
SIRIUS XM RADIO INC.

(Exact name of company as specified in its charter)

QUARTERLY REPORT

For the Quarterly Period Ended March 31, 2020

Explanatory Note

Sirius XM Radio Inc. (“Sirius XM”) is furnishing this Quarterly Report for the quarterly period ended March 31, 2020 (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 March 31, 2020 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 March 31, 2020 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.

SIRIUS XM RADIO INC. AND 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)

<i>(in millions)</i>	For the Three Months Ended March 31,	
	2020	2019
Revenue:		
Subscriber revenue	\$ 1,585	\$ 1,458
Advertising revenue	285	209
Equipment revenue	41	41
Other revenue	41	36
Total revenue	1,952	1,744
Operating expenses:		
Cost of services:		
Revenue share and royalties	570	492
Programming and content	118	106
Customer service and billing	118	113
Transmission	40	31
Cost of equipment	4	6
Subscriber acquisition costs	99	108
Sales and marketing	225	183
Engineering, design and development	71	54
General and administrative	107	135
Depreciation and amortization	132	107
Acquisition and other related costs	—	76
Total operating expenses	1,484	1,411
Income from operations	468	333
Other (expense) income:		
Interest expense	(97)	(89)
Loss on extinguishment of debt	—	(1)
Other (expense) income	44	4
Total other (expense) income	(53)	(86)
Income before income taxes	415	247
Income tax expense	(89)	(81)
Net income attributable to Sirius XM Radio Inc.'s sole stockholder	\$ 326	\$ 166
Foreign currency translation adjustment, net of tax	(25)	7
Total comprehensive income attributable to Sirius XM Radio Inc.'s sole stockholder	\$ 301	\$ 173

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)

ASSETS	March 31, 2020 (unaudited)	December 31, 2019
Current assets:		
Cash and cash equivalents	\$ 40	\$ 106
Receivables, net	604	670
Inventory, net	12	11
Related party current assets	15	22
Prepaid expenses and other current assets	212	194
Total current assets	883	1,003
Property and equipment, net	1,609	1,626
Intangible assets, net	3,429	3,467
Goodwill	3,828	3,828
Related party long-term assets	8,723	8,400
Deferred tax assets	94	166
Operating lease right-of-use assets	452	466
Other long-term assets	135	140
Total assets	\$ 19,153	\$ 19,096
LIABILITIES AND STOCKHOLDER EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	\$ 1,029	\$ 1,151
Accrued interest	98	160
Current portion of deferred revenue	1,923	1,930
Current maturities of debt	2	2
Operating lease current liabilities	47	46
Related party current liabilities	3	4
Total current liabilities	3,102	3,293
Long-term deferred revenue	126	130
Long-term debt	7,881	7,917
Deferred tax liabilities	70	70
Operating lease liabilities	444	456
Other long-term liabilities	93	94
Total liabilities	11,716	11,960
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 March 31, 2020 and December 31, 2019, respectively	—	—
Accumulated other comprehensive income (loss), net of tax	(17)	8
Additional paid-in capital	8,680	8,680
Accumulated deficit	(1,226)	(1,552)
Total stockholder equity	7,437	7,136
Total liabilities and stockholder equity	\$ 19,153	\$ 19,096

See accompanying notes to the unaudited consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
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CONSOLIDATED STATEMENTS OF STOCKHOLDER EQUITY
(UNAUDITED)

For the Three Months Ended March 31, 2020

<i>(in millions)</i>	Common Stock		Accumulated Other Comprehensive Income (Loss)	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
	Shares	Amount				
Balance at December 31, 2019	—	\$ —	\$ 8	\$ 8,680	\$ (1,552)	\$ 7,136
Comprehensive income, net of tax	—	—	(25)	—	326	301
Balance at March 31, 2020	—	\$ —	\$ (17)	\$ 8,680	\$ (1,226)	\$ 7,437

For the Three Months Ended March 31, 2019

<i>(in millions)</i>	Common Stock		Accumulated Other Comprehensive (Loss) Income	Additional Paid-in Capital	Accumulated Deficit	Total Stockholder Equity
	Shares	Amount				
Balance at December 31, 2018	—	\$ —	\$ (6)	\$ 8,680	\$ (2,450)	\$ 6,224
Comprehensive income, net of tax	—	—	7	—	166	173
Balance at March 31, 2019	—	\$ —	\$ 1	\$ 8,680	\$ (2,284)	\$ 6,397

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)

<i>(in millions)</i>	For the Three Months Ended March 31,	
	2020	2019
Cash flows from operating activities:		
Net income	\$ 325	\$ 166
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	132	107
Non-cash interest expense, net of amortization of premium	3	2
Provision for doubtful accounts	19	14
Amortization of deferred income related to equity method investment	(1)	(1)
Loss on extinguishment of debt	—	1
Loss on unconsolidated entity investments, net	2	4
Gain on fair value instrument	(39)	(3)
Loss (gain) on other investments	5	(2)
Share-based payment expense	55	70
Deferred income taxes	80	77
Changes in operating assets and liabilities:		
Receivables	47	(13)
Inventory	(1)	2
Related party, net	(28)	(63)
Prepaid expenses and other current assets	(18)	(31)
Other long-term assets	2	3
Operating lease right-of-use assets	14	19
Accounts payable and accrued expenses	(131)	45
Accrued interest	(62)	(42)
Deferred revenue	(11)	20
Operating lease liabilities	(11)	(17)
Other long-term liabilities	(1)	5
Net cash provided by operating activities	381	363
Cash flows from investing activities:		
Additions to property and equipment	(62)	(90)
Purchases of other investments	(6)	(6)
Acquisition of business, net of cash acquired	—	313
Sale of short-term investments	—	72
Investments in related parties and other equity investees	(80)	(5)
Repayment from related party	3	—
Net cash (used in) provided by investing activities	(145)	284
Cash flows from financing activities:		
Intercompany financing activities	(302)	(630)
Revolving credit facility, net of deferred financing costs	—	143
Principal payments of long-term borrowings	(2)	(152)
Net cash used in financing activities	(304)	(639)
Net (decrease) increase in cash, cash equivalents and restricted cash	(68)	8
Cash, cash equivalents and restricted cash at beginning of period	120	65
Cash, cash equivalents and restricted cash at end of period(1)	\$ 52	\$ 73

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)

<i>(in millions)</i>	For the Three Months Ended March 31,	
	2020	2019
Supplemental Disclosure of Cash and Non-Cash Flow Information		
Cash paid during the period for:		
Interest, net of amounts capitalized	\$ 155	\$ 128
Income taxes paid	\$ 5	\$ 1
Non-cash investing and financing activities:		
Holdings' shares issued related to acquisition of a business	\$ —	\$ 2,355
Accumulated other comprehensive income (loss), net of tax	\$ (25)	\$ 7

- (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.

<i>(in millions)</i>	March 31, 2020	December 31, 2019	March 31, 2019	December 31, 2018
Cash and cash equivalents	\$ 40	\$ 106	\$ 62	\$ 54
Restricted cash included in Other long-term assets	12	14	11	11
Total cash, cash equivalents and restricted cash at end of period	\$ 52	\$ 120	\$ 73	\$ 65

See accompanying notes to the unaudited consolidated financial statements.

SIRIUS XM RADIO INC. AND SUBSIDIARIES
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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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(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. The Sirius XM 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 March 31, 2020, our Sirius XM business had approximately 34.8 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 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 March 31, 2020, 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 2018, Pandora entered in to an agreement with SoundCloud Holdings, LLC ("SoundCloud") to be its exclusive US ad sales representative. Through this arrangement Pandora is able to offer advertisers the ability to execute campaigns in the US across the Pandora and SoundCloud listening platforms. In addition, through AdsWizz Inc., Pandora provides a comprehensive digital audio and programmatic advertising technology platform, which connects audio publishers and advertisers with a variety of ad insertion, campaign trafficking, yield optimization, programmatic buying, marketplace and podcast monetization solutions.

On February 10, 2020, Sirius XM invested \$75 in SoundCloud. SoundCloud is the world’s largest open audio platform, with a connected community of creators, listeners, and curators. SoundCloud’s platform enables its users to upload, promote, share and create audio entertainment. The minority investment complements the existing ad sales relationship between SoundCloud and Pandora. Refer to Note 11 for more information on this investment. Together, Sirius XM, Pandora and SoundCloud reach more than 140 million listeners, creating North America's largest digital audio advertising marketplace.

Impact of the coronavirus (“COVID-19”) pandemic

The extent to which the COVID-19 pandemic and the related economic impact may affect our financial condition or results of operations is uncertain. The extent of the impact on our operational and financial performance will depend on various

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factors, including the duration and spread of the outbreak and its impact on vehicle sales, advertising and consumer spending. To date, the pandemic has not increased our costs of or access to capital under our revolving credit facility, and we do not believe it is reasonably likely to in the future. In addition, we do not believe that the pandemic will affect our ongoing ability to meet the covenants in our debt instruments, including under our revolving credit facility. Due to the nature of our subscription business, the effect of the COVID-19 pandemic may not be fully reflected in our results of operations until future periods.

Liberty Media

As of March 31, 2020, Liberty Media Corporation (“Liberty Media”) beneficially owned, directly and indirectly, approximately 72% of the outstanding shares of Holdings' common stock. As a result, Holdings is a “controlled company” for the purposes of the NASDAQ corporate governance requirements.

