UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2020

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission File Number: 001-39304

XPERI HOLDING CORPORATION
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**84-4734590**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
3025 Orchard Parkway, San Jose, California	**95134**
(Address of Principal Executive Offices)	**(Zip Code)**

(408) 321-6000
(Registrant’s Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock (par value $0.001 per share)	XPER	Nasdaq Global Select Market

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

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

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

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

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

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

The number of shares outstanding of the registrant’s common stock as of July 30, 2020 was 108,471,435.

XPERI HOLDING CORPORATION
FORM 10-Q
FOR THE QUARTERLY PERIOD ENDED JUNE 30, 2020
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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements

XPERI HOLDING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)
(unaudited)

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Revenue:				
Licensing, services and software	$ 135,996	$ 75,031	$ 253,483	$ 131,343
Hardware	1,635	84	1,813	339
Total revenue	137,631	75,115	255,296	131,682
Operating expenses:				
Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets	8,252	2,460	9,792	4,509
Cost of hardware revenue, excluding depreciation and amortization of intangible assets	1,428	69	1,472	227
Research, development and other related costs	38,227	25,346	66,833	52,005
Selling, general and administrative	68,195	27,252	104,802	56,533
Depreciation expense	3,333	1,759	5,062	3,427
Amortization expense	32,044	25,314	54,553	50,773
Litigation expense	3,871	1,231	5,974	2,521
Total operating expenses	155,350	83,431	248,488	169,995
Operating income (loss)	(17,719)	(8,316)	6,808	(38,313)
Interest expense	(6,958)	(6,199)	(11,209)	(12,884)
Other income and expense, net	578	4,806	1,143	7,108
Loss on debt extinguishment	(8,300)	—	(8,300)	—
Loss before taxes	(32,399)	(9,709)	(11,558)	(44,089)
Benefit from income taxes	(9,299)	(3,547)	(7,243)	(12,497)
Net loss	$ (23,100)	$ (6,162)	$ (4,315)	$ (31,592)
Less: net loss attributable to noncontrolling interest	(487)	(341)	(1,038)	(688)
Net loss attributable to the Company	$ (22,613)	$ (5,821)	$ (3,277)	$ (30,904)
Loss per share attributable to the Company:				
Basic	$ (0.33)	$ (0.12)	$ (0.06)	$ (0.63)
Diluted	$ (0.33)	$ (0.12)	$ (0.06)	$ (0.63)
Weighted average number of shares used in per share calculations-basic	69,160	49,259	59,462	48,918
Weighted average number of shares used in per share calculations-diluted	69,160	49,259	59,462	48,918

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

XPERI HOLDING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)
(unaudited)

	Three Months Ended		Six Months Ended	
	June 30, 2020	**June 30, 2019**	**June 30, 2020**	**June 30, 2019**
Net loss	$ (23,100)	$ (6,162)	$ (4,315)	$ (31,592)
Other comprehensive income, net of tax:				
Change in foreign currency translation adjustment	155	—	155	—
Net unrealized gains on available-for-sale debt securities	342	90	68	268
Other comprehensive income, net of tax	497	90	223	268
Comprehensive loss	(22,603)	(6,072)	(4,092)	(31,324)
Less: comprehensive loss attributable to noncontrolling interest	(487)	(341)	(1,038)	(688)
Comprehensive loss attributable to the Company	$ (22,116)	$ (5,731)	$ (3,054)	$ (30,636)

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

XPERI HOLDING CORPORATION
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except for par value)
(unaudited)

	June 30, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 174,013	$ 74,551
Available-for-sale debt securities, at fair value (amortized cost and allowance for credit losses of $25,476 and $0, respectively, at June 30, 2020)	25,564	45,802
Equity securities	—	1,124
Accounts receivable, net of allowance for credit losses of $2,469 and $566 respectively	124,746	24,177
Unbilled contracts receivable	184,101	121,826
Other current assets	36,362	13,735
Total current assets	544,786	281,215
Long-term unbilled contracts receivable	20,582	26,672
Property and equipment, net	71,025	32,877
Operating lease right-of-use assets	89,136	17,786
Intangible assets, net	1,056,266	232,275
Goodwill	846,913	385,784
Other long-term assets	123,899	71,336
Total assets	$ 2,752,607	$ 1,047,945
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 21,242	$ 4,650
Accrued legal fees	5,594	1,316
Accrued liabilities	105,368	41,433
Deferred revenue	38,639	720
Current portion of long-term debt, net	43,612	—
Total current liabilities	214,455	48,119
Deferred revenue, less current portion	22,624	—
Long-term deferred tax liabilities	28,876	29,735
Long-term debt, net	967,471	334,679
Noncurrent operating lease liabilities	73,474	13,414
Other long-term liabilities	96,240	76,898
Total liabilities	1,403,140	502,845
Commitments and contingencies (Note 15)		
Company stockholders' equity:		
Preferred stock: $0.001 par value; authorized (2020: 15,000 shares; 2019: 10,000 shares) and no shares issued and outstanding	—	—
Common stock: $0.001 par value; (2020: authorized 350,000 shares, issued 109,257 shares, outstanding 108,148 shares; 2019: authorized 150,000 shares, issued 63,622, outstanding 49,620 shares)	109	64
Additional paid-in capital	1,245,717	768,284
Treasury stock at cost (2020: 1,109 shares; 2019: 14,002 shares)	(17,572)	(368,701)
Accumulated other comprehensive income (loss)	170	(53)
Retained earnings	124,887	148,317
Total Company stockholders' equity	1,353,311	547,911
Noncontrolling interest	(3,844)	(2,811)
Total equity	1,349,467	545,100
Total liabilities and equity	$ 2,752,607	$ 1,047,945

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

XPERI HOLDING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Six Months Ended	
	June 30, 2020	**June 30, 2019**
Cash flows from operating activities:		
Net loss	$ (4,315)	$ (31,592)
Adjustments to reconcile net loss to net cash from operating activities:		
Depreciation of property and equipment	5,062	3,427
Amortization of intangible assets	54,553	50,773
Stock-based compensation expense	16,456	14,844
Deferred income taxes	(28,933)	(24,233)
Loss on debt extinguishment	8,300	—
Other	4,775	(248)
Changes in operating assets and liabilities:		
Accounts receivable	3,306	3,681
Unbilled contracts receivable	12,645	65,347
Other assets	(9,675)	4,504
Accounts payable	3,334	1,721
Accrued and other liabilities	(5,199)	(17,036)
Deferred revenue	6,933	(2,295)
Net cash from operating activities	67,242	68,893
Cash flows from investing activities:		
Purchases of property and equipment	(1,892)	(6,543)
Proceeds from sale of property and equipment	19	55
Cash acquired in merger transaction	117,424	—
Purchases of intangible assets	(519)	—
Purchases of short-term investments	—	(22,693)
Proceeds from sales of investments	7,189	4,500
Proceeds from maturities of investments	13,502	12,990
Net cash from investing activities	135,723	(11,691)
Cash flows from financing activities:		
Dividend paid	(20,153)	(19,686)
Proceeds from debt, net	1,011,343	
Repayment of debt	(344,000)	(100,000)
Repayment of assumed debt from merger transaction	(734,609)	—
Proceeds from exercise of stock options	1	520
Proceeds from employee stock purchase program	4,764	3,111
Repurchase of common stock	(20,943)	(4,264)
Net cash from financing activities	(103,597)	(120,319)
Effect of exchange rate changes on cash and cash equivalents	94	—
Net increase (decrease) in cash and cash equivalents	99,462	(63,117)
Cash and cash equivalents at beginning of period	74,551	113,625
Cash and cash equivalents at end of period	$ 174,013	$ 50,508
Supplemental disclosure of cash flow information:		
Interest paid	$ 5,807	$ 11,628
Income taxes paid, net of refunds	$ 13,723	$ 6,457
Stock issued in merger transaction	$ 828,334	$ —

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

XPERI HOLDING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF EQUITY
(in thousands)
(unaudited)

	Total Xperi Stockholders' Equity									
Three Months Ended June 30, 2020	**Common Stock**		**Additional Paid-In**	**Treasury Stock**		**Accumulated Other Comprehensive**	**Retained**	**Noncontrolling**	
	Shares	**Amount**	**Capital**	**Shares**	**Amount**	**Income (Loss)**	**Earnings**	**Interest**	**Total Equity**
Balance at April 1, 2020	50,530	$ 65	$ 779,500	14,186	$ (371,845)	$ (327)	$ 157,617	$ (3,359)	$ 561,651
Issuance of subsidiary shares to noncontrolling interest	—	—	(2)	—	—	—	—	2	—
Net loss	—	—	—	—	—	—	(22,613)	(487)	(23,100)
Other comprehensive income	—	—	—	—	—	497	—	—	497
Cash dividends paid on common stock ($0.20 per share)	—	—	—	—	—	—	(10,117)	—	(10,117)
Issuance of common stock in connection with employee stock purchase plan	119	—	1,532	—	—	—	—	—	1,532
Issuance of restricted stock, net of shares canceled	476	—	—	—	—	—	—	—	—
Repurchases of common stock, shares exchanged	(199)	—	—	199	(2,799)	—	—	—	(2,799)
Repurchases of common stock	(1,078)	—	—	1,078	(15,000)	—	—	—	(15,000)
Common stock issued in merger transaction	58,300	58	828,276	—	—	—	—	—	828,334
Retirement of treasury stock	—	(14)	(372,058)	(14,354)	372,072	—	—	—	—
Stock-based compensation expense	—	—	8,469	—	—	—	—	—	8,469
Balance at June 30, 2020	108,148	$ 109	$ 1,245,717	1,109	$ (17,572)	$ 170	$ 124,887	$ (3,844)	$ 1,349,467

	Total Xperi Stockholders' Equity									
Six Months Ended June 30, 2020	**Common Stock**		**Additional Paid-In**	**Treasury Stock**		**Accumulated Other Comprehensive**	**Retained**	**Noncontrolling**	
	Shares	**Amount**	**Capital**	**Shares**	**Amount**	**Income (Loss)**	**Earnings**	**Interest**	**Total Equity**
Balance at January 1, 2020	49,620	$ 64	$ 768,284	14,002	$ (368,701)	$ (53)	$ 148,317	$ (2,811)	$ 545,100
Issuance of subsidiary shares to noncontrolling interest	—	—	(5)	—	—	—	—	5	—
Net loss	—	—	—	—	—	—	(3,277)	(1,038)	(4,315)
Other comprehensive income	—	—	—	—	—	223	—	—	223
Cash dividends paid on common stock ($0.40 per share)	—	—	—	—	—	—	(20,153)	—	(20,153)
Issuance of common stock in connection with employee stock purchase plan	355	—	4,764	—	—	—	—	—	4,764
Issuance of restricted stock, net of shares canceled	1,334	1	—	—	—	—	—	—	1
Repurchases of common stock, shares exchanged	(383)	—	—	383	(5,943)	—	—	—	(5,943)
Repurchases of common stock	(1,078)	—	—	1,078	(15,000)	—	—	—	(15,000)
Common stock issued in merger transaction	58,300	58	828,276	—	—	—	—	—	828,334
Retirement of treasury stock	—	(14)	(372,058)	(14,354)	372,072	—	—	—	—
Stock-based compensation expense	—	—	16,456	—	—	—	—	—	16,456
Balance at June 30, 2020	108,148	$ 109	$ 1,245,717	1,109	$ (17,572)	$ 170	$ 124,887	$ (3,844)	$ 1,349,467

XPERI HOLDING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF EQUITY (continued)
(in thousands)
(unaudited)

	Total Xperi Stockholders' Equity								
Three Months Ended June 30, 2019	**Common Stock**		**Additional Paid-In**	**Treasury Stock**		**Accumulated Other Comprehensive**	**Retained**	**Noncontrolling**	
	Shares	**Amount**	**Capital**	**Shares**	**Amount**	**Income (Loss)**	**Earnings**	**Interest**	**Total Equity**
Balance at April 1, 2019	49,209	$ 63	$ 741,703	13,942	$ (367,326)	$ (150)	$ 215,444	$ (1,664)	$ 588,070
Issuance of subsidiary shares to noncontrolling interest	—	—	(4)	—	—	—	—	4	—
Net loss	—	—	—	—	—	—	(5,821)	(341)	(6,162)
Other comprehensive income	—	—	—	—	—	90	—	—	90
Cash dividends paid on common stock ($0.20 per share)	—	—	—	—	—	—	(9,864)	—	(9,864)
Issuance of common stock in connection with exercise of stock options	18	—	267	—	—	—	—	—	267
Issuance of restricted stock, net of shares canceled	159	—	—	—	—	—	—	—	—
Repurchases of common stock, shares exchanged	(48)	—	—	48	(1,133)	—	—	—	(1,133)
Stock-based compensation expense	—	—	7,221	—	—	—	—	—	7,221
Balance at June 30, 2019	49,338	$ 63	$ 749,187	13,990	$ (368,459)	$ (60)	$ 199,759	$ (2,001)	$ 578,489

	Total Xperi Stockholders' Equity								
Six Months Ended June 30, 2019	**Common Stock**		**Additional Paid-In**	**Treasury Stock**		**Accumulated Other Comprehensive**	**Retained**	**Noncontrolling**	
	Shares	**Amount**	**Capital**	**Shares**	**Amount**	**Income (Loss)**	**Earnings**	**Interest**	**Total Equity**
Balance at January 1, 2019	48,408	$ 62	$ 730,695	13,804	$ (364,195)	$ (328)	$ 253,208	$ (1,295)	$ 618,147
Issuance of subsidiary shares to noncontrolling interest	—	—	18	—	—	—	—	(18)	—
Net loss	—	—	—	—	—	—	(30,904)	(688)	(31,592)
Other comprehensive income	—	—	—	—	—	268	—	—	268
Other (1)	—	—	—	—	—	—	(2,859)	—	(2,859)
Cash dividends paid on common stock ($0.40 per share)	—	—	—	—	—	—	(19,686)	—	(19,686)
Issuance of common stock in connection with exercise of stock options	32	—	519	—	—	—	—	—	519
Issuance of common stock in connection with employee stock purchase plan	227	—	3,111	—	—	—	—	—	3,111
Issuance of restricted stock, net of shares canceled	857	1	—	—	—	—	—	—	1
Repurchases of common stock, shares exchanged	(186)	—	—	186	(4,264)	—	—	—	(4,264)
Stock-based compensation expense	—	—	14,844	—	—	—	—	—	14,844
Balance at June 30, 2019	49,338	$ 63	$ 749,187	13,990	$ (368,459)	$ (60)	$ 199,759	$ (2,001)	$ 578,489

(1) Refer to "Note 1 – *The Company and Basis of Presentation.*"

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

NOTE 1 – THE COMPANY AND BASIS OF PRESENTATION

On December 18, 2019, Xperi Corporation ("Xperi") entered into an Agreement and Plan of Merger and Reorganization with TiVo Corporation ("TiVo") to combine in an all-stock merger of equals transaction (the "Mergers"). Immediately following the consummation of the Mergers on June 1, 2020, (the "Merger Date"), Xperi Holding Corporation (the "Company"), a Delaware corporation founded in December 2019 under the name "XRAY-TWOLF HoldCo Corporation," became the parent company of both Xperi and TiVo. The common stock of Xperi and TiVo were de-registered after completion of the Mergers. On June 2, 2020, Xperi Holding Corporation's common stock, par value $0.001 per share, commenced trading on the Nasdaq Global Select Market ("Nasdaq") under the ticker symbol "XPER." See "Note 7 – Business Combination" for a more detailed description of the Mergers.

Xperi was determined to be the accounting acquirer in the Mergers. As a result, the historical financial statements of Xperi for periods prior to the Mergers are considered to be the historical financial statements of Xperi Holding Corporation. As used herein, the "Company" refers to Xperi when referring to periods prior to June 1, 2020 and to Xperi Holding Corporation when referring to periods subsequent to June 1, 2020. The Company's results of operations include the operations of TiVo after June 1, 2020, and TiVo's assets and liabilities were recorded at their estimated fair values in the Company's Condensed Consolidated Balance Sheets as of June 1, 2020. See "Note 7 – Business Combination" for additional information on the Mergers.

Xperi Holding Corporation is a leading consumer and entertainment technology licensing company and one of the industry's largest intellectual property (IP) licensing platforms, with a diverse portfolio of media and semiconductor intellectual property and more than 11,000 patents and applications. The Company invents, develops, and delivers technologies that enable extraordinary experiences. The Company's technologies, delivered via its brands (DTS, HD Radio, IMAX Enhanced, Invensas, and TiVo), and by its subsidiary, Perceive Corporation, make entertainment more entertaining, and smart devices smarter. The Company's technologies are integrated into billions of consumer devices, media platforms, and semiconductors worldwide, driving increased value for customers, partners and consumers. The Company shapes how millions of consumers access and experience entertainment content, and the Company's innovations are found in billions of devices and hundreds of millions of interfaces around the globe.

The Company has two principal businesses, a product business and an IP licensing business. The product business consists primarily of licensing Company-developed audio, digital radio, imaging, edge-based machine learning and multi-channel video user experience ("UX") solutions. Edge based machine learning, audio, digital radio, and imaging solutions include the delivery of software and/or hardware-based solutions to the Company's consumer electronics ("CE") customers, automotive manufacturers or their supply chain partners. UX products and services revenue is primarily derived from multi-channel video service providers and CE manufacturers, licensing the TiVo service and selling TiVo-enabled devices, Personalized Content Discovery, enriched Metadata, viewership data and advertising.

The IP licensing business consists primarily of licensing of the Company's innovations to leading companies in the media and semiconductor industries. Licensing arrangements include access to one or more of the Company's foundational patent portfolios and may also include access to industry-leading technologies and proven know-how. In the media industry, the Company's licensees include pay television ("Pay-TV") providers, both in the United States and internationally, consumer electronics manufacturers, and other providers of video experiences across various platforms, including over-the-top (OTT) video. In the semiconductor industry, the Company's licensees include semiconductor manufacturers, fabless companies, foundries, and packaging companies.

The accompanying interim unaudited condensed consolidated financial statements as of June 30, 2020 and 2019, and for the three and six months then ended, have been prepared by the Company in accordance with generally accepted accounting principles ("GAAP") in the United States ("U.S.") for interim financial information. The amounts as of December 31, 2019 have been derived from the Company's annual audited financial statements. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted in accordance with such rules and regulations. In the opinion of management, the accompanying unaudited condensed consolidated financial statements reflect all adjustments necessary (consisting of normal recurring adjustments) to state fairly the financial position of the Company and its results of operations and cash flows as of and for the periods presented. These financial statements should be read in conjunction with the annual audited financial statements and notes thereto as of and for the year ended December 31, 2019, included in Xperi's Annual Report on Form 10-K for the year ended December 31, 2019

and TiVo’s Annual Report on Form 10-K for the year ended December 31, 2019, both of which were filed on February 18, 2020.

The results of operations for the three and six months ended June 30, 2020 are not necessarily indicative of the results that may be expected for the full year ending December 31, 2020 or any future period and the Company makes no representations related thereto.

In the fourth quarter of 2018, the Company funded a new subsidiary, Perceive Corporation (“Perceive”), which was created to focus on delivering edge inference solutions. As a result of issuing new shares in Perceive to noncontrolling interests, the Company’s ownership interest in Perceive decreased to approximately 83% as of June 30, 2020. The operating results of Perceive have been consolidated in the Company’s condensed consolidated financial statements for all periods presented.

In the first quarter of 2019, the Company recorded an out-of-period adjustment to decrease current unbilled receivables and decrease retained earnings by $2.9 million to correct an error that originated in the first quarter of 2018 in connection with its adoption of Accounting Standards Update (“ASU”) No. 2014-09 (Topic 606) “*Revenue from Contracts with Customers*.” The adjustment relates to an error in the Company’s interpretation of the payment terms of a contract entered into in a prior year. The Company determined that the error was not material to any of its prior annual and interim period financial statements, and the impact of correcting it is not considered to be material to the financial statements for the three and six months ended June 30, 2019.

Reclassification

As a result of the Mergers, certain reclassifications of prior period amounts have been made to improve comparability and conform to the current period presentation. Presentation changes were made to the Condensed Consolidated Statements of Operations. In addition, certain reclassifications of prior period data have been made in the Notes to Condensed Consolidated Financial Statements to conform to the current period presentation.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Company’s significant accounting policies are detailed in "Note 2 - Summary of Significant Accounting Policies" in its Form 10-K for the year ended December 31, 2019. Certain updates to its revenue recognition policy as a result of the Mergers are provided in “Note 3 - Revenue.”

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. The accounting estimates and assumptions that require management’s most significant, challenging, and subjective judgment include the estimation of licensees’ quarterly royalties prior to receiving the royalty reports, the determination of stand-alone selling price and the transaction price in an arrangement with multiple performance obligations, the estimation of variable consideration, judgment used to estimate the progress toward completion in the Company’s engineering services, the collectability of accounts receivable, other intangible assets and investments, the assessment of the recoverability of goodwill, the assessment of useful lives and recoverability of other intangible assets and long-lived assets, recognition and measurement of current and deferred income tax assets and liabilities, the assessment of unrecognized tax benefits, and purchase accounting resulting from business combinations, among others. Actual results experienced by the Company may differ from management’s estimates.

The worldwide spread of the COVID-19 virus has resulted in a global slowdown of economic activity which is likely to reduce the future demand for a broad variety of goods and services, while also disrupting sales channels, marketing activities and supply chains for an unknown period of time until the virus is fully contained. The Company expects this disruption to have a negative impact on its revenue and results of operations, the size and duration of which is currently difficult to predict. The impact of the COVID-19 pandemic and related events, including actions taken by the government in response, have increased market volatility and make the estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes more difficult. As of the date of issuance of the financial statements, the Company is not aware of any specific event or circumstance that would require it to update its estimates, judgments or revise the carrying value of its assets or liabilities. These estimates may change, as new events occur and additional information is obtained, and are recognized in the consolidated financial statements as soon as they become known.

Recently Adopted Accounting Pronouncements

In September 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-13, "*Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*" ("ASU 2016-13"), which introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments. The current expected credit loss model is based on relevant information about past events, including historical experience, current conditions and reasonable and supportable forecasts that affect collectability. Current expected credit losses, and subsequent adjustments, represent an estimate of lifetime expected credit losses that are recorded as an allowance deducted from the amortized cost of the financial instrument. The updated guidance also amends the other-than-temporary impairment model for available-for-sale debt securities by requiring the recognition of impairments for credit-related losses through an allowance and eliminating the length of time a security has been in an unrealized loss position as a consideration in the determination of whether a credit loss exists. On January 1, 2020, the Company adopted the new standard using a modified retrospective transition approach for the provisions related to application of the current expected credit loss model to financial instruments and using a prospective transition approach for the provisions related to credit losses on available-for-sale debt securities. The adoption of this standard did not have a material impact on the Company's consolidated financial statements. For additional detail, refer to "Note 3 – *Revenue*."
In August 2018, 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*" ("ASU 2018-15") modifying the requirements for capitalizing costs incurred to implement a hosting arrangement that is a service contract. The modified requirements were intended to align the cost capitalization requirements for hosting arrangements with the cost capitalization requirements for internal-use software. The Company adopted the standard on January 1, 2020 and applied the modified requirements prospectively to all implementation costs incurred after the date of adoption. The adoption did not have a material impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements

On December 18, 2019, FASB released ASU 2019-12, "*Simplifying the Accounting for Income Taxes*" ("ASU 2019-12"). The purpose of the update is to reduce the complexity pertaining to certain areas in accounting for income taxes. Key amendments from ASU 2019-12 include, but are not limited to, the accounting for hybrid tax regimes, step-up in tax basis for goodwill in non-business combination transactions, intraperiod tax allocation exception to the incremental approach, and interim period accounting for enacted changes in tax law. ASU 2019-12 is effective for the Company in the first quarter of the year ending December 31, 2021. The Company is in the process of evaluating the impact of the adoption of this new standard on its consolidated financial statements.

NOTE 3 – REVENUE

Revenue Recognition

General

Revenue is recognized when control of the promised goods or services is transferred to a customer in an amount that reflects the consideration the Company expects to receive in exchange for those goods or services, which may include various combinations of goods and services which are generally capable of being distinct and accounted for as separate performance obligations. Revenue is recognized net of sales taxes collected from customers which are subsequently remitted to governmental authorities. In situations where foreign withholding taxes are withheld by the Company's licensee, revenue is recognized gross of withholding taxes that are remitted directly by the licensee to a local tax authority.

