11 to our unaudited consolidated financial statements in this Quarterly Report.

Off-Balance Sheet Arrangements

We do not have any significant off-balance sheet arrangements other than those disclosed in Note 14 to our unaudited consolidated financial statements in this Quarterly 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 unaudited consolidated financial statements in this Quarterly Report.

Related Party Transactions

For a discussion of “Related Party Transactions,” refer to Note 10 to our unaudited consolidated financial statements in this Quarterly Report.

Critical Accounting Policies and Estimates

For a discussion of our “Critical Accounting Policies and Estimates,” refer to “Management's Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report for the year ended December 31, 2018. There have been no material changes to our critical accounting policies and estimates since December 31, 2018.

Glossary

Monthly active users - the number of distinct registered users on the Pandora services, including subscribers, that have consumed content within the trailing 30 days to the end of the final calendar month of the period. The number of monthly active users on the Pandora services may overstate the number of unique individuals who actively use our Pandora service, as one individual may use multiple accounts. To become a registered user on the Pandora services, a person must sign-up using an email address or phone number, or access our service using a device with a unique identifier, which we use to create an account for our service.

Average self-pay monthly churn - the Sirius XM monthly average of self-pay deactivations for the period divided by the average number of self-pay subscribers for the period.

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 expense (income) as well as certain other charges discussed below. Adjusted EBITDA is a Non-GAAP financial measure that excludes or adjusts for (if applicable): (i) certain adjustments as a result of the purchase price accounting for the XM Merger and the Pandora Acquisition, (ii) predecessor net income adjusted for certain expenses, including depreciation and amortization, other income (loss), and share-based payment expense for January 2019 and the nine months ended September 30, 2018, (iii) share-based payment expense and (iv) 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, 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 and the Pandora Acquisition. 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 unaudited 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 Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2019	2018	2019	2018
Net income:	$ 236	$ 343	$ 668	$ 925
Add back items excluded from Adjusted EBITDA:				
Legal settlements and reserves	—	—	25	69
Acquisition and other related costs (1)	—	—	83	—
Share-based payment expense	65	29	171	100
Depreciation and amortization	118	76	344	222
Interest expense	103	86	287	263
Loss on extinguishment of debt	56	—	57	—
Other expense (income)	11	42	9	(82)
Income tax expense	70	12	227	162
Purchase price accounting adjustments:				
Revenues	2	2	6	6
Operating expenses	(4)	—	(11)	—
Pro forma adjustments (2)	—	(5)	(25)	(126)
Adjusted EBITDA	$ 657	$ 585	$ 1,841	$ 1,539

(1) Acquisition and other related costs include $21 of share-based compensation expense for the nine months ended September 30, 2019.

(2) Pro forma adjustment for three months ended September 30, 2018 includes Pandora's Net income for the three months ended September 30, 2018 of $(64) plus Depreciation and amortization of $16, Share-based payment expense of $29, Interest expense of $7, and transaction related costs recorded by Pandora related to its acquisition by Sirius XM of $9, offset by Other expense (income) of $2. Pro forma adjustment for the nine months ended September 30, 2019 includes Pandora's January 2019 Net income of $(44) plus Depreciation and amortization of $6, Share-based payment expense of $11, Acquisition and other related costs of $1, and Interest expense of $2 offset by Other expense (income) of $1. Pro forma adjustment for nine months ended September 30, 2018 includes Pandora's Net income for the nine months ended September 30, 2018 of $(287) plus Depreciation and amortization of $44, Share-based payment expense of $83, Loss on extinguishment of debt of $17, Interest expense of $21, and transaction related costs recorded by Pandora related to its acquisition by Sirius XM of $9, offset by Other expense (income) of $6 and Income tax benefit of $7.

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 flows for acquisitions, strategic and short-term 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 unaudited 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 Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2019	2018	2019	2018
Cash Flow information				
Net cash provided by operating activities	$ 515	$ 312	$ 1,382	$ 1,235
Net cash provided by (used in) investing activities	$ (83)	$ (67)	$ 126	$ (251)
Net cash used in financing activities	$ (568)	$ (262)	$ (1,483)	$ (1,006)
Free Cash Flow				
Net cash provided by operating activities	$ 515	$ 312	$ 1,382	$ 1,235
Equity-related transactions for Holdings [(a)]	29	40	103	111
Additions to property and equipment	(79)	(64)	(239)	(238)
Purchases of other investments	—	—	(7)	(7)
Free cash flow	$ 465	$ 288	$ 1,239	$ 1,101

(a) Subsequent to our corporate reorganization in November 2013, certain equity-related transactions are reported as related party transactions within our unaudited consolidated statements of cash flows. For the nine months ended September 30, 2019 and 2018, this included payments of $104 and $111, respectively, for taxes paid in lieu of shares issued for stock-based compensation and proceeds from the exercise of stock options of $8 during the nine months ended September 30, 2019. This also includes $7 for the nine months ended September 30, 2019 for the change in Holdings' treasury stock. These equity-related transactions are classified as Cash flows used in financing activities within Holdings' unaudited consolidated statements of cash flows, and therefore, are adjusted to reflect free cash flow at Sirius XM.

ARPU - Sirius XM ARPU is derived from total earned subscriber revenue (excluding revenue associated with our connected vehicle services), advertising revenue, divided by the number of months in the period, divided by the daily weighted average number of subscribers for the period. Pandora ARPU is defined as average monthly subscriber revenue per paid subscriber on our Pandora subscription services.

Subscriber acquisition cost, per installation - or SAC, per installation, is derived from subscriber acquisition costs and margins from the sale of radios 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. SAC, per installation, is calculated as follows:

	For the Three Months Ended September 30,		For the Nine Months Ended September 30,	
	2019	2018	2019	2018
Subscriber acquisition costs, excluding connected vehicle services	$ 101	$ 109	$ 313	$ 352
Less: margin from sales of radios and accessories, excluding connected vehicle services	(38)	(33)	(106)	(89)
	$ 63	$ 76	$ 207	$ 263
Installations	2,998	3,227	9,153	9,920
SAC, per installation [(a)]	$ 21.01	$ 23.67	$ 22.62	$ 26.50

(a) Amounts may not recalculate as a result of rounding.

Ad supported listener hours - is based on the total bytes served over our advertising supported platforms for each track that is requested and served from our Pandora servers, as measured by our internal analytics systems, whether or not a listener listens to the entire track. For non-music content such as podcasts, episodes are divided into approximately track-length parts, which are treated as tracks. To the extent that third-party measurements of advertising hours are not calculated using a similar server-based approach, the third-party measurements may differ from our measurements.

RPM - is calculated by dividing advertising revenue, excluding AdsWizz and other off-platform revenue, by the number of thousands of listener hours on our Pandora advertising-based service.

LPM - is calculated by dividing advertising licensing costs by the number of thousands of listener hours on our Pandora advertising-based service.

LPU - is calculated by dividing subscriber licensing costs by the number of paid subscribers on our Pandora subscription services.