Basis of Presentation

The accompanying 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.

The unaudited consolidated financial statements for Sirius XM for the quarterly period ended March 31, 2020 are essentially identical to the unaudited consolidated financial statements included in Holdings' Form 10-Q for the quarterly period ended March 31, 2020, filed with the SEC on April 28, 2020, 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 11 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 SiriusXM as book basis is lower than tax basis. 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 March 31, 2020 and for the three months ended March 31, 2020 and 2019 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, 2019, 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, 2019, which was filed with the SEC on February 4, 2020.

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

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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 16 for information related to our segments.

We have evaluated events subsequent to the balance sheet date and prior to the furnishing of this Quarterly Report for the three months ended March 31, 2020 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 and income taxes.

We are not presently aware of any events or circumstances arising from the COVID-19 pandemic that would require us to update our estimates, judgments or revise the carrying value of our assets or liabilities. Our estimates may change, however, as new events occur and additional information is obtained, any such changes will be recognized in the consolidated financial statements. Actual results could differ from estimates and any such differences may be material to our financial statements.

(2) 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 March 31, 2020 and December 31, 2019, 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 liabilities measured at fair value were as follows:

	March 31, 2020				December 31, 2019			
	Level 1	Level 2	Level 3	Total Fair Value	Level 1	Level 2	Level 3	Total Fair Value
Liabilities:								
Debt ^(a)	—	\$ 8,013	—	\$ 8,013	—	\$ 8,378	—	\$ 8,378

(a) 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 March 31, 2020 and December 31, 2019.

Accumulated Other Comprehensive Income (Loss)

Accumulated other comprehensive loss of \$17 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 months ended March 31, 2020, we recorded foreign currency translation adjustment loss of \$25, net of tax benefit of \$8. During the three months ended March 31, 2019, we recorded foreign currency translation adjustment income of \$7, net of a tax expense of \$2.

Recently Adopted Accounting Policies

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

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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 will be applied prospectively to all implementation costs incurred after adoption. This ASU will not have a material impact on our consolidated statements of operations.

(3) 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

We recognized acquisition related costs of \$76 that were expensed in Acquisition and other related costs in our unaudited consolidated statements of comprehensive income during the three months ended March 31, 2019.

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 was \$251 and \$122, respectively, for the three months ended March 31, 2019. The following pro forma financial information presents our results as if the Pandora Acquisition had occurred on January 1, 2019:

	For the Three Months Ended March 31,	
	2020	2019
Total revenue	\$ 1,954	\$ 1,860
Net income	\$ 326	\$ 181

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, 2019 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.

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(4) Receivables, net

Receivables, net, includes customer accounts receivable, receivables from distributors and other receivables. We do not have any customer receivables that individually represent more than ten percent of our receivables.

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, industry experience 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:

	March 31, 2020	December 31, 2019
Gross customer accounts receivable	\$ 481	\$ 546
Allowance for doubtful accounts	(17)	(14)
Customer accounts receivable, net	\$ 464	\$ 532
Receivables from distributors	115	113
Other receivables	25	25
Total receivables, net	<u>\$ 604</u>	<u>\$ 670</u>

(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:

	March 31, 2020	December 31, 2019
Raw materials	\$ 4	\$ 3
Finished goods	12	13
Allowance for obsolescence	(4)	(5)
Total inventory, net	<u>\$ 12</u>	<u>\$ 11</u>

(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

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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 March 31, 2020, there were no indicators of impairment, and no impairment losses were recorded for goodwill during the three months ended March 31, 2020 and 2019. As of March 31, 2020, the cumulative balance of goodwill impairments recorded was \$4,766, which was recognized during the year ended December 31, 2008 and is included in the carrying value of the goodwill allocated to our Sirius XM reporting unit.

As of March 31, 2020 and December 31, 2019, the carrying amount of goodwill for our Sirius XM and Pandora reporting units was \$2,290 and \$1,553, respectively. There was no activity related to goodwill during the three months ended March 31, 2020.

(7) Intangible Assets

Our intangible assets include the following:

	Weighted Average Useful Lives	March 31, 2020			December 31, 2019		
		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	(94)	126	220	(90)	130
Licensing agreements	12 years	45	(43)	2	45	(42)	3
Software and technology	7 years	35	(26)	9	35	(25)	10
Due to Pandora Acquisition:							
Indefinite life intangible assets:							
Trademarks	Indefinite	\$ 331	\$ —	\$ 331	\$ 331	\$ —	\$ 331
Definite life intangible assets:							
Customer relationships	8 years	403	(62)	341	403	(49)	354
Software and technology	5 years	373	(88)	285	373	(69)	304
Total intangible assets		<u>\$ 3,742</u>	<u>\$ (313)</u>	<u>\$ 3,429</u>	<u>\$ 3,742</u>	<u>\$ (275)</u>	<u>\$ 3,467</u>

Indefinite Life Intangible Assets

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

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

Our annual impairment assessment of our identifiable indefinite lived intangible assets is performed as of the fourth quarter of each year. An assessment is performed at other times if an event occurs or circumstances change that would more likely than not reduce the fair value of the asset below its carrying value. If the carrying value of the intangible assets exceeds its fair value, an impairment loss is recognized in an amount equal to that excess. As of March 31, 2020, there were no indicators of impairment, and no impairment loss was recognized for intangible assets with indefinite lives during the three months ended March 31, 2020 and 2019.

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Definite Life Intangible Assets

Amortization expense for all definite life intangible assets was \$38 and \$27 for the three months ended March 31, 2020 and 2019, respectively. There were no retirements of definite lived intangible assets during the three months ended March 31, 2020.

The expected amortization expense for each of the fiscal years 2020 through 2024 and for periods thereafter is as follows:

Years ending December 31,	Amount
2020 (remaining)	\$ 114
2021	146
2022	144
2023	134
2024	69
Thereafter	156
Total definite life intangible assets, net	<u>\$ 763</u>

(8) Property and Equipment

Property and equipment, net, consists of the following:

	March 31, 2020	December 31, 2019
Satellite system	\$ 1,587	\$ 1,587
Terrestrial repeater network	100	100
Leasehold improvements	106	105
Broadcast studio equipment	138	137
Capitalized software and hardware	1,083	1,086
Satellite telemetry, tracking and control facilities	88	87
Furniture, fixtures, equipment and other	90	89
Land	38	38
Building	63	63
Construction in progress	554	505
Total property and equipment	<u>3,847</u>	<u>3,797</u>
Accumulated depreciation and amortization	(2,238)	(2,171)
Property and equipment, net	<u>\$ 1,609</u>	<u>\$ 1,626</u>

Construction in progress consists of the following:

	March 31, 2020	December 31, 2019
Satellite system	\$ 384	\$ 371
Terrestrial repeater network	8	7
Capitalized software and hardware	141	107
Other	21	20
Construction in progress	<u>\$ 554</u>	<u>\$ 505</u>

Depreciation and amortization expense on property and equipment was \$94 and \$80 for the three months ended March 31, 2020 and 2019, respectively. Property and equipment of \$29 was retired during the three months ended March 31, 2020.

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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 \$5 and \$4 for the three months ended March 31, 2020 and 2019, 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 \$4 and \$3 for the three months ended March 31, 2020 and 2019, respectively.

Satellites

As of March 31, 2020, we owned a fleet of five satellites. The chart below provides certain information on our satellites as of March 31, 2020:

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

(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 March 31,	
	2020	2019
Operating lease cost	\$ 20	\$ 17
Finance lease cost	—	1
Sublease income	—	(1)
Total lease cost	\$ 20	\$ 17

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(10) Related Party Transactions

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

Liberty Media

As of March 31, 2020, Liberty Media beneficially owned, directly and indirectly, approximately 72% of the outstanding shares of Holdings' common stock. Liberty Media has one executive, one senior advisor 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 March 31, 2020 and December 31, 2019 of Sirius XM includes \$8,228 and \$7,948 respectively, primarily for net amounts due from Holdings in connection with these equity-related transactions.

During the three months ended March 31, 2020, we used \$302 of our cash for the purchase and retirement of shares of Holdings' common stock under Holdings' repurchase program and payment of a cash dividend on Holdings' common stock. This amount is included in our Related party long-term asset balance as a receivable due from Holdings.

Sirius XM Canada

We hold a 70% equity interest and 33% voting interest in Sirius XM Canada, a privately held corporation. We own 591 shares of preferred stock of Sirius XM Canada, which has a liquidation preference of one Canadian dollar per share. Sirius XM also made a loan to Sirius XM Canada in the aggregate amount of \$131. 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 three months ended March 31, 2020 and 2019, Sirius XM Canada repaid \$3 and less than \$1 of the principal amount of the loan, respectively.

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 currently pays Sirius XM 25% of its gross revenues on a monthly basis and pursuant to the Advisory Services Agreement, Sirius XM Canada pays Sirius XM 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 March 31, 2020 and December 31, 2019 included the carrying value of our investment balance in Sirius XM Canada of \$300 and \$321, respectively, and, as of March 31, 2020 and December 31, 2019, also included \$118 and \$131, 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 March 31, 2020 and 2019. 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 and \$24 for the three months ended March 31, 2020 and 2019, respectively.