Arrangements with Multiple Performance Obligations

Some of the Company's contracts with customers contain multiple performance obligations. For these contracts, the individual performance obligations are separately accounted for if they are distinct. In an arrangement with multiple performance obligations, the transaction price is allocated among the separate performance obligations on a relative stand-alone selling price basis. The determination of stand-alone selling price considers market conditions, the size and scope of the contract, customer and geographic information, and other factors. When observable prices are not available, stand-alone selling price for separate performance obligations is based on the cost-plus-margin approach, considering overall pricing objectives. The allocation of transaction price among performance obligations in a contract may impact the amount and timing of revenue recognized in the Consolidated Statements of Operations during a given period.

Contract Modifications

Contracts may be modified due to changes in contract specifications or customer requirements. Contract modifications occur when the change in terms either creates new enforceable rights and obligations or changes existing enforceable rights and obligations. The effect of a contract modification for goods and services that are not distinct in the context of the contract on the transaction price is recognized as an adjustment to revenue on a cumulative catch-up basis. Contract modifications that result in goods or services that are distinct from the existing goods or services are accounted for as separate contracts if they are sold at their stand-alone selling price, or otherwise prospectively.

Variable Consideration

When a contract with a customer includes a variable transaction price, an estimate of the consideration which the Company expects to be entitled to for transferring the promised goods or services is made at contract inception. Depending on the terms of the contract, variable consideration is estimated using either the expected value approach or the most likely value approach. Under either approach to estimating variable consideration, the estimate considers all information (historical, current and forecast) that is reasonably available at contract inception. The amount of variable consideration is estimated at contract inception and updated as additional information becomes available. The estimate of variable consideration is included in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Subsequent changes in the transaction price resulting from changes in the estimate of variable consideration are allocated to the performance obligations in the contract on the same basis as at contract inception. Certain payments to licensees, retailers and distributors, such as market development funds and revenue shares, are treated as a reduction of the transaction price, and therefore a reduction to revenue, unless the payment is in exchange for a distinct good or service that the licensee, retailer or distributor transfers to the Company.

When variable consideration is in the form of a sales-based or usage-based royalty in exchange for a license of IP, or when a license of IP is the predominant item to which the variable consideration relates, revenue is recognized at the later of when the subsequent sale or usage occurs or the performance obligation to which some or all of the sales-based or usage-based royalty has been allocated has been satisfied or partially satisfied.

Nature of Goods and Services

The following is a discussion of the principal activities from which the Company generates its revenue.

License Agreements

The Company operates in two business segments. In its Product segment, the Company licenses its audio, imaging, edge-based machine learning and multi-channel video user experience (“UX”) solutions. In its IP Licensing segment, the Company licenses its media patent portfolios (“IP Media licensing”) to Pay-TV, CE manufacturers and other providers of video experiences across various platforms. In addition, the Company licenses its semiconductor technologies and associated patent portfolios (“IP Semiconductor licensing”) to semiconductor manufacturers, fabless companies, foundries and packaging companies. The Company licenses its technologies and portfolios under three revenue models: (i) fixed-fee IP Media licensing, (ii) fixed-fee or minimum guarantee Product or IP Semiconductor licensing, and (iii) per-unit or per-subscriber royalty licenses.

Fixed-fee IP Media licensing

The Company's long-term fixed-fee IP Media licensing agreements provide its customers with rights to future patented technologies over the term of the agreement that are highly interdependent or highly interrelated to the patented technologies provided at the inception of the agreement. The Company treats these rights as a single performance obligation with revenue recognized on a straight-line basis over the term of the fixed-fee license agreement.

At times, the Company enters into license agreements in which a licensee is released from past patent infringement claims or is granted a license to ship an unlimited number of units or for an unlimited number of subscribers over a future period for a fixed fee. In these arrangements, the Company allocates the transaction price between the release for past patent infringement claims and the future license. In determining the stand-alone selling price of the release for past patent infringement claims and the future license, the Company considers such factors as the number of units shipped in the past or the number of past subscribers and the relevant geographies of the shipped units or subscribers, the future number of subscribers or units, as well as the licensing rate the Company generally receives for per subscriber or units shipped in the same geographies. As the release from past patent infringement claims is generally satisfied at execution of the agreement, the transaction price allocated to the release from past patent infringement claims is generally recognized in the period the agreement is executed and the amount of transaction price allocated to the future license is recognized ratably over the future license term.

Fixed-fee or minimum guarantee IP Semiconductor or Product licensing

The Company enters into IP Semiconductor or Product licenses that have fixed fee or minimum guarantee arrangements, whereby licensees pay a fixed fee for the right to incorporate the Company’s technology in the licensee's products over the license term. In arrangements with a minimum guarantee, the fixed fee component corresponds to a minimum number of units or dollars that the customer must produce or pay, with additional per-unit fees for any units or dollars exceeding the minimum. In most cases, the customer pays the fixed license fee in specified installments over the license term. For both fixed fee and minimum guarantee agreements for IP Semiconductor or Product licensing, the Company recognizes the full fixed fee as revenue at the beginning of the license term, when the licensee has the right to use the IP and begins to benefit from the license.

If the contract term of a fixed fee or minimum guarantee arrangement is longer than one year, the Company also considers the scheduled payment arrangements to determine whether a significant financing component exists. In general, if the payment arrangements extend beyond the initial twelve months of the contract, the Company treats a portion of the payments as a significant financing component. The discount rate used for each arrangement reflects the rate that would be used in a separate financing transaction between the Company and the licensee at contract inception and takes into account the credit characteristics of the licensee and market interest rates as of the date of the agreement. As such, the amount of fixed fee revenue recognized at the beginning of the license term will be reduced by the calculated financing component. As payments are received from the licensee, the Company recognizes a portion of the financing component as interest income, reported as other income and expense in the Consolidated Statements of Operations.

Per-unit or per-subscriber royalty licenses

The Company recognizes revenue from per-unit or per-subscriber royalty licenses in the period in which the licensee's sales or production are estimated to have occurred, which results in an adjustment to revenue when actual sales or production are subsequently reported by the licensee, which is generally in the month or quarter following usage or shipment. The Company generally recognizes revenue from royalty licenses on a per-subscriber per-month model for licenses with service providers and a per-unit shipped or manufactured model for licenses with CE manufacturers.

Compliance Audits

The Company actively monitors and enforces its IP, including seeking appropriate compensation from customers that have under-reported royalties owed under a license agreement and from third parties that utilize the Company’s intellectual property without a license. As a result of these activities, the Company may, from time to time, recognize revenue from payments resulting from periodic compliance audits of licensees for underreporting royalties incurred in prior periods, as part of a settlement of a patent infringement dispute, or from legal judgments in a license dispute. These recoveries and settlements may cause revenue to be higher than expected during a particular reporting period and such recoveries may not occur in subsequent periods. The Company recognizes revenue from recoveries when a binding agreement has been executed and the Company concludes collection under that agreement is likely.

Arrangements with Multiple System Operators for the TiVo Service

The Company's arrangements with multiple system operators ("MSOs") typically include software customization and set-up services, associated maintenance and support, limited training, post-contract support, TiVo-enabled DVRs, non-DVR Set-Top Boxes (“STBs”), and the TiVo service.

The Company has two types of arrangements with MSOs that include technology deployment and engineering services. In instances where the Company hosts the TiVo service, non-refundable payments received for customization and set-up services are deferred and recognized as revenue ratably over the hosting term. The related cost of such services is capitalized to the extent it is deemed recoverable and amortized to cost of revenue over the same period as the related TiVo service revenue is recognized. The Company estimates the stand-alone selling prices for training, DVRs, non-DVR STBs and maintenance and support based on the price charged in stand-alone sales of the promised good or service. The stand-alone selling price for the TiVo service is determined by considering the size of the MSO and expected volume of deployment, market conditions, competitive landscape, internal costs and total gross margin objectives. For a term license to the TiVo service, the Company receives license fees for the hosted TiVo service on either a per-subscriber per-month basis or a fixed fee. The Company recognizes revenue from per-subscriber per-month licenses during the month the TiVo service is provided to the customer and recognizes revenue from fixed fee licenses ratably over the license period.

In arrangements where the Company does not host the TiVo service, which includes engineering services that are essential to the functionality of the licensed technology or involve significant customization or modification of the software, the Company recognizes revenue as progress toward completion is made using an input method based on the ratio of costs incurred to date to total estimated costs of the project. Project costs are primarily labor related to specific activities required for the project. Costs related to general infrastructure or uncommitted platform development are not included in the project cost estimates and are

expensed as incurred. Estimating project costs requires forecasting costs, tracking progress toward completion and projecting the remaining effort to complete the project. These estimates are reassessed throughout the term of the arrangement, and revisions to estimates are recognized on a cumulative catch-up basis when the changed conditions become known. Provisions for losses are recorded when estimates indicate it is probable that a loss will be incurred for the contract. The Company generally recognizes revenue from license fees for the TiVo service that the Company does not host on a per-subscriber per-month basis due to the recognition constraint on intellectual property usage-based royalties.

Subscription Services

Subscription services revenue primarily consists of fees to provide customers with access to one or more of the Company's hosted products such as its iGuide interactive program guide (“IPG”), advanced search and recommendations, metadata and analytics products, including routine customer support. The Company generally receives per-subscriber per-month fees for its iGuide IPG and search and recommendations service and revenue is recorded in the month the customer uses the service. The Company generally receives a monthly or quarterly fee from its metadata or analytics licenses for the right to use the metadata or access its analytics platform and to receive regular updates. Revenue from the Company's metadata and analytics service is recognized ratably over the subscription period.

TiVo-enabled DVRs and TiVo Service

The Company sells TiVo-enabled DVRs and the related service directly to customers through sales programs via the TiVo.com website and licenses the sale of TiVo-enabled DVRs through a limited number of retailers. All customers have the right to cancel their subscription to the TiVo service within 30 days of subscription activation for a full refund. After the initial subscription period, all customers have various pricing options when they renew their subscription.

The transaction price allocated to the DVR is recognized as revenue upon shipment to the customer and the transaction price allocated to the TiVo service is recognized as revenue ratably over the service period. Subscription revenue from lifetime subscriptions are recognized ratably over the estimated useful life of the DVR associated with the subscription. The estimated useful life for a DVR depends on a number of assumptions, including, but not limited to, customer retention rates, the timing of new product introductions and historical experience. The Company periodically reassesses the estimated useful life of a DVR. When the actual useful life of the DVR materially differs from the Company's estimate, the estimated useful life of the DVR is adjusted, which could result in the recognition of revenue over a longer or shorter period of time.

Significant Judgments

Determining whether promises to transfer multiple goods and services in contracts with customers are considered distinct performance obligations that should be accounted for separately requires significant judgment, including related to the level of integration and interdependency between the performance obligations. In addition, judgment is necessary to allocate the transaction price to the distinct performance obligations, including whether there is a discount or significant financing component to be allocated based on the relative stand-alone selling price of the various performance obligations.

Significant judgment is required to determine the stand-alone selling price for each distinct performance obligation when an observable price is not available. In instances where stand-alone selling price is not directly observable, such as when the Company does not sell the good or service separately, the stand-alone selling price is determined using a range of inputs that includes market conditions and other observable inputs. More than one stand-alone selling price may exist for individual goods and services due to the stratification of those goods and services, considering attributes such as the size of the customer and geographic region.

Due to the nature of the work required to be performed on some performance obligations, significant judgment may be required to determine the transaction price. It is common for the Company's license agreements to contain provisions that can either increase or decrease the transaction price. These variable amounts are generally estimated based on usage. In addition to estimating variable consideration, significant judgment is necessary to identify forms of variable consideration, determine whether the variable consideration relates to a sales-based or usage-based royalty of intellectual property and determine whether, and when to include estimates of variable consideration in the transaction price.

For certain licensees, royalty revenue is generated based on a licensee’s production or shipment of licensed products incorporating the Company’s intellectual property, technologies or software. Licensees with a per-unit or per-subscriber arrangement pay a per-unit royalty for each product manufactured or sold, or for each subscriber, as set forth in its license agreement. Licensees generally report manufacturing, sales or subscriber information in the month or quarter subsequent to when the production, shipment or subscription activity takes place. The Company estimates the royalties earned each quarter based on its forecast of manufacturing and sales activity by its licensees in that quarter. Any differences between actual

royalties owed by a licensee and the Company's estimate are recognized when the licensee's royalty report is received. Estimating licensees' quarterly royalties prior to receiving the royalty reports requires the Company to make significant assumptions and judgments related to forecasted trends and growth rates used to estimate quantities manufactured, shipped or subscribed by licensees, which could have a material impact on the amount of revenue recognized.

Some hardware products are sold with a right of return and, in certain circumstances, credits or incentives may be provided to customers or resellers at the time of sale. Such credits and incentives are accounted for as variable consideration and recognized as a reduction to revenue. Estimates of returns, credits and incentives are made at contract inception and updated each reporting period.

In contracts where the Company does not host the TiVo service and that include engineering services that are essential to the functionality of the licensed technology or involve significant customization or modification of software, or where the Company provides non-recurring engineering ("NRE") services, the Company recognizes revenue as progress toward completion occurs using an input method based on the ratio of costs incurred to date to total estimated costs of the project. Significant judgment is required to estimate the remaining effort to complete the project. These estimates are reassessed throughout the term of the arrangement.

Management evaluates its estimates, inputs and assumptions related to revenue recognition on an ongoing basis. The use of different estimates, inputs or assumptions may materially affect the reported amounts of assets and liabilities as of the date of the financial statements and the results of operations for the reporting period.

Practical Expedients and Exemptions

The Company applies a practical expedient to not perform an evaluation of whether a contract includes a significant financing component when the timing of revenue recognition differs from the timing of cash collection by one year or less.

The Company applies a practical expedient to expense costs to obtain a contract with a customer as incurred as a component of selling, general and administrative expenses when the amortization period would have been one year or less.

The Company applies a practical expedient when disclosing revenue expected to be recognized from unsatisfied performance obligations to exclude contracts with customers with an original duration of less than one year; contracts for which revenue is recognized based on the amount which the Company has the right to invoice for services performed and amounts attributable to variable consideration arising from (i) a sales-based or usage-based royalty of an intellectual property license or (ii) when variable consideration is allocated entirely to a wholly unsatisfied performance obligation; or to a wholly unsatisfied promise to transfer a distinct good or service that forms part of a single performance obligation.

For additional detail on the Company's revenue disaggregated by geographic location, refer to Note 16 – "*Segment and Geographic Information*."

Contract Balances

Contracts Assets

Contract assets primarily consist of unbilled contracts receivable that are expected to be received from customers in future periods, where the revenue recognized to date (or cumulative adjustments to retained earnings in the initial period of adopting Topic 606) exceeds the amount billed. The amount of unbilled contracts receivable may not exceed their net realizable value and are classified as long-term assets if the payments are expected to be received more than one year from the reporting date. Contract assets also include the incremental costs of obtaining a contract with a customer, principally sales commissions when the renewal commission is not commensurate with the initial commission, and deferred engineering costs for significant software customization or modification and set-up services to the extent deemed recoverable. Contract assets were recorded in the Condensed Consolidated Balance Sheets as follows (in thousands):

	June 30, 2020	December 31, 2019
Unbilled contracts receivable	$ 184,101	$ 121,826
Other current assets	331	—
Long-term unbilled contracts receivable	20,582	26,672
Other long-term assets	671	—
Total contract assets	$ 205,685	$ 148,498

Contract Liabilities

Contract liabilities are mainly comprised of deferred revenue related to consumer lifetime subscriptions for the TiVo service, multi-period licensing or cloud-based services, and other offerings for which the Company is paid in advance while the promised good or service is transferred to the customer at a future date or over time. Deferred revenue also includes amounts received related to professional services to be performed in the future. Deferred revenue arises when cash payments are received, including amounts which are refundable, in advance of performance obligations being completed.

Allowance for Credit Losses

The allowance for credit losses, which includes the allowance for accounts receivable and unbilled contracts receivable, represents the Company's best estimate of lifetime expected credit losses inherent in those financial assets. The Company's lifetime expected credit losses are determined using relevant information about past events (including historical experience), current conditions, and reasonable and supportable forecasts that affect collectability. The Company monitors its credit exposure through ongoing credit evaluations of its customers' financial condition and limits the amount of credit extended when deemed necessary. In addition, the Company performs routine credit management activities such as timely account reconciliations, dispute resolution, and payment confirmations. The Company may employ collection agencies and legal counsel to pursue recovery of defaulted receivables.

The Company's long-term unbilled contracts receivable is derived from fixed-fee or minimum-guarantee arrangements, primarily with large well-capitalized companies. It is considered to be of high credit quality due to past collection history and the nature of the customers.

The following table presents the activity in the allowance for credit losses for the three and six months ended June 30, 2020 (in thousands):

	Three Months Ended June 30, 2020		Six Months Ended June 30, 2020	
	Accounts Receivable	Unbilled Contracts Receivable	Accounts Receivable	Unbilled Contracts Receivable
Beginning balance	$ 2,226	$ 283	$ 566	$ —
Provision for credit loss expense	299	74	2,228 (1)	357
Recoveries/charged-off	(56)	—	(325)	—
Balance at end of period	$ 2,469	$ 357	$ 2,469	$ 357

(1) The increase in provision for credit loss expense was based on assessment of current conditions including the COVID-19 pandemic and anticipation of delayed or delinquent payments on existing accounts receivable as a result of declining financial health and liquidity positions of certain of the Company's customers.

Additional Disclosures Under Topic 606

The following table presents additional revenue and contract disclosures (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Revenue recognized in the period from:				
Amounts included in deferred revenue at the beginning of the period	$ 796	$ 2,124	$ 620	$ 3,167
Performance obligations satisfied in previous periods (true ups, licensee reporting adjustments and settlements)*	$ 7,078	$ 2,472	$ 54,222	$ 3,637

*True ups represent the differences between the Company's quarterly estimates of per unit royalty revenue and actual production/sales-based royalties reported by licensees in the following period. Licensee reporting adjustments represent corrections or revisions to previously reported per unit royalties by licensees, generally resulting from the Company's inquiries or compliance audits. Settlements represent resolutions of litigation during the period for past royalties owed pursuant to expired or terminated IP license agreements.

Remaining revenue under contracts with performance obligations represents the aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) under the Company's engineering services contracts. The Company's remaining revenue under contracts with performance obligations was as follows (in thousands):

	As of	
	June 30, 2020	December 31, 2019
Revenue from contracts with performance obligations expected to be satisfied in:		
2020 (remaining 6 months)	$ 92,742	$ 5,337
2021	130,154	990
2022	93,047	345
2023	84,773	—
2024	72,738	—
Thereafter	70,977	—
Total	$ 544,431	$ 6,672

NOTE 4 – COMPOSITION OF CERTAIN FINANCIAL STATEMENT CAPTIONS

Other current assets consisted of the following (in thousands):

	June 30, 2020	December 31, 2019
Prepaid income taxes	$ 4,161	$ 2,364
Prepaid expenses	22,426	8,802
Inventory	3,097	100
Other	6,678	2,469
	$ 36,362	$ 13,735

Property and equipment, net, consisted of the following (in thousands):

	June 30, 2020	December 31, 2019
Equipment, furniture and other	$ 57,308	$ 32,504
Building and improvements	18,309	18,258
Land	5,300	5,300
Leasehold improvements	26,053	8,103
	106,970	64,165
Less: accumulated depreciation and amortization	(35,945)	(31,288)
	$ 71,025	$ 32,877

Accrued liabilities consisted of the following (in thousands):

	June 30, 2020	December 31, 2019
Employee compensation and benefits	$ 29,192	$ 18,404
Accrued expenses	25,748	7,930
Current portion of operating lease liabilities	18,017	5,845
Accrued severance	8,784	—
Third-party royalties	3,806	6,165
Other	19,821	3,089
	$ 105,368	$ 41,433

Other long-term liabilities consisted of the following (in thousands):

	June 30, 2020	December 31, 2019
Long-term income tax payable	$ 92,941	$ 76,767
Other	3,299	131
	$ 96,240	$ 76,898

Accumulated other comprehensive income (loss) consisted of the following (in thousands):

	June 30, 2020	December 31, 2019
Foreign currency translation adjustment, net of tax	$ 155	$ —
Unrealized gain (loss) on available-for-sale debt securities, net of tax	15	(53)
	$ 170	$ (53)

Other income and expense, net, consisted of the following (in thousands):

	Three Months Ended,		Six Months Ended,	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Interest income from significant financing components under Topic 606	$ 721	$ 1,854	$ 1,696	$ 3,720
Interest income from investments	307	682	792	1,282
Unrealized/realized gain (loss) on marketable equity securities	26	2,032	(707)	1,622
Other income/(expense), net	(476)	238	(638)	484
	$ 578	$ 4,806	$ 1,143	$ 7,108

NOTE 5 – FINANCIAL INSTRUMENTS

The Company has investments in debt securities which include corporate bonds and notes, treasury and agency notes and bills, commercial paper, certificates of deposit, and in equity securities consisting of money market funds. The Company classifies its debt securities as available-for-sale (“AFS”), which are accounted for at fair value with credit related losses recognized as a provision for credit loss expense in its Condensed Consolidated Statements of Operations and all non-credit related unrealized gains and losses recognized in accumulated other comprehensive income or loss on the Condensed Consolidated Balance Sheets. Under ASU 2016-01 (Topic 321), equity securities are measured at fair value with unrealized gains and losses recognized in other income and expense, net, on the Condensed Consolidated Statements of Operations.

The following is a summary of marketable securities at June 30, 2020 and December 31, 2019 (in thousands):

	June 30, 2020				
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Allowance for Credit Losses	Estimated Fair Values
Marketable securities					
Corporate bonds and notes	$ 25,476	$ 89	$ (1)	$ —	$ 25,564
Total debt securities	25,476	89	(1)	—	25,564
Money market funds	91,551	—	—	—	91,551
Total equity securities	91,551	—	—	—	91,551
Total marketable securities	$ 117,027	$ 89	$ (1)	$ —	$ 117,115
Reported in:					
Cash and cash equivalents					$ 91,551
Available-for-sale debt securities					25,564
Total marketable securities					$ 117,115

	December 31, 2019			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Values
Marketable securities				
Corporate bonds and notes	$ 41,730	$ 29	$ (13)	$ 41,746
Commercial paper	4,052	4	—	4,056
Total debt securities	45,782	33	(13)	45,802
Money market funds	2,601	—	—	2,601
Marketable equity securities	3,405	—	(2,281)	1,124
Total equity securities	6,006	—	(2,281)	3,725
Total marketable securities	$ 51,788	$ 33	$ (2,294)	$ 49,527
Reported in:				
Cash and cash equivalents				$ 2,601
Available-for-sale debt securities				45,802
Equity securities				1,124
Total marketable securities				$ 49,527

At June 30, 2020 and December 31, 2019, the Company had $199.6 million and $121.5 million, respectively, in cash, cash equivalents and short-term investments. These balances include $82.5 million and $72.0 million in cash held in operating accounts not included in the tables above at June 30, 2020 and December 31, 2019, respectively.

Debt Securities

The gross realized gains and losses on sales of marketable debt securities were not significant during the three and six months ended June 30, 2020 and 2019, respectively.

Unrealized gain and loss on marketable debt securities were $0.1 million and $0.1 million, net of tax, as of June 30, 2020 and December 31, 2019, respectively. The Company evaluated whether the decline in fair value has resulted from credit losses or other factors and concluded these amounts were related to temporary fluctuations in value of AFS securities and were due primarily to changes in interest rates and market conditions of the underlying securities. In addition, the contractual terms of those investments do not permit the issuer to settle the securities at a price less than the amortized cost bases of the investments. The Company does not intend to sell the debt securities and it is more-likely-than-not that it will not be required to sell the investments before recovery of their amortized cost bases. The Company did not recognize a provision for credit loss expense related to its AFS debt securities for the three and six months ended June 30, 2020, respectively. No impairment charges were recorded on the AFS debt securities for the three and six months ended June 30, 2019, respectively.