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SoundCloud

On February 10, 2020, we completed a \$75 investment in SoundCloud's Series G Membership Units ("Series G Units"). The Series G Units are convertible at the option of the holders at any time into shares of ordinary membership units of SoundCloud at a ratio of one ordinary membership unit for each Series G Unit. The investment in SoundCloud is accounted for as an equity method investment which is recorded in Related party long-term assets in our unaudited consolidated balance sheet. Sirius XM has appointed two individuals to serve on SoundCloud's nine-member board of managers. For the three months ended March 31, 2020, we recorded less than \$1 representing our share of SoundCloud's net loss in Other income (expense) in our unaudited consolidated statement of comprehensive income.

In addition to our investment in SoundCloud, in 2018 Pandora entered in to an agreement with SoundCloud to be its exclusive US ad sales representative. Through this arrangement Pandora offers advertisers the ability to execute campaigns in the US across the Pandora and SoundCloud listening platforms. We recorded revenue share expense of \$12 and \$3 related to this agreement during the three months ended March 31, 2020 and 2019, respectively. We also had related party liabilities of \$18 as of March 31, 2020 related to this agreement.

(11) Debt

Our debt as of March 31, 2020 and December 31, 2019 consisted of the following:

Issuer / Borrower	Issued	Debt	Maturity Date	Interest Payable	Principal Amount at March 31, 2020	Carrying value ^(a) at		
						March 31, 2020	December 31, 2019	
Pandora (b) (c)	December 2015	1.75% Convertible Senior Notes	December 1, 2020	semi-annually on June 1 and December 1	\$ 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	996	995	
Sirius XM (d)	May 2013	4.625% Senior Notes	May 15, 2023	semi-annually on May 15 and November 15	500	498	498	
Pandora (b) (e)	June 2018	1.75% Convertible Senior Notes	December 1, 2023	semi-annually on June 1 and December 1	193	199	238	
Sirius XM (d)	July 2019	4.625% Senior Notes	July 15, 2024	semi-annually on January 15 and July 15	1,500	1,485	1,485	
Sirius XM (d)	March 2015	5.375% Senior Notes	April 15, 2025	semi-annually on April 15 and October 15	1,000	994	993	
Sirius XM (d)	May 2016	5.375% Senior Notes	July 15, 2026	semi-annually on January 15 and July 15	1,000	992	992	
Sirius XM (d)	July 2017	5.00% Senior Notes	August 1, 2027	semi-annually on February 1 and August 1	1,500	1,489	1,488	
Sirius XM (d)	June 2019	5.500% Senior Notes	July 1, 2029	semi-annually on January 1 and July 1	1,250	1,237	1,236	
Sirius XM (f)	December 2012	Senior Secured Revolving Credit Facility (the "Credit Facility")	June 29, 2023	variable fee paid quarterly	—	—	—	
Sirius XM	Various	Finance leases	Various	n/a	n/a	1	2	
Total Debt							7,892	7,928
Less: total current maturities							2	2
Less: total deferred financing costs							9	9
Total long-term debt						\$	7,881	\$ 7,917

(a) The carrying value of the obligations is net of any remaining unamortized original issue discount.

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- (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 consolidated statements of operations. The 1.75% Convertible Senior Notes due 2023 were not convertible into Holdings' common stock and not redeemable as of March 31, 2020. 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 March 31, 2020. 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 March 31, 2020.

Covenants and Restrictions

Under the Credit Facility, we must comply with a debt maintenance covenant that it 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 its 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.

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 March 31, 2020 and December 31, 2019, we were in compliance with our debt covenants.

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.

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The Pandora 2020 Notes will mature on December 1, 2020, unless earlier repurchased or redeemed by Pandora or converted in accordance with their terms. As of March 31, 2020, the conversion rate applicable to the Pandora 2020 Notes was 88.5816 shares of Holdings' common stock per one thousand 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 three months ended March 31, 2019, we 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. As of March 31, 2020, the conversion rate applicable to the Pandora 2023 Notes was 151.9533 shares of Holdings' common stock per one thousand principal amount of the Pandora 2023 Notes.

(12) Stockholder Equity

Common Stock, par value \$0.001 per share

We are authorized to issue up to 9,000 shares of common stock. There were 0.001 shares of common stock of Sirius XM issued and outstanding on March 31, 2020 and December 31, 2019, 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 March 31, 2020 and December 31, 2019.

(13) Benefit Plans

We recognized share-based payment expense of \$55 and \$70 for the three months ended March 31, 2020 and 2019, 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 three months ended March 31, 2019.

2015 Long-Term Stock Incentive Plan

In May 2015, our stockholders approved the Sirius XM Holdings Inc. 2015 Long-Term Stock Incentive Plan (the "2015 Plan"). Employees, consultants and members of our 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 our 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 March 31, 2020, 158 shares of common stock were available for future grants under the 2015 Plan.

In connection with the Pandora Acquisition, we 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 share-based benefit plans in addition to the 2015 Plan — 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.

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

	For the Three Months Ended March 31,	
	2020	2019
Risk-free interest rate	1.4%	2.5%
Expected life of options — years	3.82	3.36
Expected stock price volatility	25%	26%
Expected dividend yield	0.7%	0.8%

The following table summarizes stock option activity under our share-based plans for the three months ended March 31, 2020:

	Options	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2019	208	\$ 4.46		
Granted	7	\$ 7.20		
Exercised	(11)	\$ 4.17		
Forfeited, cancelled or expired	(1)	\$ 5.93		
Outstanding as of March 31, 2020	<u>203</u>	\$ 4.56	5.51	\$ 165
Exercisable as of March 31, 2020	<u>144</u>	\$ 4.03	4.67	\$ 153

The weighted average grant date fair value per stock option granted during the three months ended March 31, 2020 was \$1.41. The total intrinsic value of stock options exercised during the three months ended March 31, 2020 and 2019 was \$32 and \$10, respectively.

We recognized share-based payment expense associated with stock options of \$11 and \$20 for the three months ended March 31, 2020 and 2019, respectively.

The following table summarizes the restricted stock unit, including PRSU, activity under our share-based plans for the three months ended March 31, 2020:

	Shares	Grant Date Fair Value Per Share
Nonvested as of December 31, 2019	75	\$ 5.95
Granted	6	\$ 7.18
Vested	(8)	\$ 5.81
Forfeited	(2)	\$ 5.94
Nonvested as of March 31, 2020	<u>71</u>	<u>\$ 6.07</u>

The total intrinsic value of restricted stock units, including PRSUs, vesting during the three months ended March 31, 2020 and 2019 was \$58 and \$74, respectively. During the three months ended March 31, 2020, we granted 3 PRSUs to certain employees. We believe it is probable that the performance target applicable to these PRSUs will be achieved.

In connection with the cash dividends paid during the three months ended March 31, 2020, 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 three months ended March 31, 2020.

We recognized share-based payment expense associated with restricted stock units, including PRSUs, of \$44 and \$50 for the three months ended March 31, 2020 and 2019, respectively.

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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 March 31, 2020 and December 31, 2019 was \$397 and \$415, respectively. The total unrecognized compensation costs at March 31, 2020 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.

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

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. Effective January 1, 2020, we began matching 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 recognized expenses of \$5 and \$2 for the three months ended March 31, 2020 and 2019, respectively, in connection with the Sirius XM and Pandora Plans.

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 each of the three months ended March 31, 2020 and 2019 was \$6. As of March 31, 2020 and December 31, 2019, the fair value of the investments held in the trust were \$36 and \$34, 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 months ended March 31, 2020 and 2019, we recorded unrealized (losses) gains on investments held in the trust of \$(5) and \$2, respectively.

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(14) Commitments and Contingencies

The following table summarizes our expected contractual cash commitments as of March 31, 2020:

	2020	2021	2022	2023	2024	Thereafter	Total
Debt obligations	\$ 1	\$ 1	\$ 1,000	\$ 693	\$ 1,500	\$ 4,750	\$ 7,945
Cash interest payments	237	390	390	339	321	703	2,380
Satellite and transmission	40	50	2	1	1	1	95
Programming and content	239	231	151	85	42	97	845
Sales and marketing	54	32	24	9	3	8	130
Satellite incentive payments	5	8	9	9	9	47	87
Operating lease obligations	53	72	64	57	43	173	462
Advertising sales commitments	6	15	—	—	—	—	21
Royalties, minimum guarantees and other	357	233	162	17	7	—	776
Total ⁽¹⁾	<u>\$ 992</u>	<u>\$ 1,032</u>	<u>\$ 1,802</u>	<u>\$ 1,210</u>	<u>\$ 1,926</u>	<u>\$ 5,779</u>	<u>\$ 12,741</u>

(1) The table does not include our reserve for uncertain tax positions, which at March 31, 2020 totaled \$11.

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.

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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 March 31, 2020, we had future minimum guarantee commitments of \$21, of which \$6 will be paid in 2020 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 three months ended March 31, 2020, we prepaid \$5 in content costs related to minimum guarantees. As of March 31, 2020, we had future fixed minimum guarantee commitments of \$183, of which \$171 will be paid in 2020 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.

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.

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

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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.”

The MMA grants a potential federal preemption defense to the claims asserted in the aforementioned lawsuits. In July 2019, Pandora took steps to avail itself of this preemption defense, including making the required payments under the MMA for certain of its uses of pre-1972 recordings. 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.

After Flo & Eddie filed its action in 2014 against Pandora, several other plaintiffs commenced separate actions, both on an individual and class action basis, alleging a variety of violations of common law and state copyright and other statutes arising from allegations that Pandora owed royalties for the public performance of pre-1972 recordings. Many of these separate actions have been dismissed or are in the process of being dismissed. None of the remaining pending actions is likely to have a material adverse effect on our business, financial condition or results of operations.

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

Copyright Royalty Board Proceeding to Determine the Rate for Statutory Webcasting. Pursuant to Sections 112 and 114 of the Copyright Act, the Copyright Royalties Board (the “CRB”) initiated a proceeding in January 2019 to set the rates and terms by which webcasters may perform sound recordings via digital transmission over the internet and make ephemeral reproductions of those recordings during the 2021-2025 rate period under the authority of statutory licenses provided under Sections 112 and 114 of the Copyright Act. We filed a petition to participate in the proceeding on behalf of our Sirius XM and Pandora businesses, as did other webcasters including Google Inc. and the National Association of Broadcasters. SoundExchange, a collective organization that collects and distributes digital performance royalties to artists and copyright holders, represents the various copyright owner participants in the proceeding, including Sony Music Entertainment, Universal Music Group and Warner Music Group. Because the proceeding focuses on setting statutory rates for non-interactive online music streaming (commonly identified as “webcasting”), the proceeding will set the rates that our Pandora business pays for music streaming on its free, ad-supported tier and that our Sirius XM business pays for streaming on its subscription internet radio service. This proceeding will not set the rates that we pay for our other music offerings (satellite radio, business establishment services) or that we pay for interactive streaming on our Pandora Plus and Pandora Premium services.

In September 2019, the participants filed written direct statements, including proposed rates and terms for the 2021-2025 period. We and other webcaster participants proposed rates below the existing statutory rates, which for commercial webcasters are currently set at \$0.0018 per performance for non-subscription transmissions (such as offered by our Pandora ad-supported business) and \$0.0024 per performance for subscription transmissions (such as offered by our Sirius XM internet radio service). SoundExchange has proposed increasing the commercial webcasting rates to \$0.0028 per performance for non-subscription transmissions and \$0.0031 per performance for subscription transmissions.

In January 2020, the participants filed written rebuttal statements, responding to each other’s proposals. A multi-week hearing was scheduled to begin before the CRB in March 2020, but has been delayed as a result of the COVID-19 pandemic. We expect the hearing to begin before the CRB sometime this summer.

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.

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None of these other matters, in our opinion, is likely to have a material adverse effect on our business, financial condition or results of operations.

(15) Income Taxes

For the three months ended March 31, 2020 and 2019, income tax expense was \$89 and \$81, respectively.

Our effective tax rate for the three months ended March 31, 2020 and 2019 was 21.4% and 33.3%, respectively. The effective tax rate for the three months ended March 31, 2020 was primarily impacted by the recognition of excess tax benefits related to share-based compensation. The effective tax rate for the three months ended March 31, 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. We estimate our effective tax rate for the year ending December 31, 2020 will be approximately 23%.

As of each of March 31, 2020 and December 31, 2019, we had a valuation allowance related to deferred tax assets of \$70 that was 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.

(16) 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 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. We report our segment information based on the "management" approach. The management approach designates the internal reporting used by management for making decisions and assessing performance as the source of our reportable segments. 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 both the three months ended March 31, 2020 and 2019.

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

	For the Three Months Ended March 31, 2020		
	Sirius XM	Pandora	Total
Revenue			
Subscriber revenue	\$ 1,457	\$ 128	\$ 1,585
Advertising revenue	44	241	285
Equipment revenue	41	—	41
Other revenue	41	—	41
Total revenue	1,583	369	1,952
Cost of services ^(a)	(593)	(246)	(839)
Segment gross profit	\$ 990	\$ 123	\$ 1,113

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

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	For the Three Months Ended March 31, 2020
Segment Gross Profit	\$ 1,113
Subscriber acquisition costs	(99)
Sales and marketing ^(a)	(208)
Engineering, design and development ^(a)	(60)
General and administrative ^(a)	(91)
Depreciation and amortization	(132)
Share-based payment expense	(55)
Total other (expense) income	(53)
Consolidated income before income taxes	\$ 415

(a) Share-based payment expense of \$11 related to cost of services, \$17 related to sales and marketing, \$11 related to engineering, design and development and \$16 related to general and administrative has been excluded.

	For the Three Months Ended March 31, 2019		
	Sirius XM	Pandora	Total
Revenue			
Subscriber revenue	\$ 1,370	\$ 88	\$ 1,458
Advertising revenue	46	163	209
Equipment revenue	41	—	41
Other revenue	36	—	36
Total revenue	1,493	251	1,744
Cost of services ^(b)	(569)	(170)	(739)
Segment gross profit	\$ 924	\$ 81	\$ 1,005

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

	For the Three Months Ended March 31, 2019
Segment Gross Profit	\$ 1,005
Subscriber acquisition costs	(108)
Sales and marketing ^(b)	(168)
Engineering, design and development ^(b)	(45)
General and administrative ^(b)	(119)
Depreciation and amortization	(107)
Share-based payment expense	(49)
Acquisition and other related costs	(76)
Total other (expense) income	(86)
Consolidated income before income taxes	\$ 247

(b) Share-based payment expense of \$9 related to cost of services, \$15 related to sales and marketing, \$9 related to engineering, design and development and \$16 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.

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As of March 31, 2020, 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 months ended March 31, 2020 and 2019.

(17) Subsequent Events

Holdings' Capital Return Program

On April 21, 2020, 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 May 29, 2020 to Holdings' stockholders of record as of the close of business on May 8, 2020.

Asset Disposal

In April 2020, we announced that we are discontinuing the Automatic product. We will take an impairment and restructuring charge in the second quarter of 2020 related to this disposal.

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' Quarterly Report on Form 10-Q for the quarter ended March 31, 2020.

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 I, Item 1A, of Holdings' Annual Report on Form 10-K for the year ended December 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, 2019.

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

- The current COVID-19 pandemic is adversely impacting our business
- 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
- Our Pandora ad-supported business has suffered a loss of monthly active users, which may adversely affect our Pandora business
- Privacy and data security laws and regulations may hinder our ability to market our services, sell advertising and impose legal liabilities
- We engage in extensive marketing efforts and the continued effectiveness of those efforts are an important part of our business
- Consumer protection laws and our failure to comply with them could damage our business
- A substantial number of our Sirius XM 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 to our Sirius XM service as our marketing efforts reach more price-sensitive consumers is uncertain
- Our failure to convince advertisers of the benefits of our Pandora 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 Pandora 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
- 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
- Failure of our satellites would significantly damage our business
- Our Sirius XM service may experience harmful interference from 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
- Our use of pre-1972 sound recordings on our Pandora service could result in additional costs
- 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 pay a quarterly cash dividend to holders of Holdings' 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 Holdings' 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.

Special Note Regarding the Evolving Impact of the COVID-19 Pandemic on Our Business and Operations

The statements set forth below should be read in combination with the information contained in this Item 2., “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” contained in this Quarterly Report on Form 10-Q.

General

In general, the COVID-19 pandemic, coupled with government issued stay-at-home orders, is having a widespread and broad reaching effect on the economy. Automakers have idled plants, and dealers have closed their retail operations. New and used vehicle sales have declined sharply in recent weeks. Sporting events have been cancelled, theaters are closed and concerts have been postponed indefinitely. The impact of the COVID-19 pandemic on the travel industry has been far-reaching, adversely affecting airlines, hotels, cruise ships and theme parks. Unemployment is rising at historic rates as non-essential businesses have been closed and workers have been furloughed. Media spending by businesses has dropped sharply. To add to the uncertainty, it is unclear when an economic recovery could start and what a recovery will look like after this historic shutdown of the economy.

Against this background and these broad-based economic effects, the full extent to which the COVID-19 pandemic may negatively impact our business is still uncertain. The scope of the effects of the COVID-19 pandemic on our businesses depends on many factors beyond our control, and the effects are difficult to assess or predict with meaningful precision both generally and specifically as to our Sirius XM and Pandora businesses. While, due to the nature of our business, the effect of the pandemic may not be fully reflected in our results of operations until future periods, we believe that the adverse impact of the COVID-19 pandemic will be material to our business.