The following table summarizes the fair value and gross unrealized losses related to individual AFS debt securities at June 30, 2020 and December 31, 2019, which have been in a continuous unrealized loss position, aggregated by investment category and length of time (in thousands):

	Less Than 12 Months		12 Months or More		Total	
June 30, 2020	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Corporate bonds and notes	$ 2,015	$ —	$ 6,194	$ (1)	$ 8,209	$ (1)
Total	$ 2,015	$ —	$ 6,194	$ (1)	$ 8,209	$ (1)

	Less Than 12 Months		12 Months or More		Total	
December 31, 2019	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Corporate bonds and notes	$ 20,031	$ (10)	$ 8,753	$ (3)	$ 28,784	$ (13)
Total	$ 20,031	$ (10)	$ 8,753	$ (3)	$ 28,784	$ (13)

The estimated fair value of marketable debt securities by contractual maturity at June 30, 2020 is shown below (in thousands). Actual maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations without penalties.

	Estimated Fair Value
Due in one year or less	$ 22,533
Due in one to two years	3,031
Total	$ 25,564

Equity Securities

On September 19, 2018, the Company purchased 7.0 million common shares of Onkyo Corporation (“Onkyo”), a publicly traded Japanese company and a long-standing customer of the Company, pursuant to the Capital Alliance Agreement (“Agreement”) entered into between the two parties on September 3, 2018. Upon making the investment, the Company held a 6.3% ownership interest in Onkyo. Due to changes in business expectations, the Company determined not to continue discussions on the business alliance. In July 2019, the Company sold approximately 2.8 million shares of Onkyo stock and realized a gain of $0.9 million. Under Topic 321, the Company had recognized cumulative unrealized losses of $2.3 million on the Onkyo investment through December 31, 2019. In June 2020, the Company liquidated the remaining 4.2 million shares of Onkyo stock and realized an insignificant amount of gain in the three months ended June 30, 2020. Realized loss was $0.7 million for the six months ended June 30, 2020. There were no sales of the Onkyo investment during the three and six months ended June 30, 2019, respectively.

Non-marketable Equity Securities

Investments in non-marketable equity securities are accounted for using either the equity method or the cost method. Investments in entities over which the Company has the ability to exercise significant influence, but does not hold a controlling interest, are accounted for using the equity method. Under the equity method, the Company records its proportionate share of income or loss in other income and expense, net, in the Condensed Consolidated Statements of Operations. Investments in entities over which the Company does not have the ability to exercise significant influence are accounted for using the cost method. The Company monitors its non-marketable securities portfolio for potential impairment. When the carrying amount of an investment in a non-marketable security exceeds its fair value and the decline in fair value is determined to be other-than-temporary, the loss is recorded in other income and expense, net, in the Condensed Consolidated Statements of Operations.
Upon merging with TiVo on June 1, 2020, the Company assumed certain investments in non-marketable equity. As of June 30, 2020, other long-term assets included equity securities accounted for under the equity method with a carrying amount of $3.8 million and equity securities without a readily determinable fair value with a carrying amount of $0.1 million, respectively. No impairments or adjustments to the carrying amount of the Company's equity securities without a readily determinable fair value were recognized in the three months ended June 30, 2020. The Company had no investments in non-marketable equity prior to June 1, 2020.

Derivatives

From time to time, the Company may use derivative financial instruments to manage foreign currency exchange rate risk. The Company does not enter into derivative transactions for trading purposes. Cash flows from the derivative programs are classified as cash flows from operating activities in the Condensed Consolidated Statements of Cash Flows.

The Company’s derivative financial instruments consist of deliverable and non-deliverable foreign currency forward contracts, which are used primarily to hedge balance sheet and certain expenditure exposures. These instruments are generally short-term in nature, with typical maturities of less than one year, and are subject to fluctuations in foreign exchange rates. Fair values for derivative financial instruments are based on prices computed using third-party valuation models and are classified as Level 2 in accordance with the three-level hierarchy of fair value measurements. All significant inputs to the third-party valuation models are observable in active markets. Inputs include current market-based parameters such as forward rates, yield curves and credit default swap pricing. For additional information related to the three-level hierarchy of fair value measurements, see “Note 6 – Fair Value.”

Under the Company’s policy election, derivative contracts are not designated as hedge instruments, and are measured and reported at fair value. Changes in the fair value of these undesignated derivatives are reported in other income and expense, net,

on the Condensed Consolidated Statements of Operations. Realized or unrealized gain or losses were not significant in the three and six months ended June 30, 2020 and 2019. There were no derivative instruments outstanding as of June 30, 2020.

NOTE 6 – FAIR VALUE

The Company follows the authoritative guidance for fair value measurement and the fair value option for financial assets and financial liabilities. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability, or an exit price, in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The established fair value hierarchy requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. There are three levels of inputs that may be used to measure fair value:

*Level 1*Quoted prices in active markets for identical assets.

*Level 2*Observable market-based inputs or unobservable inputs that are corroborated by market data.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

When applying fair value principles in the valuation of assets, the Company is required to maximize the use of quoted market prices and minimize the use of unobservable inputs. The Company calculates the fair value of its Level 1 and Level 2 instruments based on the exchange traded price of similar or identical instruments, where available, or based on other observable inputs. There were no significant transfers into or out of Level 1 or Level 2 that occurred between December 31, 2019 and June 30, 2020.

The following sets forth the fair value, and classification within the hierarchy, of the Company's assets required to be measured at fair value on a recurring basis as of June 30, 2020 (in thousands):

	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Marketable securities				
Money market funds - equity securities (1)	$ 91,551	$ 91,551	$ —	$ —
Corporate bonds and notes - debt securities (2)	25,564	—	25,564	—
Total Assets	$ 117,115	$ 91,551	$ 25,564	$ —

(1) Reported as cash and cash equivalents in the Condensed Consolidated Balance Sheet.
(2) Reported as AFS debt securities in the Condensed Consolidated Balance Sheet.

The following sets forth the fair value, and classification within the hierarchy, of the Company's assets required to be measured at fair value on a recurring basis as of December 31, 2019 (in thousands):

	Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Marketable securities				
Money market funds - equity securities (1)	$ 2,601	$ 2,601	$ —	$ —
Marketable equity securities (2)	1,124	1,124	—	—
Commercial paper - debt securities (3)	4,056	—	4,056	—
Corporate bonds and notes - debt securities (3)	41,746	—	41,746	—
Total Assets	$ 49,527	$ 3,725	$ 45,802	$ —

(1) Reported as cash and cash equivalents in the Condensed Consolidated Balance Sheet.

(2) Reported as equity securities in the Condensed Consolidated Balance Sheet.
(3) Reported as AFS debt securities in the Condensed Consolidated Balance Sheet.

Financial Instruments Not Recorded at Fair Value on a Recurring Basis

The Company's long-term debt is carried at amortized cost and is measured at fair value on a quarterly basis for disclosure purposes. The carrying amounts and estimated fair values are as follows (in thousands):

	June 30, 2020		December 31, 2019	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
2020 Term B Loan Facility (1)	$ 1,011,035	$ 958,535	$ —	$ —
2021 Convertible Notes	48	48	—	—
2018 Amended Term B Loan (1)	—	—	334,679	335,642
Total long-term debt, net	$ 1,011,083	$ 958,583	$ 334,679	$ 335,642

(1) Carrying amounts of long-term debt are net of unamortized debt issuance costs of $39.0 million and $9.3 million as of June 30, 2020 and December 31, 2019, respectively. See "Note 9 – *Debt*" for additional information.

If reported at fair value in the Condensed Consolidated Balance Sheets, the Company's debt would be classified within Level 2 of the fair value hierarchy. The fair value of the debt was estimated based on the quoted market prices for the same or similar issues.

Non-recurring Fair Value Measurements

For purchase accounting related fair value measurements, see "Note 7 – Business Combination."

NOTE 7 – BUSINESS COMBINATION

Effective June 1, 2020, Xperi and TiVo completed the previously announced merger of equals transaction (the "Merger") contemplated by the Agreement and Plan of Merger and Reorganization, dated as of December 18, 2019, as amended on January 31, 2020, (the "Merger Agreement"), by and among Xperi, TiVo, XRAY-TWOLF HoldCo Corporation ("Xperi Holding"), XRAY Merger Sub Corporation ("Xperi Merger Sub") and TWOLF Merger Sub Corporation ("TiVo Merger Sub"). Immediately prior to the consummation of the Merger, Xperi Holding changed its name to "Xperi Holding Corporation" (the "Company"). Pursuant to the Merger Agreement, (i) Xperi Merger Sub was merged with and into Xperi, with Xperi surviving the merger as a subsidiary of Xperi Holding Corporation (the "Xperi Merger") and (ii) TiVo Merger Sub was merged with and into TiVo, with TiVo surviving the merger as a subsidiary of Xperi Holding Corporation (the "TiVo Merger" and together with the Xperi Merger, the "Mergers"). Immediately following the consummation of the Mergers, each of Xperi and TiVo became wholly-owned subsidiaries of the Company.

Upon completion of the Xperi Merger, each share of common stock, par value $0.001 per share, of Xperi (the "Xperi Common Stock") (excluding any shares of Xperi Common Stock that were held in treasury immediately prior to the effective time of the Xperi Merger, which were automatically canceled and retired for no consideration) was converted into the right to receive one fully paid and non-assessable share of common stock, par value $0.001 per share, of the Company ("Company Common Stock"). Upon completion of the TiVo Merger, (i) each share of common stock, par value $0.001 per share, of TiVo (the "TiVo Common Stock") (excluding any shares of TiVo Common Stock that were held in treasury immediately prior to the effective time of the TiVo Merger, which were automatically canceled and retired for no consideration) was converted into the right to receive 0.455 fully paid and non-assessable shares of common stock of the Company (the "Exchange Ratio"), in addition to cash in lieu of any fractional shares of the Company Common Stock.

As provided in the Merger Agreement, at the effective time of the Mergers, (i) all options, restricted shares, restricted stock unit awards and other equity awards relating to shares of Xperi Common Stock outstanding immediately prior to the effective time of the Mergers were generally automatically converted into options, restricted shares, restricted stock unit awards and other equity awards, respectively, relating to shares of Company Common Stock after giving effect to appropriate adjustments to reflect the Mergers and otherwise generally on the same terms and conditions as applied under the applicable plans and award agreements immediately prior to the effective time of the Mergers, and (ii) all options, restricted shares, restricted stock unit awards and other equity awards relating to shares of TiVo Common Stock that were outstanding immediately prior to the effective time of the Mergers (including Exchange Ratio) were generally automatically converted into options, restricted stock unit awards, restricted shares and other equity awards, respectively, relating to shares of Company Common Stock after giving effect to appropriate adjustments to reflect the Mergers and otherwise generally on the same terms and conditions as applied under the applicable plans and award agreements immediately prior to the effective time of the Mergers.

Following the Mergers, Xperi Common Stock and TiVo Common Stock were delisted from the Nasdaq Global Select Market ("Nasdaq") and deregistered under the Securities Exchange Act of 1934, as amended. Since June 2, 2020, the shares of the Company's common stock have been listed for trading on Nasdaq under the ticker symbol "XPER."

The Mergers created a leading consumer and entertainment technology and IP licensing company. The Company's IP business includes one of the industry's largest and most successful IP portfolios licensed to a diverse base of customers. On the product side, the Company offers a seamless end-to-end entertainment experience from creation to consumption; with greater scale, technology depth and breadth, and a platform relevant to one of the biggest challenges consumers of entertainment face today – how to quickly and easily find, watch and enjoy entertainment.

The Company currently contemplates and may pursue, subject to the receipt of approval by the Company's board and any required regulatory approvals, a separation of the Company's product business and IP licensing business through a tax-efficient transaction, resulting in two independent, publicly traded companies. The contemplated business separation is not expected to take place earlier than the first quarter of 2021.

Merger Consideration

The merger consideration of $828.3 million was calculated as follows (amounts in thousands except exchange ratio and share price):

TiVo common shares outstanding as of June 1, 2020		128,132		
TiVo exchange ratio		0.455		
Xperi Holding Corporation common stock issued in exchange		58,300		
Xperi Common Stock closing share price on June 1, 2020	$	14.00		
			$	816,201
Fair value of replaced TiVo equity awards relating to pre-acquisition vesting of the equity award holders' requisite service periods				12,133
Total merger consideration			$	828,334

Assumed TiVo Equity Awards

In connection with the Mergers, the Company assumed unvested TiVo equity incentive awards with a fair value of $34.1 million, of which $12.1 million related to pre-acquisition services and was included in the purchase price, and $22.0 million related to post-acquisition services. The Company valued the restricted stock units at the Company's closing stock price and stock options using a Black-Scholes pricing model as of the date of acquisition. The fair value relating to post-acquisition services will be amortized as stock-based compensation expense over an estimated weighted average remaining service period of 2.5 years.

Preliminary Purchase Price Allocation

Based on an evaluation of the provisions of ASC 805, "Business Combinations," Xperi was determined to be the accounting acquirer in the Mergers. The Company has applied the acquisition method of accounting that requires, among other things, that identifiable assets acquired and liabilities assumed generally be recognized on the balance sheet at fair value as of the acquisition date. In determining the fair value, the Company utilized various forms of the income, cost and market approaches depending on the asset or liability being fair valued. The estimation of fair value required significant judgment related to future net cash flows (including revenue, operating expenses, and working capital), discount rates reflecting the risk inherent in each cash flow stream, competitive trends, market comparables and other factors. Inputs were generally determined by taking into account historical data (supplemented by current and anticipated market conditions) and growth rates.

The table below presents the preliminary fair value that was allocated to TiVo's assets and liabilities based upon fair values as determined by the Company. The initial allocation of the purchase price was based on preliminary valuations and assumptions and is subject to change within the measurement period, including current indirect taxes payable, current and non-current income taxes payable and deferred taxes as additional information is received and tax returns are finalized. The Company expects to finalize the allocation of the purchase price within the measurement period. Final determination of the fair values may result in further adjustments to the values presented in the following table ($ in thousands):

	Estimated Useful Life (years)		Estimated Fair Value
Cash and cash equivalents			$ 117,424
Accounts receivable			105,778
Unbilled contracts receivable			69,058
Other current assets			21,690
Long-term unbilled contracts receivable			129
Property and equipment			41,307
Operating lease right-of-use assets			71,444
Identifiable intangible assets:			
Patents	10	457,400	
Customer contracts and related relationships	4-9	358,200	
Developed technology	5	34,800	
Content database	9	6,200	
Trademarks and tradenames	N/A	21,400	
Total identifiable intangible assets			878,000
Goodwill			461,129
Other long-term assets			43,700
Accounts payable			(13,258)
Accrued legal fees			(5,619)
Accrued liabilities			(79,071)
Current portion of deferred revenue			(29,291)
Current portion of long-term debt			(734,609)
Deferred revenue, less current portion			(24,319)
Long-term deferred tax liabilities			(27,949)
Long-term debt			(48)
Noncurrent operating lease liabilities			(59,291)
Other long-term liabilities			(7,870)
Total purchase price			$ 828,334

The following is a description of the methods used to determine the fair values of significant assets and liabilities.

Identifiable Intangible Assets

Identifiable intangible assets primarily consist of patents, developed technology, customer relationships, trademarks and tradenames, and content database. The fair value of intangibles was based on valuations using assumptions developed by management and other information compiled by management including, but not limited to, discounted future expected cash flows. The fair value of certain customer relationships was calculated by comparing the estimated value with customer relationships in place against the value without those customer relationships in place. The fair value of intangibles relies heavily on projected future net cash flows including, but not limited to, key assumptions for revenue, operating expenses and working capital. The discount rates used for intangible assets are based on current market rates and reflect the risk inherent in each cash flow stream. The estimated useful life reflects the time period in which the Company expects to receive the benefits of the related cash flows. Discounted future expected cash flows and other management estimates are based on significant unobservable inputs and, as a result, the intangible assets acquired would be presented in Level 3 of the fair value hierarchy.

Long-term Debt

On the Merger date, TiVo had outstanding debt under the 2019 Term Loan Facility Agreement (“TiVo 2019 Term Loan”), pursuant to which TiVo was required to pay a 3.0% prepayment premium if the loan was prepaid on or prior to November 22, 2020. Under the 2019 Term Loan Facility Agreement, the Mergers triggered certain change of control conditions that constitute an event of default, thus requiring the debt to be paid immediately following the consummation of the Mergers. In connection with the consummation of the Mergers, the Company, on June 1, 2020, paid the full amount of the outstanding loan balance, including the 3.0% prepayment penalty. See “Note 9 – Debt” for additional information.

Fair value of the TiVo 2019 Term Loan was measured based on the par value of principal outstanding plus prepayment premium, which is equal to the amount that was paid by Xperi immediately following the consummation of the Mergers. The fair value of the TiVo 2019 Term Loan would be classified in Level 2 of the fair value hierarchy.

Goodwill

The excess of the consideration transferred over the fair value of assets acquired and liabilities assumed was recognized as goodwill. The goodwill is generated from operational synergies and cost savings the Company expects to achieve from the combined operations, as well as the expected benefits from future technologies that do not meet the definition of an identifiable intangible asset and TiVo's knowledgeable and experienced workforce. See Note 8 for the allocation of goodwill to the reportable segments. Of the total goodwill acquired, $16.4 million is expected to be deductible for tax purposes; the remainder of the goodwill is not expected to be deductible for tax purposes.

TiVo Results of Operations

TiVo's results of operations and cash flows have been included in the Company's condensed consolidated financial statements for periods subsequent to June 1, 2020, and TiVo's assets and liabilities were recorded at their estimated fair values in the Company's Condensed Consolidated Balance Sheets as of June 1, 2020. For the three and six months ended June 30, 2020, TiVo contributed $52.8 million of revenue and $9.5 million of net loss, respectively, to the financial results of the Company.

Transaction and Severance Costs

In connection with the Mergers, the Company incurred significant one-time expenses in the first two quarters of 2020 such as transaction costs (e.g. bankers fees, legal fees, consultant fees, etc.), severance costs as a result of synergistic headcount reductions as a result of the Mergers and stock-based compensation expense resulting from the contractually-required acceleration of equity instruments for departing executives. Total transaction costs amounted to $24.4 million and $27.5 million for the three and six months ended June 30, 2020, respectively. Post-merger severance and stock-based compensation expense resulting from the acceleration of equity instruments was $6.7 million and $1.5 million, respectively, for the three months ended June 30, 2020. The Company may incur additional expenses for severance and retention, and the impairment of right-of-use assets due to facilities consolidation in future quarters, although no further actions have been determined as of June 30, 2020.

Supplemental Pro Forma Information

The following unaudited pro forma financial information assumes the companies were combined as of January 1, 2019. The unaudited pro forma financial information as presented below is for informational purposes only and is based on estimates and assumptions that have been made solely for purposes of developing such pro forma information. This is not necessarily indicative of the results of operations that would have been achieved if the Mergers had taken place on January 1, 2019, nor is it necessarily indicative of future results. Consequently, actual results could differ materially from the unaudited pro forma financial information presented below. The following table presents the pro forma operating results as if TiVo had been included in the Company's Condensed Consolidated Statements of Operations as of January 1, 2019 (unaudited, in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Revenue	$ 230,983	$ 249,485	$ 505,878	$ 462,278
Net income (loss) attributable to Xperi Holding Corporation	$ 32,445	$ (18,610)	$ (123,009)	$ (137,533)

The unaudited supplemental pro forma information above includes the estimated impact of purchase accounting and other material, nonrecurring adjustments directly attributable to the Mergers. These pro forma adjustments primarily include the following (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Estimated increase (decrease) to earnings due to revenue adjustments resulting from purchase accounting	$ (2,192)	$ (1,802)	$ (4,823)	$ (3,811)
Estimated increase (decrease) to earnings to adjust for transaction costs incurred in connection with the Mergers	$ 25,677	$ —	$ 30,202	$ (20,284)
Estimated increase (decrease) to earnings to adjust for stock-based compensation expense relating to certain TiVo equity awards	$ 2,901	$ 385	$ 3,436	$ (1,784)
Estimated increase (decrease) to earnings to adjust for severance costs incurred in connection with the Mergers	$ 6,663	$ (12)	$ 6,663	$ (7,802)
Estimated increase (decrease) to earnings to reflect payoff of historical debt and issuance of new debt financing in connection with the Mergers	$ 12,023	$ (2,643)	$ 20,752	$ (16,708)
Estimated increase (decrease) to earnings due to pro forma adjustments for income taxes (1)(2)	$ 22,931	$ 1,210	$ 16,257	$ (19,277)

(1) For the three and six months ended June 30, 2020, the pro forma tax adjustments primarily reflect the recognition by TiVo of a refund request of South Korean withholding taxes prior to the Mergers in the quarter ended June 30, 2020.

(2) For the three and six months ended June 30, 2019, the pro forma tax adjustments relate primarily to the alignment of TiVo's methodology for interim period accounting for income taxes to Xperi's methodology, as well as the assumption that the combined company placed a valuation allowance on its federal and state deferred tax assets prior to 2019.

The unaudited supplemental pro forma information above does not include any cost saving synergies from operating efficiencies.

NOTE 8 – GOODWILL AND IDENTIFIED INTANGIBLE ASSETS

In connection with the TiVo Merger, the Company recorded $461.1 million of goodwill, representing the preliminary fair value as of the effective date of the Mergers. Goodwill resulting from the Mergers was assigned to reporting units based on the acquisition method of accounting and is considered provisional. The following table reflects the carrying amounts of goodwill by reportable segment (in thousands):

	Product	IP Licensing	Total
December 31, 2019	$ 378,084	$ 7,700	$ 385,784
Goodwill acquired through the Mergers (1)	146,061	315,068	461,129
June 30, 2020	$ 524,145	$ 322,768	$ 846,913

(1) Final determination of the goodwill value assignment may result in adjustments to the preliminary value recorded. See "Note 7 – Business Combination" for additional details.

Goodwill at each reporting unit is evaluated for potential impairment annually, as of the beginning of the fourth quarter, and whenever events or changes in circumstances indicate the carrying amount of goodwill may not be recoverable. Immediately before and after the goodwill assignments, the Company completed an assessment of any potential goodwill impairment and determined that no impairment existed.

Identified intangible assets consisted of the following (in thousands):

	Average Life (Years)	June 30, 2020			December 31, 2019		
		Gross Assets	Accumulated Amortization	Net	Gross Assets	Accumulated Amortization	Net
Finite-lived intangible assets							
Acquired patents / core technology (1)	3-15	$ 609,084	$ (141,993)	$ 467,091	$ 151,184	$ (135,952)	$ 15,232
Existing technology / content database (2) (3)	5-10	247,905	(148,928)	98,977	206,878	(130,890)	75,988
Customer contracts and related relationships (4)	3-9	649,986	(202,729)	447,257	291,769	(174,741)	117,028
Trademarks/trade name	4-10	40,083	(18,542)	21,541	40,083	(16,056)	24,027
Non-competition agreements	1	2,231	(2,231)	—	2,231	(2,231)	—
Total finite-lived intangible assets		1,549,289	(514,423)	1,034,866	692,145	(459,870)	232,275
Indefinite-lived intangible assets							
TiVo Tradename/trademarks (5)	N/A	21,400	—	21,400	—	—	—
Total intangible assets		$ 1,570,689	$ (514,423)	$ 1,056,266	$ 692,145	$ (459,870)	$ 232,275

(1) In June 2020, $457.4 million of patents was acquired through the Mergers. See “Note 7 – Business Combination.”
(2) In June 2020, $34.8 million of existing (developed) technology was acquired through the Mergers. See “Note 7 – Business Combination.”
(3) In June 2020, $6.2 million of content database was acquired through the Mergers. See “Note 7 – Business Combination.”
(4) In June 2020, $358.2 million of customer contracts and related relationships was acquired through the Mergers. See “Note 7 – Business Combination.”
(5) In June 2020, $21.4 million of TiVo Tradename/trademarks was acquired through the Mergers. See “Note 7 – Business Combination.”

As of June 30, 2020, the estimated future amortization expense of total finite-lived intangible assets was as follows (in thousands):

2020 (remaining 6 months)	$ 101,141
2021	195,771
2022	147,333
2023	136,453
2024	97,648
Thereafter	356,520
	$ 1,034,866

NOTE 9 - DEBT

The outstanding amounts of debt were as follows (in thousands):

	June 30, 2020	December 31, 2019
2020 Term B Loan Facility	$ 1,050,000	$ —
2021 Convertible Notes	48	—
2018 Amended Term B Loan	—	344,000
Unamortized debt issuance costs	(38,965)	(9,321)
	1,011,083	334,679
Less: current portion, net of debt issuance costs	(43,612)	—
Total long-term debt, net of current portion	$ 967,471	$ 334,679

2020 Term B Loan Facility

On June 1, 2020, in connection with the consummation of the Mergers with TiVo, the Company entered into a Credit Agreement (the “2020 Credit Agreement”) by and among the Company, the lenders party thereto and Bank of America, N.A., as administrative agent and collateral agent. The 2020 Credit Agreement provides for a five-year senior secured term loan B facility in an aggregate principal amount of $1,050 million (the “2020 Term B Loan Facility”). The interest rate applicable to loans outstanding under the 2020 Term B Loan Facility is equal to, at the Company’s option, either (i) a base rate plus a margin of 3.00% per annum or (ii) LIBOR plus a margin of 4.00% per annum. Commencing on September 30, 2020, the 2020 Term B Loan Facility will amortize in equal quarterly installments in aggregate quarterly amounts equal to (i) with respect to repayments occurring on or prior to June 1, 2023, 1.25% of the original principal amount of the 2020 Term B Loan Facility and (ii) with respect to repayments occurring after June 1, 2023 and prior to June 1, 2025, 1.875% of the original principal amount of the 2020 Term B Loan Facility, with the balance payable on the maturity date of the 2020 Term B Loan Facility (in each case subject to adjustment for prepayments). The 2020 Term B Loan Facility will mature on June 1, 2025. Upon the closing of the 2020 Credit Agreement, the Company borrowed $1,050 million under the 2020 Term B Loan Facility. Net proceeds were used on June 1, 2020, together with cash and cash equivalents, to refinance the existing indebtedness of the combined Company (the “Debt Financing”), including paydown of the TiVo 2019 Term Loan of $734.6 million. See “Note 7 – Business Combination” for additional information relating to the Mergers. Additionally, debt issuance costs of approximately $39.7 million were incurred and capitalized in connection with the 2020 Term B Loan Facility in June 2020.

The obligations under the 2020 Credit Agreement are guaranteed by Xperi, TiVo and certain other of the Company’s wholly-owned material domestic subsidiaries (collectively, the “Guarantors”) pursuant to the Guaranty, dated as of June 1, 2020 (the “Guaranty”), among Xperi, TiVo, the other Guarantors party thereto and Bank of America, N.A., as administrative agent. The obligations under the 2020 Credit Agreement are secured by a lien on substantially all of the assets of the Company and the Guarantors pursuant to the Security Agreement, dated as of June 1, 2020 (the “Security Agreement”), among the Company, Xperi, TiVo, the other pledgors party thereto and Bank of America, N.A., as collateral agent.

The 2020 Credit Agreement contains customary events of default, upon the occurrence of which, after any applicable grace period, the lenders will have the ability to accelerate all outstanding loans thereunder. The 2020 Credit Agreement also contains customary representations and warranties and affirmative and negative covenants that, among other things, restrict the ability of the Company and its subsidiaries to create or incur certain liens, incur or guarantee additional indebtedness, merge or consolidate with other companies, transfer or sell assets and make restricted payments. These covenants are subject to a number of limitations and exceptions set forth in the Credit Agreement. The Company was in compliance with all requirements as of June 30, 2020.

2018 Amended Term B Loan

On December 1, 2016, in connection with the consummation of the acquisition of DTS, the Company entered into a Credit Agreement (the “Credit Agreement”) by and among the Company, Royal Bank of Canada, as administrative agent and collateral agent, and the lenders party thereto. The Credit Agreement provided for a $600.0 million seven-year term B loan facility (the “Term B Loan Facility”) which matures on November 30, 2023. Upon the closing of the Credit Agreement, the Company borrowed $600.0 million under the Term B Loan facility. Net proceeds were used on December 1, 2016, together with cash and cash equivalents, to finance the acquisition of DTS.

On January 23, 2018, the Company and the loan parties entered into an amendment to the Credit Agreement (the “Amendment”). In connection with the Amendment, the Company made a voluntary prepayment of $100.0 million of the term loan outstanding under the Credit Agreement using cash on hand. The Amendment provided for, among other things, (i) a replacement of the outstanding initial term loan with the new tranche term B-1 loan (the “2018 Amended Term B Loan”) in a principal amount of $494.0 million, (ii) a reduction of the interest rate margin applicable to such loan to (x) in the case of Eurodollar loans, 2.50% per annum and (y) in the case of base rate loans, 1.50% per annum, (iii) a prepayment premium of 1.00% in connection with any repricing transaction with respect to the 2018 Amended Term B Loan within six months of the closing date of the Amendment, and (iv) certain amendments to provide the Company with additional flexibility under the covenant governing restricted payments. Using cash on hand, the Company made three voluntary prepayments totaling $150.0 million during 2019. On June 1, 2020, the entire remaining balance of $344.0 million was paid off by using the proceeds from the 2020 Term B Loan Facility as part of the TiVo Merger transaction. As a result of the refinancing transaction, the Company recorded a loss on early extinguishment of debt of $8.3 million, which consisted of unamortized debt issuance costs, in its Condensed Consolidated Statements of Operations for the three and six months ended June 30, 2020, respectively.

2019 Term Loan Facility

In connection with the Mergers, the Company paid off all outstanding balance under the TiVo's 2019 Term Loan. The 2019 Term Loan Facility Agreement was entered into on November 22, 2019 between TiVo, as borrower, and the lenders party thereto and HPS Investment Partners, LLC as administrative agent and collateral agent. Under the 2019 Term Loan, TiVo borrowed $715.0 million, which matures on November 22, 2024.

Under the 2019 Term Loan Facility Agreement, TiVo was required to pay a 3.0% prepayment premium if the loan was prepaid on or prior to November 22, 2020. Further under the same Loan Facility Agreement, the Mergers triggered certain change of control conditions that constitute an event of default, thus requiring the debt to be repaid immediately following the consummation of the Mergers. Using the proceeds from the aforementioned 2020 Term B Loan Facility, the Company, on June 1, 2020, made a full repayment of the 2019 Term Loan along with the prepayment penalty for a total payoff amount of $734.6 million.

2021 Convertible Notes

Upon consummation of the TiVo Merger on June 1, 2020, the Company assumed $48.0 thousand of Convertible Senior Notes that were issued by TiVo Solutions Inc. ("TiVo Solutions") in September 2014 and mature October 1, 2021 (the "2021 Convertible Notes"). The 2021 Convertible Notes bear interest at an annual rate of 2.0%, payable semi-annually in arrears on April 1 and October 1 of each year.

Interest Expense and Expected Principal Payments

At June 30, 2020, $1,050.0 million in total debt was outstanding with an interest rate, including the amortization of debt issuance costs, of 4.8%. Interest is payable monthly. Interest expense was $7.0 million and $11.2 million for the three and six months ended June 30, 2020, respectively. Interest expense was $6.2 million and $12.9 million for the three and six months ended June 30, 2019, respectively. Amortized debt issuance costs, which were included in interest expense, amounted to $1.2 million and $1.8 million for the three and six months ended June 30, 2020, respectively, and $0.6 million and $1.3 million for the three and six months ended June 30, 2019, respectively.

As of June 30, 2020, future minimum principal payments for long-term debt are summarized as follows (in thousands):

2020 (remaining 6 months)	$	26,250
2021		52,548
2022		52,500
2023		72,188
2024		78,750
Thereafter		767,812
Total	$	1,050,048

Additional cash payments, as outlined in the 2020 Credit Agreement, must be made on an annual basis beginning March 31, 2022 based on certain leverage ratios and excess cash flow generated for the immediately preceding fiscal year.

NOTE 10 – NET LOSS PER SHARE

The following table sets forth the computation of basic and diluted shares (in thousands):

	Three Months Ended		**Six Months Ended**	
	June 30, 2020	**June 30, 2019**	**June 30, 2020**	**June 30, 2019**
Denominator:				
Weighted average common shares outstanding	69,160	49,259	59,462	48,918
Less: shares of restricted stock subject to repurchase	—	—	—	—
Total common shares-basic	69,160	49,259	59,462	48,918
Effect of dilutive securities:				
Options	—	—	—	—
Restricted stock awards and units	—	—	—	—
Total common shares-diluted	69,160	49,259	59,462	48,918

Basic net income (loss) per share is computed using the weighted average number of common shares outstanding during the period, excluding any unvested restricted stock awards that are subject to repurchase. Diluted net income (loss) per share is computed using the treasury stock method to calculate the weighted average number of common shares and, if dilutive, potential common shares outstanding during the period. Potential dilutive common shares include unvested restricted stock awards and units and incremental common shares issuable upon the exercise of stock options, less shares repurchased from assumed proceeds. The assumed proceeds calculation includes actual proceeds to be received from the employee upon exercise and the average unrecognized stock compensation cost during the period.

For the three and six months ended June 30, 2020, there was no difference in the weighted average number of common shares used for the calculation of basic and diluted loss per share as the effect of all potentially dilutive shares outstanding was anti-dilutive. A total of 4.7 million and 3.8 million shares, subject to stock options and restricted stock awards and units, were excluded from the computation of diluted net loss per share for the three and six months ended June 30, 2020, respectively, because including them would have been anti-dilutive.

For the three and six months ended June 30, 2019, there was no difference in the weighted average number of common shares used for the calculation of basic and diluted loss per share as the effect of all potentially dilutive shares outstanding was anti-dilutive. A total of 1.7 million and 1.7 million shares, subject to stock options and restricted stock awards and units, were excluded from the computation of diluted net loss per share for the three and six months ended June 30, 2019, respectively, because including them would have been anti-dilutive.

NOTE 11 – STOCKHOLDERS' EQUITY

As more fully described in Note 7, Xperi and TiVo completed the Mergers on June 1, 2020 to form Xperi Holding Corporation. Upon completion of the Mergers, each share of common stock of Xperi was converted into the right to receive one fully paid and non-assessable share of Company Common Stock. Further upon completion of the Mergers, each share of TiVo Common Stock was converted into the right to receive 0.455 fully paid and non-assessable shares of the Company Common Stock (the "Exchange Ratio"), in addition to cash in lieu of any fractional shares of the Company Common Stock. Following the Mergers, Xperi Common Stock and TiVo Common Stock were delisted from Nasdaq. Since June 2, 2020, the shares of Company Common Stock have been listed for trading on Nasdaq under ticker symbol "XPER."

As provided in the Merger Agreement, at the effective time of the Mergers, (i) all options and restricted stock unit awards relating to shares of Xperi Common Stock outstanding immediately prior to the effective time of the Mergers were generally automatically converted into options and restricted stock unit awards respectively, relating to shares of the Company Common Stock on a one-for-one basis and otherwise generally on the same terms and conditions (including vesting exercisability and/or settlement requirements) as applied to such options and awards under the applicable plans and award agreements immediately prior to the effective time of the Mergers, and (ii) all options and restricted stock unit awards relating to shares of TiVo Common Stock that were outstanding immediately prior to the effective time of the Mergers were generally automatically converted into options and restricted stock unit awards, respectively, relating to shares of the Company Common Stock after giving effect to appropriate adjustments to reflect the Mergers (including the Exchange Ratio) and otherwise generally on the same terms and conditions (including vesting exercisability and/or settlement requirements) as applied to such options and awards under the applicable plans and award agreements immediately prior to the effective time of the Mergers.

Equity Incentive Plans

Prior to the Merger Date, the Company had implemented and granted equity awards under the Xperi Corporation Seventh Amended and Restated 2003 Equity Incentive Plan. As of the effective date of the Mergers, no future grants will be made under the plan.

The 2020 EIP

In connection with the Mergers and immediately prior to June 1, 2020, the Company adopted the Xperi Holding Corporation 2020 Equity Incentive Plan (the "2020 EIP").

Under the 2020 EIP, the Company may grant equity-based awards to employees, non-employee directors, and consultants for services rendered to the Company (or any parent or subsidiary) in the form of stock options, stock awards, restricted stock awards, restricted stock units, stock appreciation rights, dividend equivalents and performance awards (or any combination thereof). A total of 8,000,000 shares have been reserved for issuance under the 2020 EIP provided that each share issued pursuant to "full value" awards (i.e., stock awards, restricted stock awards, restricted stock units, performance awards and dividend equivalents) are counted against shares available for issuance under the 2020 EIP on a 1.5 to 1 ratio.

The 2020 EIP provides for option grants designed as either incentive stock options or nonstatutory options. Options generally are granted with an exercise price not less than the value of the common stock on the grant date and have a term of ten years from the date of grant and vest over a four-year period. The vesting criteria for restricted stock awards and restricted stock units is generally the passage of time or meeting certain performance-based objectives, and continued employment through the vesting period generally over four years for time-based awards. As of June 30, 2020, there were 8.0 million shares reserved for future grant under the 2020 EIP.

Assumed Plans

On June 1, 2020, the Company assumed all then-outstanding stock options, awards, and shares available and reserved for issuance under all legacy Equity Incentive Plans of TiVo (collectively, the “Assumed Plans”). Stock options assumed from the Assumed Plans generally have vesting periods of four years and a contractual term of seven years. Awards of restricted stock and restricted stock units assumed from the Assumed Plans are generally subject to a four year vesting period. The number of shares subject to stock options and restricted stock unit awards outstanding under these plans are included in the tables below. Shares reserved under the Assumed Plans will be available for future grants. As of June 1, 2020, there were 6.2 million shares reserved for future grants under the Assumed Plans.

A summary of the stock option activity is presented below (in thousands, except per share amounts):

	Options Outstanding		
	Number of Shares Subject to Options		Weighted Average Exercise Price Per Share
Balance at December 31, 2019	605	$	26.68
Options granted	—		—
Options assumed	175	$	50.93
Options exercised	—		—
Options canceled / forfeited / expired	(41)	$	37.70
Balance at June 30, 2020	739	$	31.75

Restricted Stock Awards and Units

Information with respect to outstanding restricted stock awards and units as of June 30, 2020 is as follows (in thousands, except per share amounts):

	Restricted Stock and Restricted Stock Units				
	Number of Shares Subject to Time-based Vesting	Number of Shares Subject to Performance-based Vesting	Total Number of Shares		Weighted Average Grant Date Fair Value Per Share
Balance at December 31, 2019	2,371	554	2,925	$	25.99
Awards and units granted	1,015	—	1,015	$	10.78
Awards and units assumed	2,185	253	2,438	$	13.99
Awards converted	107	(107)	—	$	29.79
Awards and units vested / earned	(997)	(386)	(1,383)	$	23.43
Awards and units canceled / forfeited	(52)	(243)	(295)	$	28.04
Balance at June 30, 2020	4,629	71	4,700	$	17.11

Performance Awards and Units

Performance awards and units may be granted to employees or consultants based upon, among other things, the contributions, responsibilities and other compensation of the particular employee or consultant. The value and the vesting of such performance awards and units are generally linked to one or more performance goals or other specific performance goals determined by the Company, in each case on a specified date or dates or over any period or periods determined by the Company, and may range from zero to 200 percent of the grant.

Employee Stock Purchase Plans

Prior to the Mergers, the Company had implemented the Xperi Corporation 2003 Employee Stock Purchase Plan and the International Employee Stock Purchase Plan, both of which were terminated immediately prior to the effective time of the Mergers.

In connection with the Mergers and immediately prior to June 1, 2020, the Company adopted the Xperi Holding Corporation 2020 Employee Stock Purchase Plan (the "2020 ESPP"). The 2020 ESPP is implemented through consecutive overlapping 24-month offering periods, each of which is comprised of four six-month purchase periods. The first offering period will commence on September 1, 2020 and will end on August 31, 2022. Each subsequent offering period under the 2020 ESPP will be twenty-four (24) months long and will commence on each September 1 and March 1 during the term of the plan. Participants may contribute up to 100% of their base earnings and commissions through payroll deductions, and the accumulated deductions will be applied to the purchase of shares on each semi-annual purchase date. The purchase price per share will equal 85% of the fair market value per share on the start date of the offering period or, if lower, 85% of the fair market value per share on the semi-annual purchase date.

An eligible employee's right to buy the Company's common stock under the 2020 ESPP may not accrue at a rate in excess of $25,000 of the fair market value of such shares per calendar year for each calendar year of an offering period. If the fair market value per share of the Company's common stock on any purchase date during an offering period is less than the fair market value per share on the start date of the 24-month offering period, then that offering period will automatically terminate and a new 24-month offering period will begin on the next business day. All participants in the terminated offering will be transferred to the new offering period.

As of June 30, 2020, there were 2.0 million shares reserved for grant under the Company's 2020 ESPP.

Stock Repurchase Programs

In August 2007, Xperi's Board of Directors (the "Board") authorized a plan to repurchase Xperi's outstanding shares of common stock. This authorization does not apply to Xperi Holding Corporation and is no longer in effect. On June 12, 2020, the Board of the Company authorized a new stock repurchase program providing for the repurchase of up to $150.0 million of the Company's Common Stock dependent on market conditions, share prices and other factors. During the month of June 2020, the Company repurchased a total of approximately 1,078,000 shares of common stock, at an average price of $13.92 per share for a total cost of $15.0 million. The shares repurchased are recorded as treasury stock and are accounted for under the cost method. No expiration date has been specified for this plan. As of June 30, 2020, the total remaining amount available for repurchase was $135.0 million. The Company plans to continue to execute authorized repurchases from time to time under the plan.

In connection with the Mergers, all shares repurchased by the Company as of June 1, 2020 and recorded as treasury stock were canceled and retired. The Company accounts for stock repurchases using the cost method and records retirement of treasury stock as a reduction of the cumulative treasury stock paid-in capital balance. Once the cumulative balance is reduced to zero, any remaining difference resulting from the retirement of treasury stock is recorded as a reduction of retained earnings.

The Company issues restricted stock units as part of the equity incentive plans described above. For the majority of restricted awards, shares are withheld to satisfy required withholding taxes at the vesting date. Shares withheld to satisfy required withholding taxes in connection with the vesting of restricted awards are treated as common stock repurchases in the condensed consolidated financial statements because they reduce the number of shares that would have been issued on vesting. However, these withheld shares are not included in common stock repurchases under the Company's authorized share repurchase plan. During the three months ended June 30, 2020 and 2019, the Company withheld 0.2 million and 0.1 million shares of common stock to satisfy $2.8 million and $1.1 million of required withholding taxes, respectively. During the six months ended June 30, 2020 and 2019, the Company withheld 0.4 million and 0.2 million shares of common stock to satisfy $5.9 million and $4.3 million of required withholding taxes, respectively.

NOTE 12 – STOCK-BASED COMPENSATION EXPENSE

The effect of recording stock-based compensation expense for the three and six months ended June 30, 2020 and 2019 is as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Cost of licensing, services and software revenue	$ 73	$ —	$ 73	$ —
Research, development and other related costs	2,838	3,146	5,874	6,749
Selling, general and administrative	5,558	4,075	10,509	8,095
Total stock-based compensation expense	8,469	7,221	16,456	14,844
Tax effect on stock-based compensation expense	(353)	(1,163)	(1,495)	(2,385)
Net effect on net loss	$ 8,116	$ 6,058	$ 14,961	$ 12,459

In connection with the Mergers, the Company assumed unvested TiVo equity awards with a fair value of $34.1 million, of which $22.0 million related to post-acquisition services. For the three and six months ended June 30, 2020, the Company recognized $2.2 million and $2.2 million, respectively, associated with the unvested TiVo equity awards assumed. See “Note 7 – Business Combination” for additional detail.

Stock-based compensation expense categorized by various equity components for the three and six months ended June 30, 2020 and 2019 is summarized in the table below (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Restricted stock awards and units	$ 8,147	$ 6,717	$ 15,440	$ 13,651
Employee stock purchase plan	296	440	986	1,061
Employee stock options	26	64	30	132
Total stock-based compensation expense	$ 8,469	$ 7,221	$ 16,456	$ 14,844

There were no options granted in the three and six months ended June 30, 2020 and 2019.

Previous ESPP grants occurred in February 2020 and August 2019. Pursuant to the Merger Agreement, on May 22, 2020, the Company granted its final ESPP purchases to the eligible employees under the legacy ESPP program before terminating the plan prior to the consummation of the Mergers.

The following assumptions were used to value the ESPP shares for these grants:

	February 2020	February 2019
Expected life (years)	2.0	2.0
Risk-free interest rate	1.4%	2.5%
Dividend yield	4.0%	5.4%
Expected volatility	45.8%	53.4%

NOTE 13 – INCOME TAXES

For the three months ended June 30, 2020, the Company recorded an income tax benefit of $9.3 million on a pretax loss of $32.4 million and for the six months ended June 30, 2020, the Company recorded an income tax benefit of $7.2 million on a pretax loss of $11.6 million, which resulted in an effective tax rate of 62.7% for the six months ended June 30, 2020. The tax benefit of $7.2 million is comprised of a $10.5 million tax benefit related to the five month pre-merger period and a tax expense of $3.3 million related to the one month post-merger period. The five month pre-merger income tax benefit of $10.5 million was primarily related to a net decrease in valuation allowance as a result of the Mergers, deduction from foreign-derived intangible income, releases of unrecognized tax benefits due to the lapse of applicable statutes of limitation offset by tax expense from operating income, shortfalls from stock-based compensation, certain non-deductible expenses, and unrealized foreign exchange losses from the prior period South Korea refund claim. The one month post-merger income tax expense of $3.3 million was primarily related to income tax expense from foreign operations, foreign withholding taxes and U.S. federal minimum tax.

For the three months ended June 30, 2019, the Company recorded an income tax benefit of $3.5 million on a pretax loss of $9.7 million and for the six months ended June 30, 2019, the Company recorded an income tax benefit of $12.5 million on a pretax loss of $44.1 million, which resulted in an effective tax rate of 28.3%. The income tax benefit for the three and six months ended June 30, 2019 was primarily related to tax benefit from operating losses and the realization of certain tax credits, offset by foreign withholding taxes, certain non-deductible expenses, and shortfalls from stock-based compensation.

The Company's provision for income taxes is based on its worldwide estimated annualized effective tax rate, except for jurisdictions for which a loss is expected for the year and no benefit can be realized for those losses, and the tax effect of discrete items occurring during the period. The Company has applied separate effective tax rates to its pre- and post-merger activities; the Company’s post-merger effective tax rate is based on its worldwide estimated tax rate for the seven-month period ended December 31, 2020. The tax for jurisdictions for which a loss is expected and no benefit can be realized for the year is computed using a separate effective tax rate. The decrease in income tax benefit for the six months ended June 30, 2020 as compared to the prior year is largely attributable to a decrease in operating losses, increase in valuation allowance in the post-merger period, foreign withholding taxes, U.S. federal minimum taxes, and unrealized foreign exchange loss from the South Korea refund claim partially offset by tax benefits from the release of unrecognized tax benefits due to the lapse of applicable statute of limitation and a decrease in valuation allowance as a result of the Mergers.

During the fourth quarter of 2019, the Company filed a refund claim for foreign taxes previously withheld from licensees in South Korea based on recent court rulings in South Korea and other business factors. These previously withheld foreign taxes were claimed as a foreign tax credit in the U.S. As a result of the Company’s refund claim, the Company recorded a non-current income tax receivable of $65.2 million in income tax receivable, an unrecognized tax benefit of $48.2 million in other long-term liabilities, and a reduction in deferred tax assets of $17.0 million. The Company anticipates filing a refund claim for the 2020 year-to-date South Korean withholding taxes. During the first six months of 2020, an additional non-current income tax receivable of $8.4 million, an unrecognized tax benefit of $6.2 million in other long-term liabilities, and a reduction in deferred tax assets of $2.2 million were recorded. As part of the Company’s accounting for the acquisition of TiVo, the Company recorded a non-current income tax receivable of $28.8 million and a reduction in deferred tax assets of $12.5 million with a corresponding offset to valuation allowance, with the residual recorded to goodwill. At June 30, 2020, the Company had recorded a cumulative unrealized foreign exchange loss of approximately $4.0 million as a reduction in non-current income tax receivable.

The impact on the Company’s pre-merger deferred tax assets and liabilities caused by the Mergers is recorded in the Company’s financial statements outside of acquisition accounting. Such impact is not a part of the fair value of the assets acquired and liabilities assumed. The Company released its valuation allowance which was previously applied to certain deferred tax assets. As a result, the Company recorded an income tax benefit of $19.4 million for the three months ended June 30, 2020. Due to the composition of TiVo’s Federal deferred tax assets net of valuation allowance and deferred tax liabilities, the combined Company’s Federal deferred tax assets net of deferred liabilities are fully offset by a valuation allowance. The Company has adopted the policy of using a tax-law ordering approach when determining the extent to which the Company’s, or the acquired company’s deferred tax liabilities are able to be used as sources of income used to recognize the Company’s, or the acquired company’s deferred tax assets.