Potential Impact on our Results of Operations

It is difficult to predict how the COVID-19 pandemic will affect our company in the long-term. Based on what we have observed to date, however, we have attempted below to provide our projection as to how the pandemic will affect our business, including our revenue and expenses, over the next six months. The COVID-19 pandemic did not have a material effect on our revenue and expenses during the quarter ended March 31, 2020. We presently believe that the COVID-19 pandemic and its related economic impact will:

- adversely affect our subscriber revenue due to the decline in sales of new and used vehicles, reduced drive time, increased churn and the inability of our vendors to fully staff call centers;
- cause a decline in advertising revenues in our Pandora and SiriusXM businesses as third parties pull back on advertising spending generally;
- have an adverse effect on our equipment revenue and the sale of satellite radios, components and accessories;
- negatively impact our other revenue as the pandemic is anticipated to have similar adverse effects on Sirius XM Canada and its service as well as adversely affect our connected services business;
- reduce our revenue share and royalties expenses, although in our Pandora ad-supported service royalty reductions may not be commensurate with the decline in ad revenues;
- not significantly affect our programming and content expenses as we expect to continue to honor our agreements to acquire, create, promote and produce content, including our obligations in some cases to sports leagues that have cancelled significant portions of their seasons;
- reduce our customer service and billing costs as we may experience lower costs as a result of the inability of our vendors to fully staff the operation and management of customer service centers, although such cost reductions are expected to be partially offset by increased bad debt expense;
- not significantly affect our transmission expenses and costs of equipment expenses;
- reduce subscriber acquisition costs as hardware subsidies paid to radio manufacturers, distributors and automakers and subsidies paid for chipsets and certain other components used in manufacturing radios are expected to decline as a result of a reduction in vehicle production and possible disruptions to the supply chain;
- decrease sales and marketing expenses as the reduction in auto sales is anticipated to reduce trial subscription starts, the volume of our marketing campaigns and the associated expenses related to direct mail, outbound telemarketing and email communications, and as we likely reduce our spending on marketing, advertising, media and production, and digital performance media;
- reduce our engineering, design and development expenses as we plan to slow the development of new products and services, including streaming and connected vehicle services, and research and development efforts in the ordinary course;
- reduce our general and administrative expenses as a result of reductions in compensation, travel and entertainment and other costs; and
- not affect our depreciation and amortization expenses.

Other Potential Impacts

We have taken actions to help ensure that our audio entertainment service will continue uninterrupted through the COVID-19 pandemic, including activating our business continuity plans and implementing steps to enable employees to work remotely. The impact of these actions on our workforce are also difficult to assess, but the experience has presented new challenges for our employees as they balance the demands of the pandemic with their daily operational role. To date, however, we do not believe that these remote work arrangements have adversely affected our ability to maintain our financial reporting systems, internal control over financial reporting and disclosure controls and procedures. In addition, we do not expect to encounter any significant challenges to our ability to maintain these systems and controls.

We do not expect the COVID-19 pandemic and its related economic impact to affect our capital and financial resources, including our liquidity position. To date, the pandemic has not increased our costs of or reduced our access to capital under our revolving credit facility, and we do not believe it is reasonably likely to in the future. In addition, we do not believe that the

pandemic will affect our ongoing ability to meet the covenants in our debt instruments, including under our revolving 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 future stock repurchases, future dividend payments and strategic opportunities. As of March 30, 2020, \$1,749 was available for future borrowing under our revolving credit facility.

We also do not expect the pandemic to affect the assets on our balance sheet and our ability to timely account for those assets. For example, we do not anticipate making any significant changes as a result of the pandemic in judgments in determining the fair-value of assets measured in accordance with generally accepted accounting principles.

In addition, we do not anticipate any material impairments with respect to goodwill, indefinite life and definite life intangible assets, right of use assets or investments, increases in allowances for credit losses, restructuring charges, other expenses, or changes in accounting judgments that would have an adverse impact on our financial statements.

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.

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. The Sirius XM 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 March 31, 2020, our Sirius XM business had approximately 34.8 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 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 March 31, 2020, 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 2018, Pandora entered in to an agreement with SoundCloud to be its exclusive US ad sales representative. Through this arrangement Pandora offers advertisers the ability to execute campaigns in the US across the Pandora and SoundCloud listening platforms. In addition, through AdsWizz, Pandora provides a comprehensive digital audio advertising technology platform, which connects audio publishers and advertisers with a variety of ad insertion, campaign trafficking, yield optimization, programmatic buying, marketplace and podcast monetization solutions. As of March 31, 2020, our Pandora business had approximately 60.9 million monthly active users.

On February 10, 2020, Sirius XM completed a \$75 investment in SoundCloud's Series G Membership Units (“Series G Units”). SoundCloud is the world’s largest open audio platform, with a connected community of creators, listeners, and curators. SoundCloud’s platform enables its users to upload, promote, share and create audio entertainment. The minority investment complements the existing ad sales relationship between SoundCloud and Pandora. Together, Sirius XM, Pandora and SoundCloud reach more than 140 million listeners, creating North America's largest digital audio advertising marketplace.

Liberty Media

As of March 31, 2020, Liberty Media beneficially owned, directly and indirectly, approximately 72% of the outstanding shares of Holdings' common stock. As a result, we are a “controlled company” for the purposes of the NASDAQ corporate governance requirements.

Results of Operations

Actual Results

Set forth below are our results of operations for the three months ended March 31, 2020 compared with the three months ended March 31, 2019. The discussion of our results of operations for the three months ended March 31, 2020 includes the financial results of Pandora for the entire period, while the results of operations for the three months ended March 31, 2019 includes the financial results of Pandora from the date of the Pandora Acquisition, February 1, 2019. The inclusion of Pandora's results in the three months ended March 31, 2020 for the entire period 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 March 31,		2020 vs 2019 Change	
	2020	2019	Amount	%
<i>Revenue</i>				
Sirius XM:				
Subscriber revenue	\$ 1,457	\$ 1,370	\$ 87	6 %
Advertising revenue	44	46	(2)	(4)%
Equipment revenue	41	41	—	— %
Other revenue	41	36	5	14 %
Total Sirius XM revenue	1,583	1,493	90	6 %
Pandora:				
Subscriber revenue	128	88	40	45 %
Advertising revenue	241	163	78	48 %
Total Pandora revenue	369	251	118	47 %
Total consolidated revenue	1,952	1,744	208	12 %
<i>Cost of services</i>				
Sirius XM:				
Revenue share and royalties	366	347	19	5 %
Programming and content	112	102	10	10 %
Customer service and billing	93	98	(5)	(5)%
Transmission	27	25	2	8 %
Cost of equipment	4	6	(2)	(33)%
Total Sirius XM cost of services	602	578	24	4 %
Pandora:				
Revenue share and royalties	204	145	59	41 %
Programming and content	6	4	2	50 %
Customer service and billing	25	15	10	67 %
Transmission	13	6	7	117 %
Total Pandora cost of services	248	170	78	46 %
Total consolidated cost of services	850	748	102	14 %
Subscriber acquisition costs	99	108	(9)	(8)%
Sales and marketing	225	183	42	23 %
Engineering, design and development	71	54	17	31 %
General and administrative	107	135	(28)	(21)%
Depreciation and amortization	132	107	25	23 %
Acquisition and other related costs	—	76	(76)	nm
Total operating expenses	1,484	1,411	73	5 %
Income from operations	468	333	135	41 %
Other (expense) income:				
Interest expense	(97)	(89)	(8)	(9)%
Loss on extinguishment of debt	—	(1)	1	nm
Other (expense) income	44	4	40	nm
Total other (expense) income	(53)	(86)	33	(38)%
Income before income taxes	415	247	168	68 %
Income tax expense	(89)	(81)	(8)	(10)%
Net income	\$ 326	\$ 166	\$ 160	96 %

nm - not meaningful

Sirius XM Revenue

Refer to page 36 for our discussion on Sirius XM revenue.

Pandora Revenue

The three months ended March 31, 2020 includes Pandora's revenue for the entire period while the three months ended March 31, 2019 includes Pandora's revenue from the acquisition date, February 1, 2019. Refer to page 37 for our discussion on Pandora revenue.

Sirius XM Cost of Services

Refer to page 37 for our discussion on Sirius XM cost of services.

Pandora Cost of Services

The three months ended March 31, 2020 includes Pandora's cost of services for the entire period while the three months ended March 31, 2019 includes Pandora's cost of services from the acquisition date, February 1, 2019. Refer to page 38 for our discussion on Pandora cost of services.

Operating Costs

Subscriber Acquisition Costs are costs associated with our satellite radio service 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 March 31, 2020 and 2019, subscriber acquisition costs were \$99 and \$108, respectively, a decrease of 8%, or \$9, and decreased as a percentage of total revenue. The decrease was driven by lower hardware subsidies as certain subsidy rates decreased as well as a decline in OEM installations as a result of the COVID-19 pandemic.

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 March 31, 2020 and 2019, sales and marketing expenses were \$225 and \$183, respectively, an increase of 23%, or \$42, and increased as a percentage of total revenue. The increase was primarily due to the inclusion of Pandora for a full three months, and additional subscriber communications, retention programs and acquisition campaigns, as well as higher personnel-related costs.

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 March 31, 2020 and 2019, engineering, design and development expenses were \$71 and \$54, respectively, an increase of 31%, or \$17, and increased as a percentage of total revenue. The increase was primarily due to the inclusion of Pandora for a full three months as well as higher data costs.

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 March 31, 2020 and 2019, general and administrative expenses were \$107 and \$135, respectively, a decrease of 21%, or \$28, and decreased as a percentage of total revenue. The decrease was primarily driven by a one-time \$25 legal settlement reserve associated with Do-Not-Call litigation recorded in the first quarter of 2019 and lower personnel costs, partially offset by the inclusion of Pandora for a full three months.

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 March 31, 2020 and 2019, depreciation and amortization expense was \$132 and \$107, respectively, an increase of 23%, or \$25, and increased as a percentage of total revenue. The increase was driven by higher depreciation and amortization costs related to additional assets placed in-service and the inclusion of Pandora for a full three months.