As of June 30, 2020, gross unrecognized tax benefits were $184.0 million, of which $99.6 million would affect the effective tax rate if recognized. As of June 30, 2019, unrecognized tax benefits were $33.9 million (which was included in long-term deferred tax and other long-term liabilities on the Condensed Consolidated Balance Sheets), of which $21.3 million would affect the effective tax rate if recognized. The Company is unable to reasonably estimate the timing of the long-term payments or the amount by which the liability will increase or decrease.

It is the Company's policy to classify accrued interest and penalties related to unrecognized tax benefits in the provision for income taxes. For the six months ended June 30, 2020 and 2019, the Company recognized an insignificant amount of interest and penalties related to unrecognized tax benefits. Accrued interest and penalties were $1.9 million and $1.2 million as of June 30, 2020 and December 31, 2019, respectively.

At June 30, 2020, the Company’s 2015 through 2018 tax years were generally open and subject to potential examination in various jurisdictions. Earlier tax years for the Company and its subsidiaries are also open in certain jurisdictions which are currently subject to examination. In addition, in the U.S., any net operating losses or credits that were generated in prior years but not yet fully utilized in a year that is closed under the statute of limitations may also be subject to examination. The Company has submitted a withholding tax refund claim with the South Korean authorities and the final outcome is not anticipated to be settled within the next twelve months.

NOTE 14 – LEASES

The Company leases office and research facilities, data centers and office equipment under operating leases which expire through 2029. The Company's leases have remaining lease terms of one year to nine years, some of which may include options to extend the leases for five years or longer, and some of which may include options to terminate the leases within the next 6 years or less. Leases with an initial term of 12 months or less are not recorded on the balance sheets; expense for these leases is recognized on a straight-line basis over the lease term. Variable lease payments are expensed as incurred and are not included within the lease liability and right-of-use assets calculation. As a practical expedient, the Company elected, for all office and facility leases, not to separate nonlease components (e.g., common-area maintenance costs) from lease components (e.g., fixed payments including rent) and instead to account for each separate lease component and its associated non-lease components as a single lease component. As most of the leases do not provide an implicit rate, the Company generally, for purposes of discounting lease payments, uses its incremental borrowing rate based on the estimated rate of interest for collateralized borrowing over a similar term of the lease payments at commencement date.

The Company subleases certain real estate to third parties. The sublease portfolio consists of operating leases for previously exited office space. Certain subleases include variable payments for operating costs. The subleases are generally co-terminus with the head lease, or shorter. Subleases do not include any residual value guarantees or restrictions or covenants imposed by the leases. Income from subleases is recognized as a reduction to selling, general and administrative expenses.

The components of operating lease costs were as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	**June 30, 2019**	**June 30, 2020**	**June 30, 2019**
Fixed lease cost (1)	$ 3,323	$ 1,787	$ 5,156	$ 3,424
Variable lease cost	594	267	941	581
Less: sublease income	(843)	—	(843)	—
Total operating lease cost	$ 3,074	$ 2,054	$ 5,254	$ 4,005

(1) Includes short-term leases, which were immaterial.

Other information related to leases was as follows (in thousands, except lease term and discount rate):

	Three Months Ended,		Six Months Ended	
	June 30, 2020	**June 30, 2019**	**June 30, 2020**	**June 30, 2019**
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from operating leases	$ 3,088	$ 1,463	$ 4,726	$ 3,017
ROU assets obtained in exchange for new lease liabilities:				
Operating leases	$ 3,673	$ 3,730	$ 3,673	$ 4,775

	June 30, 2020	**December 31, 2019**
Weighted-average remaining lease term (years):		
Operating leases	5.5	4.6
Weighted-average discount rate:		
Operating leases	5.3%	5.7%

Future minimum lease payments and related lease liabilities as of June 30, 2020 were as follows (in thousands):

	Operating Lease Payments (1)	Sublease Income	Net Operating Lease Payments
2020 (remaining 6 months)	$ 10,976	$ (3,292)	$ 7,684
2021	22,573	(6,257)	16,316
2022	18,118	(6,117)	12,001
2023	15,852	(6,231)	9,621
2024	15,244	(6,293)	8,951
Thereafter	22,903	(7,214)	15,689
Total lease payments	105,666	(35,404)	70,262
Less: imputed interest	(14,175)	—	(14,175)
Present value of lease liabilities:	$ 91,491	$ (35,404)	$ 56,087
Less: current obligations under leases (accrued liabilities)	18,017		
Noncurrent operating lease liabilities	$ 73,474		

(1) Future minimum lease payments exclude short-term leases as well as payments to landlords for variable common area maintenance, insurance and real estate taxes.

As of December 31, 2019, future minimum lease payments were as follows (in thousands):

	Operating Leases
2020	$ 6,387
2021	4,558
2022	3,259
2023	3,235
2024	2,619
Thereafter	1,977
Total lease payments	22,035
Less: imputed interest	(2,776)
Present value of lease liabilities:	$ 19,259
Less: current obligations under leases (accrued liabilities)	5,845
Noncurrent operating lease liabilities	$ 13,414

NOTE 15 – COMMITMENTS AND CONTINGENCIES

Inventory Purchase Commitment

The Company uses contract manufacturers to provide manufacturing services for its products. During the normal course of business, in order to manage manufacturing lead times and help ensure adequate supply, the Company enters into agreements with its contract manufacturer that either allow them to procure inventory based on criteria as defined by the Company or that establish the parameters defining the Company's requirements. A significant portion of the Company's purchase commitments arising from these agreements consist of firm, non-cancelable and unconditional purchase commitments. In certain instances, these agreements allow the Company the option to cancel, reschedule or adjust the Company's requirements based on its business needs prior to firm orders being placed. As of June 30, 2020, the Company had total purchase commitments for inventory of $7.4 million, of which $0.9 million was accrued in the Condensed Consolidated Balance Sheet.

Other Purchase Obligations

On December 31, 2019, TiVo entered into a contract requiring the Company to generate a minimum number of Qualified Referred Subscribers (as defined in the contract) over a 30 month period. In the event that the aggregate number of Qualified Referred Subscribers generated by the Company within the specified time period is less than the minimum guaranteed subscribers, the Company is required to pay an amount equal to the shortfall between the number of Qualified Referred Subscribers generated by the Company and the required minimum multiplied by a per Qualified Referred Subscribers fee, up to a maximum of $5.0 million. As of June 30, 2020, no amounts were accrued in the Condensed Consolidated Balance Sheet

related to this contract as the Company believes it will be able to generate the minimum number of Qualified Referred Subscribers within the 30 month commitment period.

Under certain other contractual arrangements, the Company may be obligated to pay up to approximately $10.9 million over an estimated period of approximately four years if certain milestones are achieved.

Indemnifications

In the normal course of business, the Company provides indemnifications of varying scopes and amounts to certain of its licensees, customers, and business partners against claims made by third parties arising from the use of the Company's products, intellectual property, services or technologies. The Company cannot reasonably estimate the possible range of losses that may be incurred pursuant to its indemnification obligations, if any. Variables affecting any such assessment include, but are not limited to: the nature of the claim asserted; the relative merits of the claim; the financial ability of the party suing the indemnified party to engage in protracted litigation; the number of parties seeking indemnification; the nature and amount of damages claimed by the party suing the indemnified party; and the willingness of such party to engage in settlement negotiations. To date, no such claims have been filed against the Company and no liability has been recorded in the Company’s financial statements.

As permitted under Delaware law, the Company has agreements whereby it indemnifies its officers and directors for certain events or occurrences while the officer or director is, or was, serving at the Company’s request in such capacity. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company believes, given the absence of any such payments in the Company’s history, and the estimated low probability of such payments in the future, that the estimated fair value of these indemnification agreements is immaterial. In addition, the Company has directors’ and officers’ liability insurance coverage that is intended to reduce its financial exposure and may enable the Company to recover any payments, should they occur.

Contingencies

At each reporting period, the Company evaluates whether or not a potential loss amount or a potential range of losses is probable and reasonably estimable under the provisions of the authoritative guidance that addresses accounting for contingencies. The Company is currently unable to predict the final outcome of lawsuits to which it is a party and therefore cannot determine the likelihood of loss nor estimate a range of possible losses. An adverse decision in any of these proceedings could significantly harm the Company’s business and consolidated financial position, results of operations or cash flows.

The Company and its subsidiaries are involved in litigation matters and claims in the normal course of business. In the past, the Company and its subsidiaries have litigated to enforce their respective patents and other intellectual property rights, to enforce the terms of license agreements, to protect trade secrets, to determine the validity and scope of the proprietary rights of others and to defend itself or its customers against claims of infringement or invalidity. The Company expects it or its subsidiaries will be involved in similar legal proceedings in the future, including proceedings regarding infringement of its patents, and proceedings to ensure proper and full payment of royalties by licensees under the terms of its license agreements.

The existing and any future legal actions may harm the Company’s business. For example, legal actions could cause an existing licensee or strategic partner to cease making royalty or other payments to the Company, or to challenge the validity and enforceability of patents owned by the Company’s subsidiaries or the scope of license agreements with the Company’s subsidiaries, or could significantly damage the Company’s relationship with such licensee or strategic partner and, as a result, prevent the adoption of the Company’s other technologies by such licensee or strategic partner. Litigation could also severely disrupt or shut down the business operations of licensees or strategic partners of the Company’s subsidiaries, which in turn would significantly harm ongoing relations with them and cause the Company to lose royalty revenue.

The costs associated with legal proceedings are typically high, relatively unpredictable, and not completely within the Company's control. These costs may be materially higher than expected, which could adversely affect the Company's operating results and lead to volatility in the price of its common stock. Whether or not determined in the Company's favor or ultimately settled, litigation diverts managerial, technical, legal, and financial resources from the Company's business operations. Furthermore, an adverse decision in any of these legal actions could result in a loss of the Company's proprietary rights, subject the Company to significant liabilities, require the Company to seek licenses from others, limit the value of the Company's licensed technology or otherwise negatively impact the Company's stock price or its business and consolidated financial results.

NOTE 16 – SEGMENT AND GEOGRAPHIC INFORMATION

In connection with the Mergers, the Company re-evaluated its reportable segments. The Company concluded that it has two reportable segments for financial reporting purposes: (1) Product and (2) Intellectual Property ("IP") Licensing. There are certain corporate overhead costs that are not allocated to these reportable segments because these operating amounts are not considered in evaluating the operating performance of the Company's business segments.

Reportable segments are identified based on the Company's organizational structure and information reviewed by the Company's chief operating decision maker ("CODM") to evaluate performance and allocate resources. The Company's Chief Executive Officer is also the CODM as defined by the authoritative guidance on segment reporting.

The Product segment consists primarily of licensing Company-developed audio, digital radio, imaging, edge-based machine learning and multi-channel video user experience ("UX") solutions. Edge based machine learning, audio, digital radio, and imaging solutions include the delivery of software and/or hardware-based solutions to the Company's consumer electronics ("CE") customers, automotive manufacturers or their supply chain partners. UX products and services revenue is primarily derived from multi-channel video service providers and CE manufacturers, licensing the TiVo service and selling TiVo-enabled devices, Personalized Content Discovery, enriched Metadata, viewership data and advertising.

The IP Licensing segment consists primarily of licensing the Company's innovations to leading companies in the media and semiconductor industries. Licensing arrangements include access to one more of the Company's foundational patent portfolios and may also include access to some of the Company's industry-leading technologies and proven know-how. In the media industry, the Company's licensees include pay television ("Pay-TV") providers, both in the United States and internationally, consumer electronics manufacturers and other providers of video experiences across various platforms, including over-the-top (OTT) video. In the semiconductor industry, the Company's licensees include semiconductor manufacturers, fabless companies, foundries and packaging companies.

The Company does not identify or allocate assets by reportable segment, nor does the CODM evaluate reportable segments using discrete asset information. Reportable segments do not record inter-segment revenue and accordingly there are none to report. The Company does not allocate other income and expense to reportable segments. Although the CODM uses operating income to evaluate reportable segments, operating costs included in one segment may benefit other segments.

The following table sets forth the Company's segment revenue, operating expenses and operating income (loss) for the three and six months ended June 30, 2020 and 2019 (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Revenue:				
Product segment	$ 64,124	$ 61,431	$ 120,066	$ 105,999
IP Licensing segment	73,507	13,684	135,230	25,683
Total revenue	137,631	75,115	255,296	131,682
Operating expenses:				
Product segment	66,557	46,817	112,794	93,717
IP Licensing segment	20,449	9,362	30,744	19,745
Unallocated operating expenses (1)	68,344 (2)	27,252	104,950 (3)	56,533
Total operating expenses	155,350	83,431	248,488	169,995
Operating income (loss):				
Product segment	(2,433)	14,614	7,272	12,282
IP Licensing segment	53,058	4,322	104,486	5,938
Unallocated operating expenses (1)	(68,344)	(27,252)	(104,950)	(56,533)
Total operating income (loss)	$ (17,719)	$ (8,316)	$ 6,808	$ (38,313)

(1) Unallocated operating expenses consist primarily of selling, marketing, general and administrative expenses, such as administration, human resources, finance, information technology, corporate development and procurement. These expenses are not allocated because these amounts are not considered in evaluating the operating performance of the Company's business segments.
(2) Includes approximately $24.4 million in one-time transaction costs related to the Mergers and $8.2 million in employee severance and acceleration of contractually-obligated equity awards for departing executives.
(3) Includes approximately $27.5 million in one-time transaction costs related to the Mergers and $8.2 million in employee severance and acceleration of contractually-obligated equity awards for departing executives.

A significant portion of the Company's revenue is derived from licensees headquartered outside of the U.S., principally in Asia, and it is expected that this revenue will continue to account for a significant portion of total revenue in future periods. The table below lists the geographic revenue for the periods indicated (in thousands):

	Three Months Ended				Six Months Ended			
	June 30, 2020		June 30, 2019		June 30, 2020		June 30, 2019	
South Korea	$ 60,974	45%	$ 16,412	22%	$ 88,557	35%	$ 33,915	26%
U.S.	43,049	31	12,574	17	66,094	26	24,006	18
Japan	14,032	10	33,827	45	65,354	26	51,059	39
Europe and Middle East	6,982	5	6,463	9	11,430	4	10,463	8
Other	12,594	9	5,839	7	23,861	9	12,239	9
	$ 137,631	100%	$ 75,115	100%	$ 255,296	100%	$ 131,682	100%

For the three months ended June 30, 2020 and 2019, there were one customer and two customers, respectively, that accounted for 10% or more of total revenue. For the six months ended June 30, 2020 and 2019, there were two customers and two customers, respectively, that accounted for 10% or more of total revenue. As of June 30, 2020 and December 31, 2019, there were three customers and three customers, respectively, that each accounted for 10% or more of total accounts receivable.

NOTE 17 - SUBSEQUENT EVENTS

On July 29, 2020, the Board declared a cash dividend of $0.05 per share of common stock, payable on September 21, 2020 to the stockholders of record at the close of business on August 31, 2020.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion should be read in conjunction with the attached unaudited condensed consolidated financial statements and notes thereto, and with our audited financial statements and notes thereto for the year ended December 31, 2019 found in the Form 10-K filed by Xperi Corporation on February 18, 2020 (the "Form 10-K").

This Quarterly Report contains forward-looking statements, which are subject to the safe harbor provisions created by the Private Securities Litigation Reform Act of 1995. Words such as "expects," "anticipates," "plans," "believes," "seeks," "estimates," "could," "would," "may," "intends," "targets" and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Quarterly Report. The identification of certain statements as "forward-looking" is not intended to mean that other statements not specifically identified are not forward-looking. All statements other than statements about historical facts are statements that could be deemed forward-looking statements, including, but not limited to, statements that relate to our future revenue, product development, demand, acceptance and market share, growth rate, competitiveness, gross margins, levels of research, development and other related costs, expenditures, the outcome or effects of and expenses related to litigation and administrative proceedings related to our patents, our intent to enforce our intellectual property, our ability to license our intellectual property, tax expenses, cash flows, our ability to liquidate and recover the carrying value of our investments, our management's plans and objectives for our current and future operations, our plans for quarterly dividends and stock repurchases, our ability to achieve cost savings through the integration of the legacy businesses, the levels of customer spending or research and development activities, general economic conditions, the impact of COVID-19 pandemic and related events, the impact of the Mergers (as defined below) on our financial condition and results of operations, our plans to separate the combined product and IP licensing businesses, and the sufficiency of financial resources to support future operations and capital expenditures.

Although forward-looking statements in this Quarterly Report reflect the good faith judgment of our management, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks, uncertainties, and changes in condition, significance, value and effect, including those discussed below under the heading "Risk Factors" within Part II, Item 1A of this Quarterly Report and other documents we file from time to time with the Securities and Exchange Commission (the "SEC"), such as our annual reports on Form 10-K, our quarterly reports on Form 10-Q and our current reports on Form 8-K. Such risks, uncertainties and changes in condition, significance, value and effect could cause our actual results to differ materially from those expressed herein and in ways not readily foreseeable. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Quarterly Report and are based on information currently and reasonably known to us. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Quarterly Report, other than as required by law. Readers are urged to carefully review and consider the various disclosures made in this Quarterly Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

In this Quarterly Report, the "Company," "we," "us" and "our" refer to Xperi Holding Corporation, (or Xperi Corporation for periods prior to June 1, 2020), which operates its business through its subsidiaries. Unless specified otherwise, the financial results in this Quarterly Report are those of the Company and its subsidiaries on a consolidated basis.

Business Overview

On December 18, 2019, Xperi Corporation ("Xperi") entered into a definitive agreement with TiVo Corporation ("TiVo"), to combine in an all-stock merger of equals transaction (the "Mergers"). Following consummation of the Mergers on June 1, 2020, Xperi Holding Corporation became the parent company of both Xperi and TiVo. The common stock of both Xperi and TiVo were de-registered after completion of the Mergers. On June 2, 2020, Xperi Holding Corporation's common stock, par value $0.001 per share, commenced trading on the Nasdaq Global Select Market ("Nasdaq") under the ticker symbol "XPER." Xperi was determined to be the accounting acquirer in the Mergers. As a result, the historical financial statements of Xperi for periods prior to the Mergers are considered to be the historical financial statements of Xperi Holding Corporation. As used herein, the "Company," "we," "us" and "our" refer to Xperi when referring to periods prior to June 1, 2020 and Xperi Holding Corporation when referring to periods subsequent to June 1, 2020. Our results of operations include the operations of TiVo after June 1, 2020. For further discussion on the Mergers, refer to "Item 1A. Risk Factors," and "Note 7 – Business Combination" in the Notes to Condensed Consolidated Financial Statements.

In connection with the Mergers, we incurred significant one-time expenses in the first two quarters of 2020 such as transaction costs (e.g. bankers fees, legal fees, consultant fees, etc.), severance costs and stock-based compensation expense resulting from the contractually-obligated acceleration of equity instruments for departing executives. Total transaction costs amounted to $24.4 million and $27.5 million for the three and six months ended June 30, 2020, respectively. Post-merger severance and

stock-based compensation expense resulting from the contractually-obligated acceleration of equity instruments were $6.7 million and $1.5 million, respectively, for each of the three and six months ended June 30, 2020. We expect to achieve at least $50.0 million of annualized run-rate cost savings by year-end 2021 through the integration of the respective product and IP licensing businesses of the legacy companies.

We are a leading consumer and entertainment technology licensing company and one of the industry's largest intellectual property (IP) licensing platforms, with a diverse portfolio of media and semiconductor intellectual property and more than 11,000 patents and applications. We invent, develop, and deliver technologies that enable extraordinary experiences. Xperi technologies, delivered via our brands (DTS, HD Radio, IMAX Enhanced, Invensas, TiVo), and by our subsidiary, Perceive Corporation ("Perceive"), make entertainment more entertaining, and smart devices smarter. Our technologies are integrated into billions of consumer devices, media platforms, and semiconductors worldwide, driving increased value for partners, customers and consumers. We shape how millions of consumers access and experience entertainment content, and our innovations are found in billions of devices and hundreds of millions of interfaces around the globe. Headquartered in Silicon Valley with operations around the world, we have approximately 2,000 employees and over 35 years of operating experience.

COVID-19 Impact

In December 2019, a novel strain of coronavirus ("COVID-19") was reported to have surfaced in Wuhan, China, and has since spread throughout the world. In March 2020, the World Health Organization declared COVID-19 a pandemic. In an effort to protect the health and safety of our employees, we took proactive, aggressive action from the earliest signs of the outbreak to adopt social distancing policies at our locations around the world, including working from home, limiting the number of employees attending meetings, and suspending employee travel. In an effort to contain COVID-19 and slow its spread, governments around the world have also enacted various measures, including orders to close all business locations not deemed "essential," isolate people to their places of residence, and practice social distancing when engaging in essential activities.
We anticipate that these actions and the resulting global economic impacts will negatively impact our consolidated financial results for the remainder of 2020. The impact to date has included significant volatility and a decline in demand in various markets and industries, particularly the automotive market, which has been adversely impacted and is expected to continue to adversely impact our revenue. For example, we anticipate approximately a 20-30% decline in our royalty revenue in 2020 from our products sold to the automotive market, such as HD Radio, as compared to the prior year. In addition, we recorded, in the first quarter of 2020, an incremental provision for credit losses of approximately $2.0 million due to heightened risk of nonpayment on existing accounts receivable as a result of the impaired financial condition and liquidity positions of certain of our customers.

We have been closely monitoring the COVID-19 pandemic and its impact on our business, including legislation to mitigate the impact of COVID-19 such as the Coronavirus Aid, Relief, and Economic Security (CARES) Act which was enacted on March 27, 2020. A significant portion of our anticipated revenue for 2020 is derived from fixed-fee and minimum-guarantee arrangements, primarily from large, well-capitalized customers which we believe somewhat mitigates the risks to our business. Although we are unable to predict the full impact and duration of COVID-19 on our business, we are actively managing our financial expenditures in response to the current uncertainty. Further discussion of the potential impacts on our business from the COVID-19 pandemic is provided under Part II, *Item 1A – Risk Factors*.

Results of Operations

Revenue

We generate our revenue from the following principal activities.

License Agreements

We operate in two business segments. In our Product segment, we license our audio, imaging, edge-based machine learning and multi-channel video user experience ("UX") solutions. In our IP Licensing segment, we license (i) our media patent portfolios ("IP Media licensing") to pay television providers, consumer electronics manufacturers and other providers of video experiences across various platforms and (ii) our semiconductor technologies and associated patent portfolios ("IP Semiconductor licensing") to semiconductor manufacturers, fabless companies, foundries and packaging companies. We license our technologies and portfolios under three revenue models: (i) fixed-fee IP Media licensing, (ii) fixed-fee or minimum guarantee IP Semiconductor or Product licensing, and (iii) per-unit or per-subscriber royalty licenses.

Fixed-fee IP Media licensing

Our long-term fixed-fee IP Media licensing agreements provide our customers with the rights to future patented technologies over the term of the agreement that are highly interdependent or highly interrelated to the patented technologies provided at the inception of the agreement. We treat these rights as a single performance obligation with revenue recognized on a straight-line basis over the term of the fixed-fee license agreement.

At times, we enter into license agreements in which a licensee is released from past patent infringement claims and is granted a license to ship an unlimited number of units or for an unlimited number of subscribers over a future period for a fixed fee. In these arrangements, we allocate the transaction price between the release for past patent infringement claims and the future license. As the release from past patent infringement claims is generally satisfied at execution of the agreement, the transaction price allocated to the release from past patent infringement claims is generally recognized in the period the agreement is executed and the amount of transaction price allocated to the future license is recognized ratably over the future license term.

Fixed-fee or minimum guarantee IP Semiconductor or Product licensing

We enter into Product or IP Semiconductor licenses that have fixed fee or minimum guarantee arrangements, whereby licensees pay a fixed fee for the right to incorporate our technology in the licensee's products over the license term. In arrangements with a minimum guarantee, the fixed fee component corresponds to a minimum number of units or dollars that the customer must produce or pay, with additional per-unit fees for any units or dollars exceeding the minimum. In most cases, the customer pays the fixed license fee in specified installments over the license term. For both fixed fee and minimum guarantee agreements for IP Semiconductor or Product licensing, we recognize the full fixed fee as revenue at the beginning of the license term, when the licensee has the right to use the IP and begins to benefit from the license.