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

For the three months ended March 31, 2019, acquisition and other related costs were \$76. There were no acquisition and other related costs in 2020.

Other (Expense) Income

Interest Expense includes interest on outstanding debt.

For the three months ended March 31, 2020 and 2019, interest expense was \$97 and \$89, respectively. The increase was primarily driven by higher average debt due to the issuances of Sirius XM's 5.500% Senior Notes due 2029 and 4.625% Senior Notes due 2024 as well as the inclusion of Pandora debt, partially offset by the redemption of Sirius XM's 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 \$1 loss on extinguishment of debt during the three months ended March 31, 2019. The loss was due to 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 months ended March 31, 2020.

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

For the three months ended March 31, 2020 and 2019, other (expense) income was \$44 and \$4, respectively. For the three months ended March 31, 2020, we recorded a gain on the fair value of Pandora's 2023 Notes, a one-time lawsuit settlement of \$7 and interest earned on our loan to Sirius XM Canada; partially offset by trading losses associated with the investments held for our Deferred Compensation Plan and our share of Sirius XM Canada's net loss and losses on other investments. For the three months ended March 31, 2019, we recorded our share of Sirius XM Canada's net gain, interest earned on our loan to Sirius XM Canada, the change in the fair value of the Pandora 2023 notes and trading gains associated with the investments held for our Deferred Compensation Plan, partially offset by losses on other 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 March 31, 2020 and 2019, income tax expense was \$89 and \$81, respectively.

Our effective tax rate for the three months ended March 31, 2020 and 2019 was 21.4% and 32.8%, respectively. The effective tax rate for the three months ended March 31, 2020 was primarily impacted by the recognition of excess tax benefits related to share-based compensation. The effective tax rate for the three months ended March 31, 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. We estimate our effective tax rate for the year ending December 31, 2020 will be approximately 23%.

Additionally, in connection with the Pandora Acquisition, we acquired gross NOL carryforwards of approximately \$1,287 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 months ended March 31, 2020 compared with the three months ended March 31, 2019. 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, 2019 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 40 through 43) following our discussion of results of operations.

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	For the Three Months Ended March 31,		2020 vs 2019 Change	
	2020	2019	Amount	%
<i>Revenue</i>	(Pro Forma)	(Pro Forma)		
Sirius XM:				
Subscriber revenue	\$ 1,457	\$ 1,370	\$ 87	6 %
Advertising revenue	44	46	(2)	(4)%
Equipment revenue	41	41	—	— %
Other revenue	43	38	5	13 %
Total Sirius XM revenue	1,585	1,495	90	6 %
Pandora:				
Subscriber revenue	128	134	(6)	(4)%
Advertising revenue	241	231	10	4 %
Total Pandora revenue	369	365	4	1 %
Total consolidated revenue	1,954	1,860	94	5 %
<i>Cost of services</i>				
Sirius XM:				
Revenue share and royalties	366	347	19	5 %
Programming and content	112	102	10	10 %
Customer service and billing	93	98	(5)	(5)%
Transmission	27	25	2	8 %
Cost of equipment	4	6	(2)	(33)%
Total Sirius XM cost of services	602	578	24	4 %
Pandora:				
Revenue share and royalties	206	217	(11)	(5)%
Programming and content	6	4	2	50 %
Customer service and billing	25	23	2	9 %
Transmission	13	11	2	18 %
Total Pandora cost of services	250	255	(5)	(2)%
Total consolidated cost of services	852	833	19	2 %
Subscriber acquisition costs	99	108	(9)	(8)%
Sales and marketing	225	219	6	3 %
Engineering, design and development	71	68	3	4 %
General and administrative	107	151	(44)	(29)%
Depreciation and amortization	132	122	10	8 %
Total operating expenses	1,486	1,501	(15)	(1)%
Income from operations	468	359	109	30 %
Other (expense) income:				
Interest expense	(97)	(91)	(6)	(7)%
Loss on extinguishment of debt	—	(1)	1	100 %
Other (expense) income	44	5	39	780 %
Total other (expense) income	(53)	(87)	34	39 %
Income before income taxes	415	272	143	53 %
Income tax expense	(89)	(87)	(2)	2 %
Net income	\$ 326	\$ 185	\$ 141	76 %
Adjusted EBITDA	\$ 639	\$ 567	\$ 72	13 %

nm - not meaningful

Sirius XM Revenue

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

For the three months ended March 31, 2020 and 2019, subscriber revenue was \$1,457 and \$1,370, respectively, an increase of 6%, or \$87. The increase was primarily driven by higher self-pay revenue as a result of increases in certain subscription plans, a 2% increase in the daily weighted average number of subscribers and higher U.S. Music Royalty Fees due to a higher music royalty rate.

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

For the three months ended March 31, 2020 and 2019, advertising revenue was \$44 and \$46, respectively, a decrease of 4%, or \$2. The decrease was primarily due to a fewer number of advertising spots sold and transmitted due to the cancellation of live sporting events related to the response to the COVID-19 pandemic.

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

For the three months ended March 31, 2020 and 2019, equipment revenue was \$41. Increased royalty revenue due to our transition to a new generation of chipsets was offset by lower direct sales to consumers.

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 March 31, 2020 and 2019, other revenue was \$43 and \$38, respectively, an increase of 13%, or \$5. The increase was primarily driven by higher revenue generated by our connected vehicle services.

Pandora Revenue

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

For the three months ended March 31, 2020 and 2019, Pandora subscriber revenue was \$128 and \$134, respectively, a decrease of 4%, or \$6. The decrease was primarily due to 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 March 31, 2020 and 2019, Pandora advertising revenue was \$241 and \$231, respectively, an increase of 4%, or \$10. The increase was primarily due growth in our off-platform advertising revenue and revenue growth in the AdsWizz business.

Total Consolidated Revenue

Total Consolidated Revenue for the three months ended March 31, 2020 and 2019, was \$1,954 and \$1,860, respectively, an increase of 5%, or \$94.

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 March 31, 2020 and 2019, revenue share and royalties were \$366 and \$347, respectively, an increase of 5%, or \$19, but decreased as a percentage of total Sirius XM revenue. The increase was driven by overall greater revenues subject to royalties and revenue share.

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 March 31, 2020 and 2019, programming and content expenses were \$112 and \$102, respectively, an increase of 10%, or \$10, and increased as a percentage of total Sirius XM revenue. The increase was primarily driven by higher content licensing costs as well as greater personnel-related costs.

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 March 31, 2020 and 2019, customer service and billing expenses were \$93 and \$98, respectively, a decrease of 5%, or \$5, and decreased as a percentage of total Sirius XM revenue. The decline was driven by reduced staffing resulting from stay at home orders issued in countries in which we or our vendors operate call centers and lower transaction costs from a one-time recovery of fees, partially offset by higher bad debt expense.

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 March 31, 2020 and 2019, transmission expenses were \$27 and \$25, respectively, an increase of 8%, or \$2, and increased as a percentage of total Sirius XM revenue. The increase was primarily driven by higher cloud hosting and wireless costs associated with our streaming services.

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 March 31, 2020 and 2019, cost of equipment was \$4 and \$6, respectively, a decrease of 33%, or \$2, and decreased as a percentage of equipment revenue. The decrease was primarily due to lower direct sales to consumers and higher inventory reserves.

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 March 31, 2020 and 2019, revenue share and royalties were \$206 and \$217, respectively, a decrease of 5%, or \$11, and decreased as a percentage of total Pandora revenue. The decrease was primarily due a reversal of a pre-acquisition reserve of \$16 for royalties, and lower costs resulting from renegotiated agreements with major and independent labels, distributors, PROs and publishers, partially offset by growth in off-platform advertising revenue.

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

For the three months ended March 31, 2020 and 2019, programming and content expenses were \$6 and \$4, respectively, an increase of 50%, or \$2, and increased as a percentage of total Pandora revenue. The increase was primarily attributable to higher personnel-related costs.

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

For the three months ended March 31, 2020 and 2019, customer service and billing expenses were \$25 and \$23, respectively, an increase of 9%, or \$2, and increased as a percentage of total Pandora revenue. The increase was primarily driven by higher bad debt expense.

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 March 31, 2020 and 2019, transmission expenses were \$13 and \$11, respectively, an increase of 18%, or \$2, and increased as a percentage of total Pandora revenue. The increase was driven by higher web hosting costs.

Operating Costs

Subscriber Acquisition Costs are costs associated with our satellite radio service 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 March 31, 2020 and 2019, subscriber acquisition costs were \$99 and \$108, respectively, a decrease of 8%, or \$9, and decreased as a percentage of total revenue. The decrease was driven by lower hardware subsidies as certain subsidy rates decreased as well as a decline in OEM installations as a result of the COVID-19 pandemic.

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 March 31, 2020 and 2019, sales and marketing expenses were \$225 and \$219, respectively, an increase of 3%, or \$6, but decreased as a percentage of total revenue. The increase was primarily due to additional subscriber communications, retention programs and acquisition campaigns, as well as higher personnel-related costs.

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 March 31, 2020 and 2019, engineering, design and development expenses were \$71 and \$68, respectively, an increase of 4%, or \$3, but decreased as a percentage of total revenue. The increase was driven by higher data costs.