If the contract term of a fixed fee or minimum guarantee arrangement is longer than one year, we also consider the scheduled payment arrangements to determine whether a significant financing component exists. In general, if the payment arrangements extend beyond the initial twelve months of the contract, we treat a portion of the payments as a significant financing component. The discount rate used for each arrangement reflects the rate that would be used in a separate financing transaction between us and the licensee at contract inception and takes into account the credit characteristics of the licensee and market interest rates as of the date of the agreement. As such, the amount of fixed fee revenue recognized at the beginning of the license term will be reduced by the calculated financing component.

We actively monitor and enforce our IP, including seeking appropriate compensation from customers that have under-reported royalties owed under a license agreement and from third parties that utilize our intellectual property without a license. As a result of these activities, we may, from time to time, recognize revenue from payments resulting from periodic compliance audits of licensees for underreporting royalties incurred in prior periods, as part of a settlement of a patent infringement dispute, or from legal judgments in a license dispute. These recoveries and settlements may cause revenue to be higher than expected during a particular reporting period and such recoveries may not occur in subsequent periods. We recognize revenue from recoveries when a binding agreement has been executed and we conclude collection under that agreement is likely.

Per-unit or per-subscriber royalty licenses

We recognize revenue from per-unit or per-subscriber royalty licenses in the period in which the licensee's sales or production are estimated to have occurred, which results in an adjustment to revenue when actual sales or production are subsequently reported by the licensee, which is generally in the month or quarter following usage or shipment. We generally recognize revenue from royalty licenses on a per-subscriber per-month model for licenses with service providers and a per-unit shipped or manufactured model for licenses with CE manufacturers. Estimating licensees' quarterly royalties prior to receiving the royalty reports requires us to make significant assumptions and judgments related to forecasted trends and growth rates used to estimate quantities shipped by customers, which could have a material impact on the amount of revenue we report on a quarterly basis.

Arrangements with Multiple System Operators for the TiVo Service

Our arrangements with multiple system operators ("MSOs") typically include software customization and set-up services, associated maintenance and support, limited training, post-contract support, TiVo-enabled DVRs, non-DVR STBs and the TiVo service.

We have two types of arrangements with MSOs that include technology deployment and engineering services. In instances where we host the TiVo service, non-refundable payments received for customization and set-up services are deferred and recognized as revenue ratably over the hosting term. The related cost of such services is capitalized to the extent it is deemed recoverable and amortized to cost of revenue over the same period as the related TiVo service revenue is recognized. We

estimate the stand-alone selling prices for training, DVRs, non-DVR STBs and maintenance and support based on the price charged in stand-alone sales of the promised good or service. The stand-alone selling price for the TiVo service is determined considering the size of the MSO and expected volume of deployment, market conditions, competitive landscape, internal costs and total gross margin objectives. For a term license to the TiVo service, we receive license fees for the hosted TiVo service on either a per-subscriber per-month basis or a fixed fee. We recognize revenue from per-subscriber per-month licenses during the month the TiVo service is provided to the customer and recognize revenue from fixed fee licenses ratably over the license period.

In arrangements where we do not host the TiVo service and that include engineering services that are essential to the functionality of the licensed technology or involve significant customization or modification of the software, we recognize revenue as progress toward completion is made using an input method based on the ratio of costs incurred to date to total estimated costs of the project. Estimating project costs requires forecasting costs, tracking progress toward completion and projecting the remaining effort to complete the project. These estimates are reassessed throughout the term of the arrangement, and revisions to estimates are recognized on a cumulative catch-up basis when the changed conditions become known. We generally recognize revenue from license fees for the TiVo service that the Company does not host on a per-subscriber per-month basis due to the recognition constraint on intellectual property usage-based royalties.

Subscription Services

Subscription services revenue primarily consists of fees to provide customers with access to one or more of our hosted products such as the iGuide IPG, advanced search and recommendations, metadata and analytics products, including routine customer support. We generally receive per-subscriber per-month fees for the iGuide IPG and search and recommendations service and revenue is recorded in the month the customer uses the service. We generally receive a monthly or quarterly fee from our metadata or analytics licenses for the right to use the metadata or access our analytics platform and to receive regular updates. Revenue from our metadata and analytics service is recognized ratably over the subscription period.

TiVo-enabled DVRs and TiVo Service

We sell TiVo-enabled DVRs and the related service directly to customers through sales programs via the TiVo.com website and license the sale of TiVo-enabled DVRs through a limited number of retailers. After the initial subscription period, all customers have various pricing options when they renew their subscription.

The transaction price allocated to the DVR is recognized as revenue upon shipment to the customer and the transaction price allocated to the TiVo service is recognized as revenue ratably over the service period. Subscription revenue from lifetime subscriptions is recognized ratably over the estimated useful life of the DVR associated with the subscription. The estimated useful life for a DVR depends on a number of assumptions, including, but not limited to, customer retention rates, the timing of new product introductions and historical experience. We periodically reassess the estimated useful life of a DVR. When the actual useful life of the DVR materially differs from our estimates, the estimated useful life of the DVR is adjusted, which could result in the recognition of revenue over a longer or shorter period of time.

The following table presents our historical operating results for the periods indicated as a percentage of revenue:

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Revenue:				
Licensing, services and software	99%	100%	99%	100%
Hardware	1	—	1	—
Total revenue	100	100	100	100
Operating expenses:				
Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets	6	3	4	3
Cost of hardware revenue, excluding depreciation and amortization of intangible assets	1	—	1	—
Research, development and other related costs	28	34	26	39
Selling, general and administrative	50	36	41	43
Depreciation expense	2	2	2	3
Amortization expense	23	34	21	39
Litigation expense	3	2	2	2
Total operating expenses	113	111	97	129
Operating income (loss)	(13)	(11)	3	(29)
Interest expense	5	8	4	10
Other income and expense, net	—	(6)	1	(5)
Loss on debt extinguishment	6	—	3	—
Loss before taxes	(24)	(13)	(5)	(34)
Benefit from income taxes	(7)	(5)	(3)	(10)
Net loss	(17)%	(8)%	(2)%	(24)%

Total Revenue (in thousands, except for percentages):

	Three Months Ended			
	June 30, 2020	June 30, 2019	Increase/ (Decrease)	% Change
Total revenue	$ 137,631	$ 75,115	$ 62,516	83%

The $62.5 million, or 83% increase in total revenue for the three months ended June 30, 2020, compared to the same period in the prior year, was primarily due to the inclusion of $52.8 million of revenue from the results of TiVo operations and a new IP Semiconductor patent and technology license agreement that became effective in the second quarter of 2020. The increase in revenue was partially offset by a decrease in royalty revenue from existing Product licensing agreements.

	Six Months Ended			
	June 30, 2020	June 30, 2019	Increase/ (Decrease)	% Change
Total revenue	$ 255,296	$ 131,682	$ 123,614	94%

The $123.6 million or 94% increase in total revenue for the six months ended June 30, 2020, compared to the same period in the prior year, was primarily due to the inclusion of $52.8 million of revenue from the results of TiVo's operations, a new IP Semiconductor patent and technology license agreement that became effective in the second quarter of 2020, and an IP Semiconductor litigation settlement reached in March 2020. The increase in revenue was partially offset by a decrease in royalty revenue from existing Product licensing agreements.

Cost of Licensing, Services and Software Revenue, Excluding Depreciation and Amortization of Intangible Assets

Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, consists primarily of employee-related costs, royalties paid to third parties, maintenance costs and an allocation of facilities costs, as well as service center and other expenses related to providing the TiVo Service, non-recurring engineering ("NRE") services and our metadata offering.

Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, for the three months ended June 30, 2020 was $8.3 million, as compared to $2.5 million for the three months ended June 30, 2019, an increase of $5.8 million. Cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, for the six months ended June 30, 2020 was $9.8 million, as compared to $4.5 million for the six months ended June 30, 2019, an increase of $5.3 million. The increases were primarily due to the inclusion of $6.8 million of TiVo expenses since the Mergers. Excluding TiVo expenses, the costs would have decreased by $1.0 million and $1.5 million, respectively, for the three and six months ended June 30, 2020, as compared to the corresponding periods in 2019, due principally to lower royalties paid to a third party in connection with a Product segment contract in the first two quarters of 2020.

We anticipate cost of licensing, services and software revenue, excluding depreciation and amortization of intangible assets, will continue to increase in 2020 when compared to 2019 due to incremental expenses from the combined TiVo operations.

Cost of Hardware Revenue, Excluding Depreciation and Amortization of Intangible Assets

Cost of hardware revenue, excluding depreciation and amortization of intangible assets, includes all product-related costs associated primarily with TiVo-enabled devices, including employee-related costs, warranty costs, order fulfillment costs, certain licensing costs, and an allocation of facilities costs.

Cost of hardware revenue, excluding depreciation and amortization of intangible assets, for the three months ended June 30, 2020 was $1.4 million, as compared to $0.1 million for the three months ended June 30, 2019, an increase of $1.3 million. Cost of hardware revenue, excluding depreciation and amortization of intangible assets, for the six months ended June 30, 2020 was $1.5 million, as compared to $0.2 million for the six months ended June 30, 2019, an increase of $1.3 million. The increases were primarily due to the inclusion of $1.4 million of TiVo expenses since the Mergers.

We anticipate cost of hardware revenue, excluding depreciation and amortization of intangible assets, will increase in 2020 when compared to 2019 due to incremental expenses from the combined TiVo operations.

Research, Development and Other Related Costs

Research, development and other related costs (“R&D expense”) are comprised primarily of employee-related costs, stock-based compensation expense, engineering consulting expenses associated with new product and technology development, product commercialization, quality assurance and testing costs, as well as costs related to patent applications and examinations, product "tear downs" and reverse engineering, materials, supplies, equipment depreciation and an allocation of facilities costs. All research, development and other related costs are expensed as incurred.

R&D expense for the three months ended June 30, 2020 was $38.2 million, as compared to $25.3 million for the three months ended June 30, 2019, an increase of $12.9 million. R&D expense for the six months ended June 30, 2020 was $66.8 million, as compared to $52.0 million for the six months ended June 30, 2019, an increase of $14.8 million. The increases were due to the inclusion of $9.8 million of TiVo expenses since the Mergers, increased headcount and personnel costs in Perceive which was created to focus on delivering edge inference solutions, and severance charges incurred in connection with consolidating and optimizing post-merger operations.

We believe that a significant level of R&D expense will be required for us to remain competitive in the future. We also anticipate that R&D expense will increase significantly in future periods as a result of TiVo R&D expenses being fully included in future periods.

Selling, General and Administrative

Selling expenses consist primarily of compensation and related costs for sales and marketing personnel engaged in sales and licensee support, reverse engineering personnel and services, marketing programs, public relations, promotional materials, travel, trade show expenses, and stock-based compensation expense. General and administrative expenses consist primarily of compensation and related costs for general management, information technology, finance personnel, legal fees and expenses, facilities costs, stock-based compensation expense, and professional services. Our general and administrative expenses, other than facilities-related expenses, are not allocated to other expense line items.

Selling, general and administrative expenses for the three months ended June 30, 2020 were $68.2 million, as compared to $27.3 million for the three months ended June 30, 2019, an increase of $40.9 million. The increase was due principally to the

inclusion of $29.4 million of TiVo expenses since the Mergers, legacy Xperi merger transaction costs of $11.1 million and legacy Xperi post-merger severance costs of $2.3 million, partially offset by a reduction in travel and entertainment expenses.

Selling, general and administrative expenses for the six months ended June 30, 2020 were $104.8 million, as compared to $56.5 million for the six months ended June 30, 2019, an increase of $48.3 million. The increase was due principally to the inclusion of $29.4 million of TiVo expenses since the Mergers, legacy Xperi merger transaction costs of $14.2 million and legacy Xperi post-merger severance costs of $2.3 million.

We anticipate selling, general and administrative expenses will remain higher than in the prior year due to inclusion of the TiVo operations.

Depreciation Expense

Depreciation expense for the three months ended June 30, 2020 was $3.3 million, as compared to $1.8 million for the three months ended June 30, 2019, an increase of $1.5 million. Depreciation expense for the six months ended June 30, 2020 was $5.1 million, as compared to $3.4 million for the six months ended June 30, 2019, an increase of $1.7 million. The increases were primarily attributable to depreciation expense on fixed assets recorded in connection with the Mergers in June 2020.

We anticipate depreciation expense will continue to increase in 2020 as a result of the Mergers.

Amortization Expense

Amortization expense for the three months ended June 30, 2020 was $32.0 million, as compared to $25.3 million for the three months ended June 30, 2019, an increase of $6.7 million. Amortization expense for the six months ended June 30, 2020 was $54.6 million, as compared to $50.8 million for the six months ended June 30, 2019, an increase of $3.8 million. These increases were primarily attributable to amortization of intangible assets recorded in connection with the Mergers in June 2020.

With the Mergers, we anticipate that amortization expenses will continue to be a significant expense since we acquired approximately $878 million in intangible assets which will be amortized over the next several years. See “Note 8 - *Goodwill and Identified Intangible Assets”* in the Notes to Condensed Consolidated Financial Statements for additional information.

Litigation Expense

Litigation expense for the three months ended June 30, 2020 was $3.9 million, as compared to $1.2 million for the three months ended June 30, 2019, an increase of $2.7 million. Litigation expense for the six months ended June 30, 2020 was $6.0 million, as compared to $2.5 million for the six months ended June 30, 2019, an increase of $3.5 million. These increases were primarily due to inclusion of $2.2 million of TiVo litigation expenses since the Mergers, and increased case activity in the first two quarters of 2020.

In 2019 and in 2020 prior to the Mergers TiVo’s litigation expenses were significantly higher than Xperi’s litigation expenses in the same periods. We expect that litigation expense will continue to be a material portion of our operating expenses and, as a result of the Mergers, will increase significantly in future periods. Litigation expense may fluctuate between periods because of planned or ongoing litigation, as described in Part II, Item 1 – Legal Proceedings, and because of litigation planned for or initiated from time to time in the future in order to enforce and protect our intellectual property and contract rights.

Upon expiration of our customers’ licenses, if those licenses are not renewed, litigation may become necessary to secure payment of reasonable royalties for the use of our patented technology. If we plan for or initiate such litigation, our future litigation expenses may increase.

Stock-based Compensation Expense

The following table sets forth our stock-based compensation expense for the three and six months ended June 30, 2020 and 2019 (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Cost of licensing, services and software revenue	$ 73	$ —	$ 73	$ —
Research, development and other related costs	2,838	3,146	5,874	6,749
Selling, general and administrative	5,558	4,075	10,509	8,095
Total stock-based compensation expense	$ 8,469	$ 7,221	$ 16,456	$ 14,844

Stock-based compensation awards include employee stock options, restricted stock awards and units, and employee stock plan purchases. The increases in stock-based compensation for the three and six months ended June 30, 2020, compared to the corresponding periods in 2019, were a result of including incremental $2.2 million from assumed TiVo stock awards, partially offset by lower ongoing expenses driven primarily by a decline in the market price of the awards granted.

Interest Expense

Interest expense for the three months ended June 30, 2020 and 2019 was $7.0 million and $6.2 million, respectively. The increase in interest expense in the three months ended June 30, 2020 was primarily a result of a higher average debt balance as compared to the second quarter of 2019 as we entered into a new term loan of $1,050 million on June 1, 2020 to refinance the indebtedness of the combined companies in connection with the Mergers.

Interest expense for the six months ended June 30, 2020 and 2019 was $11.2 million and $12.9 million, respectively. The decrease in interest expense in the six months ended June 30, 2020 was primarily a result of a lower average debt balance as compared to the comparable period in 2019, coupled with lower interest rates on our debt in the first two quarters in 2020.

We anticipate interest expense to increase in 2020 when compared to 2019 as a result of increased borrowings and amortization of debt issuance costs in connection with the Mergers in June 2020.

Other Income and Expense, Net

Other income and expense, net, for the three months ended June 30, 2020 was $0.6 million, as compared to $4.8 million for the three months ended June 30, 2019. Other income and expense, net, for the six months ended June 30, 2020 was $1.1 million, as compared to $7.1 million for the six months ended June 30, 2019. Other income and expense was lower in the current year due principally to recognition of an unrealized gain of $2.0 million and $1.6 million on our equity investment in Onkyo Corporation common stock for the three and six months ended June 30, 2019, respectively. Additionally, lower other income and expense, net, in the current year was attributable to a decrease in interest income from financing components under Topic 606.

Loss on Debt Extinguishment

In connection with the Mergers, we refinanced the indebtedness of the combined companies, and recognized a loss on early debt extinguishment of $8.3 million in each of the three and six months ended June 30, 2020. We did not incur a loss on early debt extinguishment in 2019.

Provision for Income Taxes

For the three months ended June 30, 2020, we recorded an income tax benefit of $9.3 million on a pretax loss of $32.4 million and for the six months ended June 30, 2020, we recorded an income tax benefit of $7.2 million on a pretax loss of $11.6 million, which resulted in an effective tax rate of 62.7% for the six months ended June 30, 2020. The tax benefit of $7.2 million is comprised of a $10.5 million tax benefit related to the five month pre-merger period and a tax expense of $3.3 million related to the one month post-merger period. The five month pre-merger income tax benefit of $10.5 million was primarily related to a net decrease in valuation allowance as a result of the Mergers, deduction from foreign-derived intangible income, and the release of unrecognized tax benefits due to the lapse of applicable statute of limitation offset by tax expense from operating income, shortfalls from stock-based compensation, certain non-deductible expenses, and unrealized foreign exchange losses from the prior period South Korea refund claim. The one month post-merger income tax expense of $3.3 million was primarily

related to income tax expense from foreign operations, foreign withholding taxes and U.S. federal minimum tax. As a result of the Mergers, a valuation allowance was recorded on the net deferred tax assets of the U.S. federal consolidated group.

For the three months ended June 30, 2019, we recorded an income tax benefit of $3.5 million on a pretax loss of $9.7 million and for the six months ended June 30, 2019, we recorded an income tax benefit of $12.5 million on a pretax loss of $44.1 million, which resulted in an effective tax rate of 28.3% for the six months ended June 30, 2019. The income tax benefit for the three and six months ended June 30, 2019 was primarily related to tax benefit from operating losses and the realization of certain tax credits, offset by foreign withholding taxes, certain non-deductible expenses, and shortfalls from stock-based compensation.

Our income tax provision is based on our worldwide estimated annualized effective tax rate, except for jurisdictions for which a loss is expected for the year and no benefit can be realized for those losses, and the tax effect of discrete items occurring during the period. The tax for jurisdictions for which a loss is expected and no benefit can be realized for the year is computed using a separate effective tax rate. The decrease in income tax benefit for the six months ended June 30, 2020 as compared to the prior year is largely attributable to a decrease in operating losses, increase in valuation allowance in the post-merger period, foreign withholding taxes, U.S. federal minimum taxes, and unrealized foreign exchange loss from the South Korea refund claim partially offset by tax benefits from the release of unrecognized tax benefits due to the lapse of applicable statute of limitation and a decrease in valuation allowance as a result of the Mergers.

During the fourth quarter of 2019, we filed a refund claim for foreign taxes previously withheld from licensees in South Korea based on recent court rulings in South Korea and other business factors. These previously withheld foreign taxes were claimed as a foreign tax credit in the U.S. As a result of our refund claim, we recorded a non-current income tax receivable of $65.2 million in income tax receivable, an unrecognized tax benefit of $48.2 million in other long-term liabilities, and a reduction in deferred tax assets of $17.0 million. We anticipate filing a refund claim for the 2020 year-to-date South Korean withholding taxes. During the first six months of 2020, an additional non-current income tax receivable of $8.4 million, an unrecognized tax benefit of $6.2 million in other long-term liabilities, and a reduction in deferred tax assets of $2.2 million were recorded. As part of our accounting for the acquisition of TiVo, we recorded a non-current income tax receivable of $28.8 million and a reduction in deferred tax assets of $12.5 million with a corresponding offset to valuation allowance, with the residual recorded to goodwill. At June 30, 2020, we had recorded a cumulative unrealized foreign exchange loss of approximately $4.0 million as a reduction in non-current income tax receivable.

The need for a valuation allowance requires an assessment of both positive and negative evidence when determining whether it is more-likely-than-not that deferred tax assets are recoverable. Such assessment is required on a jurisdiction-by-jurisdiction basis. In making such assessment, significant weight is given to evidence that can be objectively verified. After considering both positive and negative evidence to assess the recoverability of our net deferred tax assets, we determined that it was not more-likely-than-not that we would realize our federal, certain state and certain foreign deferred tax assets given the substantial amount of tax attributes that will remain unutilized to offset forecasted future tax liabilities. In the future, we may release valuation allowance and recognize certain deferred federal tax assets, deferred state tax assets or deferred tax assets of other foreign subsidiaries depending on achievement of future profitability in relevant jurisdictions, or implementing tax planning strategies that enable us to utilize deferred tax assets that would otherwise be unused. Any release of valuation allowance could have the effect of decreasing the income tax provision in the period the valuation allowance is released. We continue to monitor the likelihood that we will be able to recover our deferred tax assets, including those for which a valuation allowance is recorded. There can be no assurance that we will generate profits or implement tax strategies in future periods enabling us to fully realize our deferred tax assets. The timing of recording a valuation allowance or the reversal of such valuation allowance is subject to objective and subjective factors that cannot be readily predicted in advance. Adjustments could be required in the future if we conclude that it is more-likely-than-not that deferred tax assets are not recoverable. A provision for a valuation allowance could have the effect of increasing the income tax provision in the period the valuation allowance is provided.

Segment Operating Results

In connection with the Mergers, we re-evaluated our reportable segments. We concluded that we have two reportable segments: (1) Product and (2) IP Licensing. There are certain corporate overhead costs that are not allocated to these reportable segments because these operating amounts are not considered in evaluating the operating performance of our business segments.

Our Chief Executive Officer has been determined to be the Chief Operating Decision Maker (“CODM”) in consideration with the authoritative guidance on segment reporting.

The Product segment consists primarily of licensing our internally-developed audio, digital radio, imaging, edge-based machine learning and multi-channel video user experience (“UX”) solutions. Edge based machine learning, audio, digital radio, and imaging solutions include the delivery of software and/or hardware-based solutions to the Company’s consumer electronics (“CE”) customers, automotive manufacturers or their supply chain partners. UX products and services revenue is primarily

derived from multi-channel video service providers and CE manufacturers, licensing the TiVo service and selling TiVo-enabled devices, Personalized Content Discovery, enriched Metadata, viewership data and advertising.

The IP Licensing segment consists primarily of licensing our innovations to leading companies in the media and semiconductor industries. Licensing arrangements include access to one or more of our foundational patent portfolios and may also include access to some of our industry-leading technologies and proven know-how. In the media industry, our licensees include pay television ("Pay-TV") providers, both in the United States and internationally, consumer electronics manufacturers and other providers of video experiences across various platforms, including over-the-top (OTT) video. In the semiconductor industry, our licensees include semiconductor manufacturers, fabless companies, foundries and packaging companies.

We do not identify or allocate assets by reportable segment, nor does the CODM evaluate reportable segments using discrete asset information. Reportable segments do not record inter-segment revenue and accordingly there are none to report. Although the CODM uses operating income to evaluate reportable segments, operating costs included in one segment may benefit other segments.

The following table sets forth our segments' revenue, operating expenses and operating income (loss) (in thousands):

	Three Months Ended		Six Months Ended	
	June 30, 2020	**June 30, 2019**	**June 30, 2020**	**June 30, 2019**
Revenue:				
Product segment	$ 64,124	$ 61,431	$ 120,066	$ 105,999
IP Licensing segment	73,507	13,684	135,230	25,683
Total revenue	137,631	75,115	255,296	131,682
Operating expenses:				
Product segment	66,557	46,817	112,794	93,717
IP Licensing segment	20,449	9,362	30,744	19,745
Unallocated operating expenses (1)	68,344	27,252	104,950	56,533
Total operating expenses	155,350	83,431	248,488	169,995
Operating income (loss):				
Product segment	(2,433)	14,614	7,272	12,282
IP Licensing segment	53,058	4,322	104,486	5,938
Unallocated operating expenses (1)	(68,344)	(27,252)	(104,950)	(56,533)
Total operating income (loss)	$ (17,719)	$ (8,316)	$ 6,808	$ (38,313)

(1) Unallocated operating expenses consist primarily of selling, general and administrative expenses, including administration, human resources, finance, information technology, corporate development and procurement. These expenses are not allocated because these amounts are not considered in evaluating the operating performance of the Company's business segments.