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 March 31, 2020 and 2019, general and administrative expenses were \$107 and \$151, respectively, a decrease of 29%, or \$44, and decreased as a percentage of total revenue. The decrease was primarily driven by a one-time \$25 legal settlement reserve associated with Do-Not-Call litigation recorded in the first quarter of 2019 and lower personnel costs.

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 March 31, 2020 and 2019, depreciation and amortization expense was \$132 and \$122, respectively, an increase of 8%, or \$10, and increased as a percentage of total revenue. The increase was driven by 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 March 31, 2020 and 2019, interest expense was \$97 and \$91, respectively, an increase of 7%, or \$6. The increase was 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 and lower interest rates.

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

During the three months ended March 31, 2019, Pandora recorded a \$1 loss on extinguishment of debt primarily due to the exchange of its 1.75% Convertible Senior Notes due 2020 for new 1.75% Convertible Senior Notes due 2023. There was no loss on extinguishment of debt during the three months ended March 31, 2020.

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 March 31, 2020 and 2019, other income was \$44 and \$5, respectively. For the three months ended March 31, 2020, we recorded a gain on the fair value of Pandora's 2023 Notes, one-time lawsuit settlement of \$7 and interest earned on our loan to Sirius XM Canada; partially offset by trading losses associated with the investments held for our Deferred Compensation Plan and our share of Sirius XM Canada's net loss and losses on other investments. For the three months ended March 31, 2019, we recorded our share of Sirius XM Canada's net gain, interest earned on our loan to Sirius XM Canada, the change in the fair value of the Pandora 2023 notes and trading gains associated with the investments held for our Deferred Compensation Plan, partially offset by losses on other 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 March 31, 2020 and 2019, income tax expense was \$89 and \$87, respectively.

Our effective tax rate for the three months ended March 31, 2020 and 2019 was 21.4% and 32.0%, respectively. The effective tax rate for the three months ended March 31, 2020 was primarily impacted by the recognition of excess tax benefits related to share-based compensation. The effective tax rate for the three months ended March 31, 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. We estimate our effective tax rate for the year ending December 31, 2020 will be approximately 23%.

In connection with the Pandora Acquisition, we acquired gross NOL carryforwards of approximately \$1,287 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 months ended March 31, 2020 and 2019 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, 2019 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 March 31, 2020

	As Reported	Predecessor Financial Information	Purchase Price Accounting Adjustments	Ref	Pro Forma
<i>Revenue</i>					
Sirius XM:					
Subscriber revenue	\$ 1,457	\$ —	\$ —		\$ 1,457
Advertising revenue	44	—	—		44
Equipment revenue	41	—	—		41
Other revenue	41	—	2	(a)	43
Total Sirius XM revenue	1,583	—	2		1,585
Pandora:					
Subscriber revenue	128	—	—		128
Advertising revenue	241	—	—		241
Total Pandora revenue	369	—	—		369
Total consolidated revenue	1,952	—	2		1,954
<i>Cost of services</i>					
Sirius XM:					
Revenue share and royalties	366	—	—		366
Programming and content	112	—	—		112
Customer service and billing	93	—	—		93
Transmission	27	—	—		27
Cost of equipment	4	—	—		4
Total Sirius XM cost of services	602	—	—		602
Pandora:					
Revenue share and royalties	204	—	2	(b)	206
Programming and content	6	—	—		6
Customer service and billing	25	—	—		25
Transmission	13	—	—		13
Total Pandora cost of services	248	—	2		250
Total consolidated cost of services	850	—	2		852
Subscriber acquisition costs	99	—	—		99
Sales and marketing	225	—	—		225
Engineering, design and development	71	—	—		71
General and administrative	107	—	—		107
Depreciation and amortization	132	—	—		132
Acquisition and other related costs	—	—	—		—
Total operating expenses	1,484	—	2		1,486
Income from operations	468	—	—		468
Other (expense) income:					
Interest expense	(97)	—	—		(97)
Loss on extinguishment of debt	—	—	—		—
Other (expense) income	44	—	—		44
Total other (expense) income	(53)	—	—		(53)
Income before income taxes	415	—	—		415
Income tax expense	(89)	—	—		(89)
Net income	\$ 326	\$ —	\$ —		\$ 326

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

Unaudited for the Three Months Ended March 31, 2019

	As Reported	Predecessor Financial Information (c)	Purchase Price Accounting Adjustments	Ref	Pro Forma
<i>Revenue</i>					
Sirius XM:					
Subscriber revenue	\$ 1,370	\$ —	\$ —		\$ 1,370
Advertising revenue	46	—	—		46
Equipment revenue	41	—	—		41
Other revenue	36	—	2	(d)	38
Total Sirius XM revenue	1,493	—	2		1,495
Pandora:					
Subscriber revenue	88	46	—		134
Advertising revenue	163	68	—		231
Total Pandora revenue	251	114	—		365
Total consolidated revenue	1,744	114	2		1,860
<i>Cost of services</i>					
Sirius XM:					
Revenue share and royalties	347	—	—		347
Programming and content	102	—	—		102
Customer service and billing	98	—	—		98
Transmission	25	—	—		25
Cost of equipment	6	—	—		6
Total Sirius XM cost of services	578	—	—		578
Pandora:					
Revenue share and royalties	145	71	1	(e)	217
Programming and content	4	—	—		4
Customer service and billing	15	8	—		23
Transmission	6	5	—		11
Total Pandora cost of services	170	84	1		255
Total consolidated cost of services	748	84	1		833
Subscriber acquisition costs	108	—	—		108
Sales and marketing	183	36	—		219
Engineering, design and development	54	14	—		68
General and administrative	135	16	—		151
Depreciation and amortization	107	6	9	(f)	122
Acquisition and other related costs	76	1	(77)	(g)	—
Total operating expenses	1,411	157	(67)		1,501
Income from operations	333	(43)	69		359
Other (expense) income:					
Interest expense	(89)	(2)	—		(91)
Loss on extinguishment of debt	(1)	—	—		(1)
Other (expense) income	4	1	—		5
Total other (expense) income	(86)	(1)	—		(87)
Income before income taxes	247	(44)	69		272
Income tax expense	(81)	—	(6)	(h)	(87)
Net income	\$ 166	\$ (44)	\$ 63		\$ 185

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

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

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

(f) 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.

(g) This adjustment eliminates the impact of acquisition and other related costs.

- (h) This adjustment to income taxes was calculated by applying Sirius XM's statutory tax rate at March 31, 2019 to the pro forma adjustments of \$69 and Pandora's loss before income tax of \$(44).

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 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 49 through 52 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 49 through 52) 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 Sirius XM's subscriber count or subscriber-based operating metrics.

Set forth below are our subscriber balances as of March 31, 2020 compared to March 31, 2019.

<i>(subscribers in thousands)</i>	As of March 31,		2020 vs 2019 Change	
	2020	2019	Amount	%
Sirius XM				
Self-pay subscribers	30,047	29,046	1,001	3 %
Paid promotional subscribers	4,719	5,125	(406)	(8)%
Ending subscribers	34,766	34,171	595	2 %
Traffic users	9,706	8,849	857	10 %
Sirius XM Canada subscribers	2,687	2,658	29	1 %
Pandora				
Monthly active users - all services	60,926	66,035	(5,109)	(8)%
Self-pay subscribers	6,215	6,160	55	1 %
Paid promotional subscribers	51	736	(685)	(93)%
Ending subscribers	6,266	6,896	(630)	(9)%

The following table contains our Non-GAAP pro forma financial and operating performance measures which are based on our adjusted results of operations for the three months ended March 31, 2020 and 2019.

<i>(subscribers in thousands)</i>	For the Three Months Ended March 31,		2020 vs 2019 Change	
	2020	2019 ⁽¹⁾	Amount	%
Sirius XM				
Self-pay subscribers	69	131	(62)	(47)%
Paid promotional subscribers	(212)	1	(213)	nm
Net additions	(143)	132	(275)	(208)%
Weighted average number of subscribers	34,824	34,015	809	2 %
Average self-pay monthly churn	1.8%	1.8%	—%	— %
ARPU ⁽²⁾	\$ 13.95	\$ 13.52	\$ 0.43	3 %
SAC, per installation	\$ 20.11	\$ 24.05	\$ (3.94)	(16)%
Pandora				
Self-pay subscribers	51	246	(195)	(79)%
Paid promotional subscribers	1	(20)	21	(105)%
Net additions ⁽³⁾	52	227	(175)	(77)%
Weighted average number of subscribers	6,244	6,709	(465)	(7)%
ARPU	\$ 6.85	\$ 6.70	\$ 0.15	2 %
Ad supported listener hours (in billions)	3.13	3.42	(0.29)	(8)%
Advertising revenue per thousand listener hours (RPM)	\$ 67.54	\$ 62.60	\$ 4.94	8 %
Licensing costs per thousand listener hours (LPM)	\$ 37.08	\$ 36.64	\$ 0.44	1 %
Licensing costs per paid subscriber (LPU)	\$ 4.11	\$ 3.97	\$ 0.14	4 %
Total Company				
Adjusted EBITDA	\$ 639	\$ 567	\$ 72	13 %
Free cash flow ⁽⁴⁾	\$ 348	\$ 300	\$ 48	16 %

nm - not meaningful

- (1) Includes Pandora's results for the three month period, including pre-acquisition results for the period January 1, 2019 through January 31, 2019.
- (2) ARPU for Sirius XM excludes subscriber revenue from our connected vehicle services of \$44 and \$36 for the three months ended March 31, 2020 and 2019, respectively.
- (3) Amounts may not sum as a result of rounding.
- (4) Free cash flow has not been adjusted for Pandora's pre-acquisition results.