The revenue and operating income (loss) amounts in this section have been presented on a basis consistent with U.S. GAAP applied at the segment level. Of our $846.9 million in goodwill at June 30, 2020, approximately $524.1 million was allocated to our Product reporting segment and approximately $322.8 million was allocated to our IP Licensing reporting segment.

For the three months ended June 30, 2020, the unallocated operating expenses were $68.3 million compared to $27.3 million for the three months ended June 30, 2019. The increase of $41.0 million was due principally to the inclusion of $29.4 million of TiVo expenses since the Mergers, legacy Xperi merger transaction costs of $11.1 million and legacy Xperi post-merger severance costs of $2.3 million, partially offset by a reduction in travel and entertainment expenses.

For the six months ended June 30, 2020, the unallocated operating expenses were $105.0 million compared to $56.3 million for the six months ended June 30, 2019. The increase of $48.5 million was due principally to the inclusion of $29.4 million of TiVo expenses since the Mergers, legacy Xperi merger transaction costs of $14.2 million and legacy Xperi post-merger severance costs of $2.3 million.

Product Segment

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Total revenue	$ 64,124	$ 61,431	$ 120,066	$ 105,999
Operating expenses:				
Total cost of revenue	9,680	2,529	11,264	4,736
Research, development and other related costs	30,781	20,111	53,629	41,103
Litigation	529	547	739	791
Depreciation	2,797	1,448	4,169	2,723
Amortization	22,770	22,182	42,993	44,364
Total operating expenses	66,557	46,817	112,794	93,717
Total operating income (loss)	$ (2,433)	$ 14,614	$ 7,272	$ 12,282

Product revenue for the three months ended June 30, 2020 was $64.1 million as compared to $61.4 million for the three months ended June 30, 2019, an increase of $2.7 million. Product revenue for the six months ended June 30, 2020 was $120.1 million as compared to $106.0 million for the six months ended June 30, 2019, an increase of $14.1 million. The increases were primarily attributable to the inclusion of $30.2 million of TiVo product revenue since the Mergers, partially offset by lower minimum guarantee (“MG”) revenue due to the timing and duration of MG contracts up for renewal and executed during the first two quarters of 2020, and a decrease in royalty revenue from existing licensing arrangements. We anticipate Product revenue for 2020 will be higher than revenue for 2019 due principally to the additional product revenue from TiVo following the Mergers.

Operating expenses for the three months ended June 30, 2020 were $66.6 million, as compared to $46.8 million for the three months ended June 30, 2019, an increase of $19.8 million. Operating expenses for the six months ended June 30, 2020 were $112.8 million, as compared to $93.7 million for the six months ended June 30, 2019, an increase of $19.1. The increases were primarily due to the inclusion of $20.6 million of TiVo Product expenses since the Mergers and increased headcount and personnel costs in Perceive, partially offset by lower legacy Xperi amortization expense. The lower legacy Xperi amortization was attributable to certain intangible assets becoming fully amortized over the past twelve months.

Operating loss in the three months ended June 30, 2020 was $2.4 million compared to operating income of $14.6 million in the three months ended June 30, 2019, with the variance due to the reasons stated above.

Operating income for the six months ended June 30, 2020 was $7.3 million compared to operating income of $12.3 million in the six months ended June 30, 2019, with the variance due to the reasons stated above.

IP Licensing Segment

	Three Months Ended		Six Months Ended	
	June 30, 2020	June 30, 2019	June 30, 2020	June 30, 2019
Total revenue	$ 73,507	$ 13,684	$ 135,230	$ 25,683
Operating expenses:				
Research, development and other related costs	7,445	5,235	13,204	10,903
Litigation	3,342	684	5,235	1,730
Depreciation	388	311	745	704
Amortization	9,274	3,132	11,560	6,408
Total operating expenses	20,449	9,362	30,744	19,745
Total operating income	$ 53,058	$ 4,322	$ 104,486	$ 5,938

IP Licensing revenue for the three months ended June 30, 2020 was $73.5 million as compared to $13.7 million for the three months ended June 30, 2019, an increase of $59.8 million. IP Licensing revenue for the six months ended June 30, 2020 was $135.2 million as compared to $25.7 million for the six months ended June 30, 2019, an increase of $109.5 million. The increases were primarily attributable to the inclusion of $22.7 million of TiVo IP Licensing revenue since the Mergers, a new IP Semiconductor patent and technology license agreement becoming effective in the second quarter of 2020, and an IP Semiconductor litigation settlement reached in March 2020. We anticipate IP Licensing revenue for 2020 will be higher than

revenue for 2019 due to the Mergers, and due to the new IP Semiconductor patent and technology license agreement and the IP Semiconductor litigation settlement entered into during the first two quarters of 2020.

Operating expenses for the three months ended June 30, 2020 were $20.4 million, as compared to $9.4 million for the three months ended June 30, 2019, an increase of $11.0 million. Operating expenses for the six months ended June 30, 2020 were $30.7 million, as compared to $19.7 million for the six months ended June 30, 2019, an increase of $11.0. The increases were primarily due to the inclusion of $10.6 million of TiVo IP Licensing expenses since the Mergers.

In 2019 and in 2020 prior to the Mergers TiVo's litigation expenses were significantly higher than Xperi's litigation expenses in the same period. We expect that litigation expense will continue to be a material portion of our operating expenses and, as a result of the Mergers, will increase significantly in future periods. Litigation expense may fluctuate between periods because of planned or ongoing litigation, as described in Part II, Item 1 – Legal Proceedings, and because of litigation planned for or initiated from time to time in the future in order to enforce and protect our intellectual property and contract rights.

Operating income for the three months ended June 30, 2020 was $53.1 million compared to operating income of $4.3 million for the three months ended June 30, 2019, with the variance due to the reasons stated above.

Operating income for the six months ended June 30, 2020 was $104.5 million compared to operating income of $5.9 million for the six months ended June 30, 2019, with the variance due to the reasons stated above.

Liquidity and Capital Resources

	As of	
(in thousands, except for percentages)	**June 30, 2020**	**December 31, 2019**
Cash and cash equivalents	$ 174,013	$ 74,551
Short-term investments	25,564	46,926
Total cash, cash equivalents and short-term investments	$ 199,577	$ 121,477
Percentage of total assets	7%	12%

	Six Months Ended	
	June 30, 2020	**June 30, 2019**
Net cash from operating activities	$ 67,242	$ 68,893
Net cash from investing activities	$ 135,723	$ (11,691)
Net cash from financing activities	$ (103,598)	$ (120,319)

Our primary sources of liquidity and capital resources are our operating cash flows and our investment portfolio. Cash, cash equivalents and short-term investments were $199.6 million at June 30, 2020, an increase of $78.1 million from $121.5 million at December 31, 2019. This increase resulted primarily from $67.2 million in cash generated from operations, $1,011.3 million in net long-term debt proceeds received, and $117.4 million in cash acquired from TiVo as a result of the Mergers, which was partially offset by $20.2 million in dividends paid, $20.9 million in repurchases of common stock and $1,078.6 million in repayment of the combined legacy indebtedness of the companies. Cash and cash equivalents was $174.0 million at June 30, 2020, an increase of $99.4 million from $74.6 million at December 31, 2019.

Cash flows provided by operations were $67.2 million for the six months ended June 30, 2020, primarily due to our net loss of $4.3 million being adjusted for non-cash items of depreciation of $5.1 million, amortization of intangible assets of $54.6 million, stock-based compensation expense of $16.5 million, loss on debt extinguishment of $8.3 million and $11.3 million in changes in operating assets and liabilities. These increases were partially offset by a reduction of $28.9 million in deferred income taxes.

Cash flows provided by operations were $68.9 million for the six months ended June 30, 2019, primarily due to our net loss of $31.6 million being adjusted for non-cash items of depreciation of $3.4 million, amortization of intangible assets of $50.8 million, stock-based compensation expense of $14.8 million and $55.9 million in changes in operating assets and liabilities. These increases were partially offset by a reduction of $24.2 million in deferred income taxes.

Net cash provided by investing activities was $135.7 million for the six months ended June 30, 2020, primarily related to maturities and sales of securities of $20.7 million and net cash acquired in the Mergers of $117.4 million, partially offset by $1.9 million in capital expenditures.

Net cash used in investing activities was $11.7 million for the six months ended June 30, 2019, primarily related to the purchases of short-term available-for-sales securities of $22.7 million and $6.5 million in capital expenditures partially offset by maturities and sales of securities of $17.5 million.

Net cash used in financing activities was $103.6 million for the six months ended June 30, 2020 principally due to $1,078.6 million in repayment of indebtedness, $20.2 million in dividends paid, and $20.9 million in repurchases of common stock, partially offset by $1,011.3 million in net long-term debt proceeds and $4.8 million in proceeds due to the issuance of common stock under our employee stock option programs and employee stock purchase plans.

Net cash used in financing activities was $120.3 million for the six months ended June 30, 2019 principally due to $100.0 million in a partial pay-down of debt principal, $19.7 million in dividends paid and $4.3 million in repurchases of common stock, partially offset by $3.6 million in proceeds due to the issuance of common stock under our employee stock option programs and employee stock purchase plans.

The primary objectives of our investment activities are to preserve principal and to maintain liquidity while at the same time capturing a market rate of return. To achieve these objectives, we maintain a diversified portfolio of securities including money market funds and debt securities including corporate bonds and notes, municipal bonds and notes, commercial paper, treasury and agency notes and bills and certificates of deposit. We invest excess cash predominantly in high-quality investment grade debt securities with less than three years to maturity. Our marketable debt securities are classified as available-for-sale ("AFS") with credit losses recognized as a credit loss expense and non-credit related unrealized gains and losses, net of tax, recorded in accumulated other comprehensive income or loss. The fair values for our securities are determined based on quoted market prices as of the valuation date and observable prices for similar assets. In the third quarter of 2018, we initiated an equity position in Onkyo Corporation ("Onkyo"), a publicly traded company listed on the JASDAQ market of the Tokyo Stock Exchange. Under Topic 321, we measure equity securities with readily determinable market value at fair value and recognize any changes in fair value in net income (loss). On July 5, 2019, we sold approximately 2.8 million shares of Onkyo stock, and in June 2020, we sold the remaining 4.2 million shares of Onkyo stock and realized an insignificant amount of gain and approximately $0.7 million in loss on this investment in the three and six months ended June 30, 2020, respectively.

For AFS debt securities in an unrealized loss position, we first assess whether we intend to sell, or it is more-likely-than-not that we will be required to sell the security before recovery of its amortized cost basis. If either of the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value through income. For AFS debt securities that do not meet the aforementioned criteria, we evaluate whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, we consider the extent to which fair value is less than amortized cost, any changes to the rating of the security by a rating agency, and adverse conditions specifically related to the security, among other factors. If this assessment indicates that a credit loss exists, the present value of cash flows expected to be collected from the security are compared to the amortized cost basis of the security. If the present value of cash flows expected to be collected is less than the amortized cost basis, a credit loss exists and an allowance for credit losses is recorded for the credit loss, limited by the amount that the fair value is less than the amortized cost basis. Any impairment that has not been recorded through an allowance for credit losses is recognized in accumulated other comprehensive income or loss. For the three and six months ended June 30, 2020, we did not recognize a provision for credit loss expense related to our AFS debt securities. For the three and six months ended June 30, 2019, we did not record any impairment charges related to our AFS debt securities.

On December 1, 2016, we entered into a Credit Agreement with Royal Bank of Canada ("RBC") which provided for a $600.0 million seven-year term B loan facility. The Term B Loan Facility was scheduled to mature on November 30, 2023. Upon the closing of the Credit Agreement, we borrowed $600.0 million under the Term B Loan facility. These proceeds were used on December 1, 2016, together with cash and cash equivalents, to finance the acquisition of DTS. The obligations under the Credit Agreement were guaranteed by substantially all of our assets pursuant to the Security Agreement, dated December 1, 2016, among us, RBC, as collateral agent, and the other pledgors party thereto. On January 23, 2018, we completed a repricing of our debt, reducing the borrowing rate by 75 basis points, and paid down $100.0 million in principal balance. During 2019, we made three voluntary principal payments totaling $150.0 million. Upon consummation of the Mergers on June 1, 2020, we repaid the full remaining balance of $344.0 million under the Credit Agreement. In addition, upon consummation of the Mergers on June 1, 2020, we repaid $734.6 million of assumed TiVo debt with the proceeds from a new borrowing of $1,050 million discussed below.

On June 1, 2020, in connection with the consummation of the Mergers, we entered into a Credit Agreement (the "2020 Credit Agreement") by and among us, the lenders party thereto and Bank of America, N.A., as administrative agent and collateral agent. The 2020 Credit Agreement provides for a five-year senior secured term loan B facility in an aggregate principal amount of $1,050 million (the "2020 Term B Loan Facility"). The interest rate applicable to loans outstanding under the 2020 Term B Loan Facility is equal to, at our option, either (i) a base rate plus a margin of 3.00% per annum or (ii) LIBOR plus a margin of 4.00% per annum. Commencing on September 30, 2020, the 2020 Term B Loan Facility will amortize in quarterly installments equal to (i) with respect to repayments occurring on or prior to June 1, 2023, 1.25% of the original principal amount of the

2020 Term B Loan Facility and (ii) with respect to repayments occurring after June 1, 2023 and prior to June 1, 2025, 1.875% of the original principal amount of the 2020 Term B Loan Facility, with the balance payable on the maturity date of the 2020 Term B Loan Facility (in each case subject to adjustment for prepayments). The 2020 Term B Loan Facility will mature on June 1, 2025. Upon the closing of the 2020 Credit Agreement, we borrowed $1,050 million under the 2020 Term B Loan Facility. Net proceeds were used on June 1, 2020, together with cash and cash equivalents, to repay existing indebtedness of the combined Company, including the aforementioned Term B Loan Facility with RBC.

At June 30, 2020, $1,050.0 million was outstanding under the 2020 Term B Loan Facility with an interest rate, including amortization of debt issuance costs, of 4.8%. Interest is payable monthly and nominal principal payments are due quarterly effective September 2020. We have future minimum principal payments for our debt of $52.5 million annually through 2022, then $72.2 million and $78.8 million in 2023 and 2024, respectively, with the remaining principal balance due in 2025. We are obligated to pay a portion of excess cash flow on an annual basis beginning March 31, 2022 based on certain ratios and our excess cash flow generated for the immediately preceding fiscal year. The 2020 Term B Loan Facility contains customary covenants, and as of June 30, 2020 we were in full compliance with such covenants.

In August 2007, Xperi's Board of Directors authorized a plan to repurchase Xperi's outstanding shares of common stock dependent on market conditions, share price and other factors. This authorization was terminated upon closing of the Mergers. On June 12, 2020, our Board of Directors authorized a new stock repurchase program (the "new plan") providing for the repurchase of up to $150.0 million of our common stock dependent on market conditions, share price and other factors. In June 2020, we repurchased a total of approximately 1.1 million shares of common stock at an average price of $13.92 per share for a total cost of $15.0 million. As of June 30, 2020, the total remaining amount available for repurchase was $135.0 million. We may continue to execute authorized repurchases from time to time under the new plan.

In July 2020, our Board of Directors reviewed the Company's expected capital allocation priorities and consequently authorized payment of a quarterly dividend of $0.05 per share. We anticipate that all quarterly dividends will be paid out of cash, cash equivalents and short-term investments.

From 2017 through the second quarter of 2020, we generated approximately $519 million of cash flows from operating activities. While we expect to continue to generate cash flows from operating activities for the remainder of 2020, the COVID-19 pandemic presents significant uncertainties to the level of such cash flows as compared to prior years and as compared to our previous forecasts. Additionally, one-time costs in connection with the Mergers and subsequent integration of the two legacy businesses will impact operating cash flow for the duration of 2020. Currently a significant portion of our anticipated revenue for 2020 is derived from fixed-fee and minimum-guarantee arrangements, primarily from large, well-capitalized customers which we believe somewhat mitigates the risks to our business. We have taken actions to manage cash flows by reducing discretionary spending and other variable costs, delaying employee hiring, and closely monitoring receivables and payables.

We believe that based on current levels of operations and anticipated growth, our cash from operations, together with cash, cash equivalents and investments currently available, will be sufficient to fund our operations, debt service, dividends, stock repurchases and acquisition needs for at least the next twelve months. Poor financial results, unanticipated expenses, unanticipated acquisitions of technologies or businesses or unanticipated strategic investments could give rise to additional financing requirements sooner than we expect. There can be no assurance that equity or debt financing will be available when needed or, if available, that such financing will be on terms satisfactory to us and not dilutive to our then-current stockholders.

Contractual Cash Obligations

Our contractual obligations as of June 30, 2020 were as follows (in thousands):

	Payments due by period				
	Total	**2020**	**2021-2022**	**2023-2024**	**Thereafter**
Long-term debt (1)	$ 1,050,048	$ 26,250	$ 105,048	$ 150,938	$ 767,812
Purchase obligations	39,972	10,396	21,379	3,461	4,736
Operating lease commitments (2)	105,666	10,976	40,691	31,096	22,903
Total	$ 1,195,686	$ 47,622	$ 167,118	$ 185,495	$ 795,451

(1) Under our debt agreement, our debt bears a variable interest rate. See "Note 9 – Debt" of the Notes to Condensed Consolidated Financial Statements for additional detail.
(2) Refer to "Note 14 – Leases" of the Notes to Condensed Consolidated Financial Statements for additional detail.

Our operating lease obligations represent aggregate future minimum lease payments under non-cancelable facility and equipment operating leases. For our facilities leases, rent expense charged to operations differs from rent paid because of scheduled rent increases. Rent expense is calculated by amortizing total rental payments on a straight-line basis over the lease term. See “Note 14 – *Leases*” of the Notes to Condensed Consolidated Financial Statements for additional information.

As of June 30, 2020, we had accrued $101.5 million of unrecognized tax benefits in long-term income taxes payable related to uncertain tax positions, which includes $1.9 million of accrued interest and penalties. At this time, we are unable to reasonably estimate the timing of the long-term payments or the amount by which the liability will increase or decrease over time. If we are successful in receiving our South Korean withholding tax refund of $98.4 million, net of foreign exchange loss, then $75.1 million of unrecognized tax benefit would be payable to the U.S. tax authorities. These amounts, which are included in our financial statements, have not been included in the table above.

Under certain other contractual arrangements, the Company may be obligated to pay up to approximately $10.9 million over an estimated period of approximately four years if certain milestones are achieved.

See “Note 15 - *Commitments and Contingencies*” of the Notes to Condensed Consolidated Financial Statements for additional detail.

Off-Balance Sheet Arrangements

As of June 30, 2020, we did not have any off-balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

Critical Accounting Policies and Estimates

Our significant accounting policies are detailed in “Note 2 - Summary of Significant Accounting Policies” in the Form 10-K for the year ended December 31, 2019. Certain updates to our revenue recognition policy as a result of the Mergers are provided in “Note 3 - Revenue” of the Notes to Condensed Consolidated Financial Statements. See “Note 2 – Summary of Significant Accounting Policies” of the Notes to Condensed Consolidated Financial Statements for additional detail. For a discussion of our critical accounting policies and estimates, see Part II, Item 7 – Management’s Discussion and Analysis of Financial Condition and Results of Operations in the Form 10-K.

Recent Accounting Pronouncements

See “Note 2 - *Summary of Significant Accounting Policies*” of the Notes to Condensed Consolidated Financial Statements for a full description of recent accounting pronouncements including the respective expected dates of adoption.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

With the exception noted below, see Part II, Item 7A – *Quantitative and Qualitative Disclosures About Market Risk* in the Form 10-K for a discussion of the Company’s market risk.

Interest Rate Risk from Variable Rate Indebtedness

As of June 30, 2020, we had $1,050 million of outstanding indebtedness that was subject to floating interest rates. Changes in economic conditions outside of our control could result in higher interest rates, thereby increasing our interest expense and reducing the funds available for capital investment, operations or other purposes. At June 30, 2020, a 1% increase in the effective interest rate on our outstanding debt throughout a one-year period would result in an annual increase in our interest expense of approximately $10.5 million. Any significant increase in our interest expense could negatively impact our results of operations and cash flows and also our ability to pay dividends in the future. If the U.S. Federal Reserve raises its benchmark interest rate, any increases would likely impact the borrowing rate on our outstanding indebtedness, and increase our interest expense, comparably.

Item 4. Controls and Procedures

Attached as exhibits to this Form 10-Q are certifications of Xperi Holding Corporation’s Chief Executive Officer and Chief Financial Officer, which are required in accordance with Rule 13a-14 of the Exchange Act. This “Controls and Procedures” section includes information concerning the controls and controls evaluation referred to in the certifications and it should be read in conjunction with the certifications, for a more complete understanding of the topics presented.

Evaluation of Controls and Procedures

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed pursuant to the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this report (the evaluation date). Based on this evaluation, our principal executive officer and principal financial officer concluded as of the evaluation date that our disclosure controls and procedures were effective to provide reasonable assurance that the information relating to Xperi Holding Corporation, including our consolidated subsidiaries, required to be disclosed in our SEC reports (i) is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to Xperi Holding Corporation's management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Change in Internal Control over Financial Reporting

On June 1, 2020, we completed our Mergers with TiVo and have implemented new processes and internal controls to assist us in the preparation and disclosure of financial information. Given the significance of the TiVo acquisition and the complexity of systems and business processes, we intend to exclude the acquired TiVo business from our assessment and report on internal control over financial reporting for the year ending December 31, 2020. Other than as discussed above, there were no changes in our internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act, during our most recently completed fiscal quarter that materially affected or are reasonably likely to materially affect our internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

In the normal course of our business we are involved in legal proceedings. In the past, we have litigated to enforce our respective patents and other intellectual property rights, to enforce the terms of license agreements, to protect trade secrets, to determine the validity and scope of the proprietary rights of others and to defend ourselves or our customers against claims of infringement or invalidity. We expect to continue to be involved in similar legal proceedings in the future, including proceedings regarding infringement of our patents, and proceedings to ensure proper and full payment of royalties by licensees under the terms of our license agreements.

Other than to the extent the proceedings described below have concluded, we cannot predict the outcome of any of the proceedings described below. An adverse decision in any of these proceedings could significantly harm our business and our consolidated financial position, results of operations, and cash flows.

Merger Litigation

On March 3, 2020, a lawsuit was filed by a purported stockholder of TiVo in connection with the proposed merger between TiVo and Xperi. The lawsuit was brought as a putative class action and is captioned Jordan Rosenblatt v. TiVo Corporation, et al., No. 1:20-cv-00327 (D. Del. filed Mar. 3, 2020). The complaint named as defendants Xperi, XRAY-TWOLF HoldCo Corporation, XRAY Merger Sub Corporation, TWOLF Merger Sub Corporation, TiVo, and the TiVo Board. The complaint alleged violations of Section 14(a) of the Securities Exchange Act of 1934 (the “Exchange Act”) and Rule 14a-9 promulgated thereunder against the individual defendants and TiVo, and alleged a claim under Section 20(a) of the Exchange Act against the individual defendants and Xperi, because the joint proxy statement/prospectus filed on February 18, 2020 purportedly omitted or misrepresented material information regarding the proposed merger between TiVo and Xperi. The complaint sought injunctive relief, rescission or rescissory damages, and an award of plaintiffs’ costs, including attorneys’ fees and expenses. The complaint also sought dissemination of a registration statement that does not contain any untrue or misleading statements of material fact and a declaration that defendants violated the Exchange Act. On May 20, 2020, the plaintiff voluntarily dismissed the complaint. This matter is now concluded.

On May 15, 2020, a lawsuit was filed by a purported stockholder of Xperi in connection with the merger between TiVo and Xperi. The lawsuit was brought as a putative class action and is captioned Local 464A United Food and Commercial Workers Union Pension Fund v. Darcy Antonellis, et al., No. 2020-0376-JRS (Del. Ch. filed May 15, 2020). The complaint names as defendants the Xperi Board members. The complaint alleges breaches of fiduciary duty against the Xperi Board members for failing to properly consider and disclose the non-binding proposal from Metis Ventures LLC to acquire all of the outstanding equity of Xperi for cash, violating their continuing fiduciary duty to evaluate the TiVo merger in light of the COVID-19 pandemic, and failing to adequately disclose material facts germane to the vote on the proposed merger between TiVo and Xperi. On June 29, 2020, the Court granted the plaintiff's motion for leave to supplement the complaint; the supplement contained additional allegations regarding the failure to disclose material information. The complaint seeks a judgment declaring that the Xperi Board members breached their fiduciary duties, awarding equitable relief that deprives the Xperi Board members of all benefits they would realize as a result of the merger between TiVo and Xperi, awarding class damages, awarding plaintiff's attorneys’ fees, expenses, and costs, and awarding any further relief the court deems just and proper. Xperi believes the complaint is without merit and intends to vigorously defend against it.