Sirius XM

Subscribers. At March 31, 2020, Sirius XM had approximately 34,766 subscribers, an increase of 595, or 2%, from the approximately 34,171 as of March 31, 2019. 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 March 31, 2020 and 2019, net subscriber additions were (143) and 132, respectively. Paid promotional subscribers decreased due to declines in shipments and trial starts from automakers offering paid subscriptions. Self-pay net additions decreased as increases in subsequent owner trial conversions and reductions in vehicle related churn were offset by reduced additions from win back programs, new car conversions, and aftermarket programs, as well as increases in non-pay and other voluntary churn.

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 March 31, 2020, Sirius XM had approximately 9,706 traffic users, an increase of 857 users, or 10%, from the approximately 8,849 traffic users as of March 31, 2019.

Sirius XM Canada Subscribers. At March 31, 2020, Sirius XM Canada had approximately 2,687 subscribers, an increase of 29, or 1%, from the approximately 2,658 Sirius XM Canada subscribers as of March 31, 2019.

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 49 through 52 for more details.)

For the three months ended March 31, 2020 and 2019, our average self-pay monthly churn rate was 1.8%.

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 49 through 52 for more details.)

For the three months ended March 31, 2020 and 2019, subscriber ARPU - Sirius XM was \$13.95 and \$13.52, respectively. The increase was driven by an increase in certain subscription rates and the U. S. Music Royalty Fee.

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 49 through 52 for more details.)

For the three months ended March 31, 2020 and 2019, SAC, per installation, was \$20.11 and \$24.05, respectively. The decrease was driven by reductions to OEM hardware subsidy rates.

Pandora

Monthly Active Users. At March 31, 2020, Pandora had approximately 60,926 monthly active users, a decrease of 5,109 monthly active users, or 8%, from the 66,035 monthly active users as of March 31, 2019. The decrease in monthly active users was driven by declines in user engagement related to changes in commuting patterns, an increase in ad-supported listener churn and a decrease in the number of new users.

Subscribers. At March 31, 2020, Pandora had approximately 6,266 subscribers, a decrease of 630, or 9%, from the approximately 6,896 as of March 31, 2019.

For the three months ended March 31, 2020 and 2019, net additions were 52 and 227, respectively. Net additions decreased due to fewer new premium subscribers and higher churn.

ARPU is defined as average monthly revenue per paid subscriber on our Pandora subscription services. (See the accompanying glossary on pages 49 through 52 for more details.)

For the three months ended March 31, 2020 and 2019, subscriber ARPU - Pandora was \$6.85 and \$6.70, respectively. The increase for the three month period in subscriber ARPU was primarily driven by a shift to Pandora Plus plans.

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 March 31, 2020 and 2019, ad supported listener hours were 3,125 and 3,420, 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 March 31, 2020 and 2019, RPM was \$67.54 and \$62.60, respectively. The increase was a result of increased sell-through percentage and improved monetization on lower listener hours.

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 March 31, 2020 and 2019, LPM was \$37.08 and \$36.64, respectively. The increase was primarily driven by a listener shift to content with higher royalty 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 March 31, 2020 and 2019, LPU was \$4.11 and \$3.97, respectively. The increase was due to increased publisher rates.

Total Company

Adjusted EBITDA. Adjusted 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.) 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 49 through 52 for a reconciliation to GAAP and for more details.)

For the three months ended March 31, 2020 and 2019, adjusted EBITDA was \$639 and \$567, respectively, an increase of 13%, or \$72. The increase was due to growth 6% in Sirius XM subscriber revenue from higher U.S. Music Royalty Fee due to a higher music royalty rate and a 2% increase in the daily weighted average number of subscribers, Pandora advertising revenue, lower personnel-related costs and subscriber acquisition costs; 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 49 through 52 for a reconciliation to GAAP and for more details.)

For the three months ended March 31, 2020 and 2019, free cash flow was \$348 and \$300, respectively, an increase of \$48, or 16%. The increase was driven by a one-time payment of \$25 for a legal settlement paid during the three months ended March 31, 2019 as well as lower capital expenditures during the three months ended March 31, 2020.

Liquidity and Capital Resources

Cash Flows for the three months ended March 31, 2020 compared with the three months ended March 31, 2019.

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

	For the Three Months Ended March 31,		2020 vs 2019
	2020	2019	
Net cash provided by operating activities	\$ 381	\$ 363	\$ 18
Net cash (used in) provided by investing activities	(145)	284	(429)
Net cash used in financing activities	(304)	(639)	335
Net (decrease) increase in cash, cash equivalents and restricted cash	(68)	8	(76)
Cash, cash equivalents and restricted cash at beginning of period	120	65	55
Cash, cash equivalents and restricted cash at end of period	\$ 52	\$ 73	\$ (21)

Cash Flows Provided by Operating Activities

Cash flows provided by operating activities increased by \$18 to \$381 for the three months ended March 31, 2020 from \$363 for the three months ended March 31, 2019.

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. We paid a one-time payment of \$25 for a legal settlement during the three months ended March 31, 2019.

Cash Flows (Used in) Provided by Investing Activities

Cash flows used in investing activities in the three months ended March 31, 2020 were primarily due to our \$75 investment in SoundCloud, spending primarily for capitalized software and hardware, and to construct replacement satellites. Cash flows provided by investing activities in the three months ended March 31, 2019 were primarily due to cash received of \$313 from the Pandora Acquisition and from the sale of short-term investments of \$72, partially offset by additional spending primarily for capitalized software and hardware, and to construction replacement satellites. We spent \$45 and \$39 on capitalized software and hardware as well as \$6 and \$26 to construct replacement satellites during the three months ended March 31, 2020 and 2019, 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 three months ended March 31, 2020 were primarily due to the purchase and retirement of shares of Holdings' common stock under Holdings' repurchase program for \$243 and the payment of cash dividends on Holdings' common stock of \$59. Cash flows used in financing activities in the three months ended March 31, 2019 were primarily due to the purchase and retirement of shares of Holdings' common stock under Holdings' repurchase program for \$576, 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 \$57, partially offset by the net borrowings under the Credit Facility of \$143.

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 March 31, 2020, \$0 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, \$1,749 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 March 31, 2020, Holdings' board of directors had authorized for repurchase an aggregate of \$14,000 of Holdings' common stock. As of March 31, 2020, Holdings' cumulative repurchases since December 2012 under Holdings' stock repurchase program totaled \$13,076, and \$924 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. The size and timing of any purchases will be based on a number of factors, including price and business and market conditions.

On April 21, 2020, 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 May 29, 2020 to Holdings' stockholders of record as of the close of business on May 8, 2020. 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 March 31, 2020, 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, 2019. There have been no material changes to our critical accounting policies and estimates since December 31, 2019.

Glossary

Monthly active users - the number of distinct registered users on the Pandora services, including subscribers, which 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, (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, and loss on extinguishment of debt, 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 March 31,	
	2020	2019
Net income:	\$ 326	\$ 166
Add back items excluded from Adjusted EBITDA:		
Legal settlements and reserves	(16)	25
Acquisition and other related costs ⁽¹⁾	—	76
Share-based payment expense	55	49
Depreciation and amortization	132	107
Interest expense	97	89
Loss on extinguishment of debt	—	1
Other expense (income)	(44)	(4)
Income tax expense	89	81
Purchase price accounting adjustments:		
Revenues	2	2
Operating expenses	(2)	(1)
Pro forma adjustments ⁽²⁾	—	(24)
Adjusted EBITDA	\$ 639	\$ 567

- (1) Acquisition and other related costs include \$21 of share-based compensation expense for the three months ended March 31, 2019.
- (2) Pro forma adjustment for three months ended March 31, 2019 includes Pandora's Net income for the three months ended March 31, 2019 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, plus purchase price accounting impacts of \$1.

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 related to 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 March 31,	
	2020	2019
Cash Flow information		
Net cash provided by operating activities	\$ 381	\$ 363
Net cash (used in) provided by investing activities	\$ (145)	\$ 284
Net cash used in financing activities	\$ (304)	\$ (639)
Free Cash Flow		
Net cash provided by operating activities	\$ 381	\$ 363
Equity-related transactions for Holdings ^(a)	35	33
Additions to property and equipment	(62)	(90)
Purchases of other investments	(6)	(6)
Free cash flow	<u>\$ 348</u>	<u>\$ 300</u>

- (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 three months ended March 31, 2020 and 2019, this included payments of \$35 and \$33, respectively. 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) and 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 March 31,	
	2020	2019
Subscriber acquisition costs, excluding connected vehicle services	\$ 99	\$ 108
Less: margin from sales of radios and accessories, excluding connected vehicle services	(37)	(34)
	<u>\$ 62</u>	<u>\$ 74</u>
Installations	3,083	3,077
SAC, per installation	<u>\$ 20.11</u>	<u>\$ 24.05</u>

Ad supported listener hours - is based on the total bytes served over our Pandora 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.