Patent Infringement Litigation

From time-to-time in the ordinary course of our patent licensing business, we are required to engage in litigation to protect our intellectual property from infringement. While litigation is never our preference and we prefer to reach mutually agreeable commercial licensing arrangements with third parties, it is sometimes a necessary step to effectively protect our investment in patented technology. As a result of these lawsuits, defendants have often filed *Inter Partes* Review (“IPR”) petitions with the U.S. Patent Office’s Patent Trial and Appeal Board (and other similar post-grant proceedings outside of the U.S.) seeking to invalidate one or more of the patents-in-suit. We are currently engaged in multiple lawsuits with several third parties.

Comcast Patent Infringement Litigation

Since April 1, 2016, TiVo’s subsidiary Rovi Corporation and various of its subsidiaries (collectively, “Rovi”) have been involved in a series of lawsuits against Comcast Corporation (“Comcast”) pending in the United States International Trade Commission (the “ITC”) and United States District Courts. The lawsuits arose when Comcast’s twelve-year patent license with Rovi (and its predecessors) expired on March 31, 2016. After being unable to agree on terms for a renewal before the license

expired, Rovi initially filed multiple lawsuits against Comcast, and has since filed additional lawsuits against Comcast in various venues in the United States.

To date, Rovi has filed three ITC investigations (along with four companion district court cases asserting the same patents) and two standalone cases in various United States District Courts involving a total of 37 patents. Comcast has filed IPRs against all of the patents involved in these actions.

In the first ITC investigation, the ITC issued (1) a limited exclusion order prohibiting the unlicensed entry of certain digital video receivers and hardware and software components thereof that infringed two particular Rovi patents and (2) a cease and desist order prohibiting Comcast from conducting in the United States several enumerated activities, including, among others, selling and leasing any infringing set top boxes that it had already imported. In addition, the ITC found certain of Rovi's asserted patents either not infringed by Comcast or its set top box suppliers, lacking a domestic industry or invalid. All appeals of the first ITC investigation have been exhausted and the ITC's decision is now final.

In the second ITC investigation, the ITC issued (1) a limited exclusion order prohibiting the entry into the United States of infringing digital video receivers and related hardware and software components that infringed one of Rovi's asserted patents, and (2) a cease and desist order directed to Comcast. The ITC also found certain of Rovi's asserted patents either not infringed by Comcast, lacking a domestic industry or invalid. Both Rovi and Comcast have filed appeals of the ITC's final determination in the second ITC investigation, which appeals are pending.

In the third ITC investigation, the Administrative Law Judge issued her Final Initial Determination in which she found that Comcast's X1 platform infringes two Rovi patents and recommended the issuance of a limited exclusion order and cease and desist order. The deadline for the parties to file petitions for review with the ITC, seeking review of the ALJ's Final Initial Determination, is August 10, 2020. The ITC's Final Determination is currently due on November 30, 2020.

All of the pending district court cases that Rovi has filed against Comcast are stayed pending either (a) the final outcomes in their corresponding ITC cases, or (b) final rulings (including all available appeals) of pending IPRs, with one exception being that one case is proceeding with respect to a single patent. A trial date has not been set yet in that case.

Videotron Patent Infringement Litigation

On June 23, 2017, Rovi Guides, Inc. and TiVo Solutions Inc. (together, "TiVo") filed a patent infringement complaint against Videotron Ltd. and Videotron G.P. (together, "Videotron") in Toronto, Canada, alleging infringement of six patents. Videotron was a prior licensee under the Rovi patent portfolio. The first week of trial on four patents was held the week of March 9, 2020. The Federal Court of Canada closed due to COVID-19 on March 16, 2020, and the trial was temporarily stayed. The trial resumed on May 25, 2020, conducted remotely by video, and concluded on June 17, 2020. Written closing submissions are due September 21, 2020. Closing oral argument is scheduled for October 14-16, 2020. There is no set date for the court to issue its verdict.

Bell and Telus Patent Infringement Litigation

On January 19, 2018, TiVo filed a patent infringement complaint against Bell Canada (and four of its affiliates) in Toronto, Canada, alleging infringement of six patents. On February 2, 2018, TiVo filed a patent infringement complaint against Telus Corporation (and two of its affiliates) in Toronto, Canada, alleging infringement of the same six patents. Bell Canada and Telus were previously indirectly licensed to some of Rovi's patents through a prior agreement between Rovi and one of their suppliers. The Bell and Telus cases are being heard together for purposes of pre-trial and trial proceedings. On August 27, 2019, the court issued an order bifurcating the liability phase from the damages phase of the case. There is no set trial date or procedural schedule for the damages phase of the cases. The liability and injunction trial on four patents was held from July 13 – August 6, 2020. Written closing submissions are due October 13, 2020. Closing oral argument is scheduled for October 29-30, 2020. There is no set date for the court to issue its verdict.

NVIDIA Patent Infringement Litigation

On May 8, 2019, Invensas Corporation and Tessera Advanced Technologies, Inc. filed a complaint against NVIDIA Corporation ("NVIDIA") in the United States District Court for the District of Delaware, alleging infringement of five patents, and requesting, among other things, that NVIDIA be ordered to pay compensatory damages in an amount no less than a reasonable royalty. NVIDIA answered the complaint on July 1, 2019 and subsequently moved to transfer the case to the United States District Court for the Northern District of California. The court denied NVIDIA's motion to transfer on September 17, 2019. A Markman hearing is scheduled for September 14, 2020. A jury trial is scheduled to begin on September 20, 2021. NVIDIA has filed IPRs against several of the patents-in-suit.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. We are providing the following information regarding updates to the previously disclosed risk factors in the SEC filings of Xperi and TiVo prior to the consummation of the merger.

Risks Relating to Integration of the Combined Company and Planned Separation of the IP and Product Businesses

We may not be able to successfully integrate and combine the businesses of Xperi Corporation and TiVo Corporation following the completion of the Mergers and we may not realize the anticipated benefits from the Mergers.

On June 1, 2020, we completed the previously announced Mergers between Xperi Corporation (“Xperi.”) and TiVo Corporation (“TiVo”) as contemplated by the Agreement and Plan of Merger and Reorganization, dated as of December 18, 2019, as amended on January 31, 2020, by and among us, Xperi, TiVo and other parties thereto. The integration and combination of the separate operations of the combined businesses is a complex and time consuming process and may require substantial resources and effort. We may face significant challenges in consolidating our combined operations, integrating technologies, procedures, and policies, as well as addressing the different corporate cultures. If we are not successfully integrated, the anticipated benefits of the Mergers may not be realized fully (or at all) or may take longer to realize than expected.

We must successfully combine the businesses of Xperi and TiVo in a manner that permits expected cost savings and synergies to be realized. In addition, we must achieve the anticipated savings and synergies in a timely manner and without adversely affecting current revenue and investments in future growth. If we are not able to successfully achieve these objectives (including in a manner that does not negatively affect any contemplated business separation), the anticipated benefits of the Mergers may not be realized fully or at all or may take longer to realize than expected. We may face significant challenges in implementing such integration, including without limitation:

- difficulties integrating product technologies in a manner that creates technical synergies or that yields new or improved product applications in targeted markets;
- latent impacts resulting from the diversion of management team’s attention from ongoing business concerns as a result of the devotion of management’s attention to the Mergers and performance shortfalls of the respective businesses;
- ongoing diversion of the attention of management from the operation of the combined company’s business as a result of any contemplated business separation;
- difficulties in achieving anticipated cost savings, synergies, business opportunities and growth prospects;
- the possibility of faulty assumptions underlying expectations regarding the integration process, including with respect to the intended tax efficient transactions;
- unanticipated issues, costs and strained resources in integrating information technology, communications programs, financial procedures and operations, and other systems, procedures and policies;
- difficulties in managing a larger combined company, addressing differences in business culture and retaining key personnel and employees;
- unanticipated changes in applicable laws and regulations;
- managing tax costs or inefficiencies associated with integrating the operations of the combined company and any contemplated tax efficient separation transaction;
- failure to maintain relationships with existing customers, including customers who may be unfamiliar with the combined company and may perceive conflict with the combined intellectual property business;
- failure to accurately forecast and communicate the long-term value or profitability of either business, including as a result of any failure to implement the business strategy
- uncertainty that employees may experience about their roles within the combined company and following any contemplated business separation, which may have an additional adverse effect on our ability to attract or retain key management personnel and other key employees; and
- coordinating geographically separate organizations.

Some of these factors will be outside of our control and any one of them could result in increased costs and diversion of management’s time and energy, as well as decreases in the amount of expected revenue which could materially impact our business, financial conditions and results of operations. The integration process and other disruptions resulting from the Mergers may also adversely affect our relationships with employees, suppliers, customers, distributors, licensors and others, and difficulties in integrating the separate businesses or regulatory functions could harm the reputation of the combined company. In addition, we may not be able to persuade markets to adopt new products or technologies developed as a result of the integration, which may cause a decline of our revenue. If we are not able to adequately address integration challenges, we

may be unable to successfully integrate our operations, effect any contemplated business separation or realize the anticipated benefits of the transaction.

We will incur significant costs in connection with the integration of the combined company.

We are required to integrate a large number of processes, policies, procedures, operations, technologies and systems in connection with the consummation of the Mergers. While we have assumed that a certain level of expenses would be incurred in connection with the Mergers and post-merger activities, there are many factors beyond our control that could affect the total amount of, or the timing of, anticipated expenses with respect to the integration and implementation of the combined businesses.

There may also be additional unanticipated significant costs in connection with the Mergers that we may not recoup. These costs and expenses could reduce the benefits and additional revenue and income we expect to achieve from the Mergers. Although we expect that these benefits will offset the transaction expenses and implementation costs over time, this net benefit may not be achieved in the near term or at all.

Our future results will suffer if we do not manage effectively our expanded operations following the Mergers.

Our future success depends, in part, upon our ability to manage this expanded business, which may pose substantial challenges for management, including but are not limited to, challenges related to the management and monitoring of new operations, expanded managerial systems and financial controls and associated increased costs and complexity. We may also face significant challenges in training and managing the combined employee base and meeting demand and quality standards required by existing and potential customers. There can be no assurance that the combined company will be successful or that it will realize the expected operating efficiencies, cost savings, revenue enhancements and other benefits currently anticipated from the Mergers.

We have in the past expanded our operations, domestically and internationally, and may continue to do so through both internal growth and acquisitions. If our growth continues, it may place a significant strain on our management team and on our operational and financial systems, procedures, and controls. Our future success will depend, in part, upon the ability of our management team to manage any growth effectively, requiring our management to:

- recruit, hire, and train additional personnel;
- implement and improve our operational and financial systems, procedures, and controls;
- maintain our cost structure at an appropriate level based on the royalties, revenue and cash we forecast and generate;
- manage multiple concurrent development projects; and
- manage operations in multiple time zones with different cultures and languages.

If we are unable to effectively manage our growth or we are unsuccessful in recruiting and retaining personnel, our business and operating results will be harmed.

We may not be able to rationalize and manage effectively our disparate business operations, which may cause us to dispose of or discontinue product lines, technologies, assets or operations if they do not fit into the strategic vision or meet forecasted results.

While we believe that the product and IP licensing businesses of the combined company are complementary and create significant synergy, our future efforts to rationalize the disparate business operations could require our management to refocus on certain business operations while disinvesting in others. We intend to integrate the respective product and licensing businesses and operate them as separate business units in order to facilitate a potential separation of these units at a later date. Additionally, as business strategy and product markets continue to evolve, we may dispose, discontinue, or divest product lines or business divisions. Disposing or discontinuing existing product lines or business divisions, or separating business units, provides no assurance that operating expenses will be reduced or will not cause us to incur material charges associated with such decision. Furthermore, the disposition or discontinuance of an existing product line or business division, or separation or spinoff of a business unit, entails various risks, including the risk of not being able to obtain a purchaser, or, if obtained, the purchase price may not be equal to at least the net asset book value for the product line or business unit, or the value that investors place on it as reflected by our stock price. We may not be able to achieve any separation of the combined companies’ product and licensing businesses despite our current consideration of such a separation. Other risks of such actions include adversely affecting employee morale, managing the expectations of, and maintaining good relations with, customers of disposed or discontinued product lines or business divisions, which could prevent selling other products to them. We may also incur other significant liabilities and costs associated with disposal or discontinuance of product lines or business divisions, or

separation of business units, including employee severance costs, relocation expenses, and impairment of lease obligations and long-lived assets. The effects of such actions may adversely impact our business operations and financial results.

We may not be able to complete the contemplated business separation in a timely manner or at all, and even if such separation occurs, we may not achieve the expected benefits (including the tax treatment) of such transaction.

As previously disclosed, we intend to pursue a separation of the combined company's product business and IP licensing business through a tax-efficient transaction, resulting in two independent, publicly traded companies. We are currently in the planning stage for such separation, which is subject to the approval of our board of directors. In the event that our board decides to proceed with any contemplated business separation transaction, we currently anticipate that such contemplated business separation transaction, if undertaken, would be effectuated through a pro-rata spin-off transaction intended to qualify as tax-free under Section 355 of the Code, in which our stockholders, at such time, would receive shares of capital stock in the resulting spin-off company. Our board may ultimately determine to abandon any contemplated business separation transaction, and such determination could have an adverse impact on the value of our company. Additionally, there are many determinations with respect to undertaking a contemplated business separation that, by their nature, cannot be determined until we fully understand our combined business operations, including definitive determinations with regard to the capital structure of the two businesses and allocation of liabilities among them. As such, there are many factors that could impact the structure or timing of, the anticipated benefits from, or determination to ultimately proceed with, any contemplated business separation, including, among others, global economic conditions, instability in credit markets, declining consumer and business confidence, fluctuating commodity prices and interest rates, volatile exchange rates, tax considerations, and other challenges that could affect the global economy, specific market conditions in one or more of the industries of the businesses proposed to be separated, and changes in the regulatory or legal environment. Such changes could adversely impact the value of a contemplated business separation transaction to the combined company's stockholders. Additionally, to the extent our board determines to proceed with any contemplated business separation, the consummation of such transaction is a complex, costly and time-consuming process, and there can be no guarantee that the intended benefits (including the tax treatment), of such transaction will be achieved. An inability to realize the full extent of the anticipated benefits (including the tax treatment) of any contemplated business separation, as well as any delays encountered in the process, could have an adverse effect upon the revenue, level of expenses and operating results of the product business, the IP licensing business and/or the combined company.

Risks Relating to Our Business Operations

Our business and results of operations have been, and are expected to continue to be, impacted by the global COVID-19 pandemic.

Our business and results of operations have been adversely affected by the global COVID-19 pandemic and related events and we expect its impact to continue. Given the ongoing and dynamic nature of the circumstances, it is difficult to predict the full impact of the COVID-19 pandemic on our businesses, and there is no guarantee that we will be able to address its adverse impacts fully or effectively. The impact to date has included periods of significant volatility in various markets and industries. The volatility has had, and we anticipate it will continue to have, an adverse effect on our customers and on our business, financial condition and results of operations, and may result in an impairment of our long-lived assets, including goodwill, increased credit losses and impairments of investments in other companies. In particular, the automotive market, as well as the broad consumer electronics industries, have been and we anticipate will continue to be impacted by the pandemic and/or other events beyond our control, and further volatility could have an additional negative impact on these industries, customers, and our business. For example, we anticipate approximately a 20-30% decline in our royalty revenue in 2020 from our products sold to the automotive market, such as HD Radio, as compared to the prior year. In addition, the COVID-19 pandemic may impact the financial conditions of our customers who may not be able to satisfy their obligations under our agreements timely or at all. For example, we recorded, in the first quarter of 2020, an incremental provision for credit losses of approximately $2.0 million due to heightened risk of nonpayment on existing accounts receivable as a result of the impaired financial condition and liquidity positions of certain of our customers.

In addition, actions by United States federal, state and foreign governments to address the COVID-19 pandemic, including travel bans, stay-at-home orders and school, business and entertainment venue closures, also had a significant adverse effect on the markets in which we conduct our businesses. COVID-19 poses the risk that our workforce, suppliers, and other partners may be prevented from conducting normal business activities for an indefinite period of time, including due to shutdowns or stay-at-home orders that may be requested or mandated by governmental authorities. We also implemented policies to allow our employees to work remotely as a result of the pandemic as we reviewed processes related to workplace safety, including social distancing and sanitation practices recommended by the Centers for Disease Control and Prevention. The impacts of the COVID-19 pandemic could also cause delays in obtaining new customers and executing renewals and could also impact our business as consumer behavior changes in response to the slowed economic conditions. Furthermore, our integration effort following the Mergers may be delayed or interrupted due to the operational challenges and various restrictions and limitations

imposed on us as result of the COVID-19 pandemic, which may adversely affect the success of the integration and anticipated benefits of the Mergers.

The extent of impacts resulting from the COVID-19 pandemic and other events beyond our control will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of the pandemic and actions taken to contain the coronavirus or its impact, among others. Even after the pandemic has subsided and economic activities gradually reopen and increase, we may continue to experience material and adverse impacts to our business, operating results, and financial condition as a result of the pandemic's lasting global economic impact, including any recession that has occurred or may occur in the future. The ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our applicable business, operations or the global economy.

We enter into license agreements that have fixed expiration dates and if, upon expiration or termination, we are unable to renew or replace such license agreements on terms favorable to us, our results of operations could be harmed.

We enter into license agreements that have fixed expiration dates. Upon expiration of such agreements we need to renew or replace these agreements in order to maintain our royalty base. If we are unable to replace the royalties from an expiring license, either through a renewal or with similar royalties from other customers, our results of operations could be adversely impacted as compared to periods prior to such expiration.

Furthermore, we may not be able to continue licensing customers on terms favorable to us, under the existing terms or at all, which would harm our results of operations. While we have expanded our licensable technology portfolio through internal development and patents purchased from third parties, there is no guarantee that these measures will lead to continued royalties. If we fail to continue to do business with our current licensees, our business would be materially adversely affected.

Our contract with Comcast expired in March 2016 and we filed litigation against Comcast for patent infringement in April 2016. The expiration of our license with Comcast, as well as litigation initiated against Comcast, has resulted in a reduction of current revenue and an increase in litigation costs. The length of time that Comcast is out of license prior to executing a license or reaching a resolution is unknown. In addition, the amount of revenue recognized in the reporting period a license is executed or resolution is reached is uncertain and will depend on a variety of factors including terms such as duration, pricing, licensed products and fields of use, and the duration of the out-of-license period. In addition, while litigation costs may increase, whether the litigation initiated against Comcast will cause total expenses to increase or decrease longer-term will be a function of several factors, including the length of time Comcast is out of license. Furthermore, we cannot assure you that these license agreements with major pay TV service providers will not be terminated under certain circumstances. If that occurs and we are unable to replace the revenue associated with these agreements through similar or other business arrangements, our revenue and profit margins would decline and our business would be harmed.

The nature of some of our business relationships may restrict our ability to operate freely in the future and could be interpreted in a manner that adversely affects revenues, including from licensing, under those agreements.

From time to time, we have engaged and may engage in the future in discussions with other parties concerning business relationships, which have included and may in the future include exclusivity provisions (such as geographic or product specific limitations), most favored customer limitations, and patent licensing arrangements. While we believe that such business relationships have historically enhanced our ability to finance and develop our business model or otherwise were justified by the terms of the particular relationship, the terms and conditions of such business relationships may place some restrictions on the operation of our business, including where we operate, who we work with, and what kinds of activities we may engage in, in the future. Additionally, some of our license agreements contain "most favored nation" clauses. These clauses typically provide that if we enter into an agreement with another licensee on more favorable terms, we must offer some of those terms to our existing licensees. We have entered into a number of license agreements with terms that differ in some respects from those contained in other agreements. These agreements may obligate us to provide different, more favorable, terms to licensees, which could, if applied, result in lower revenues or otherwise adversely affect our business, financial condition, and results of operations. While we believe that we have appropriately complied with the most favored nation terms included in our license agreements, these contracts are complex and other parties could reach a different conclusion that, if correct, could have an adverse effect on our financial condition or results of operations.

The success of our patent licensing business is dependent on the quality of our patent assets and our ability to create and implement new technologies or expand our licensable technology through acquisitions.

We derive a significant portion of our revenue from patent licenses and royalties, including structured settlement payments. The success of our patent licensing business depends on our ability to continue to develop and acquire high quality patents. We devote significant resources to developing new technologies and to sourcing and acquiring patents to address the evolving

needs of the media and semiconductor industries, and we must continue to do so in the future to remain competitive. Developments in our technologies are inherently complex and require long development cycles and a substantial investment before we can determine their commercial viability. Moreover, competition for acquiring high quality patents is intense and there is no assurance that we can continue to acquire such patents on favorable terms. We may not be able to develop and market new or improved technologies, or to develop or acquire high quality patents, in a timely or commercially acceptable fashion. Furthermore, our patents will expire in the future. Our current U.S. issued patents expire at various times through 2039. We need to develop or acquire successful innovations and obtain royalty-generating patents on those innovations before our current patents expire, and our failure to do so would significantly harm our business, financial position, results of operations and cash flows.

The structure and timing of our license and settlement agreements may cause fluctuations in our quarterly or annual financial results.

From time to time we enter into license and settlement agreements that include pricing or payment terms that result in quarter-to-quarter or year-over-year fluctuations in our revenue and cash flows. The effect of these terms may also cause our aggregate annual revenue to grow less rapidly than annual growth in the applicable end market. Additionally, our customers may fail to pay, delay payment of or underpay what they owe to us under our license and settlement agreements, which may in turn require us to enforce our contractual rights through legal proceedings, resulting in payment amounts and timing different than expected based on the terms of our license and settlement agreements. This also may cause our revenue and cash flows to fluctuate on a quarter-to-quarter or year-over-year basis.

The long-term success of our business is dependent on a royalty-based business model, which is inherently risky.

The long-term success of our business is dependent on future royalties paid to us by customers. Royalty payments under our licenses may be based upon, among other things, the number of subscribers for pay TV, a percent of net sales, a per unit sold basis or a fixed quarterly or annual amount. We are dependent upon our ability to structure, negotiate and enforce agreements for the determination and payment of royalties, as well as upon our customers' compliance with their agreements. We face risks inherent in a royalty-based business model, many of which are outside of our control, such as the following:

- the number of subscribers our pay TV customers have or the number of set top-boxes our pay TV customers provide to their end-user subscribers;
- the rate of adoption and incorporation of our technology by semiconductor manufacturers, assemblers, foundries, manufacturers of consumer and communication electronics, and the automotive and surveillance industry;
- the willingness and ability of materials and equipment suppliers to produce materials and equipment that support our licensed technology, in a quantity sufficient to enable volume manufacturing;
- the ability of our customers to purchase such materials and equipment on a cost-effective and timely basis;
- the length of the design cycle and the ability of us and our customers to successfully integrate certain of our imaging technologies into their integrated circuits;
- the demand for products that incorporate our licensed technology;
- the cyclicality of supply and demand for products using our licensed technology;
- the impact of economic downturns; and
- the impact of poor financial performance of our customers.

For example, the ability to enjoy digital entertainment content downloaded or streamed over the internet has caused some consumers to elect to cancel their pay TV subscriptions. If our pay TV customers are unable to maintain their subscriber bases, the royalties they owe us may decline.

It is difficult for us to verify royalty amounts owed to us under our licensing agreements, and this may cause us to lose revenue.

The terms of our license agreements often require our customers to document their use of our technology and report related data to us on a quarterly basis. Although our license terms generally give us the right to audit books and records of our customers to verify this information, audits can be expensive, time consuming, and may not be cost justified based on our understanding of our customers' businesses, especially given the international nature of our customers. Our license compliance program audits certain customers to review the accuracy of the information contained in their royalty reports in an effort to decrease the likelihood that we will not receive the royalty to which we are entitled under the terms of our license agreements, but we cannot give assurances that such audits will be effective to that end.

If we fail to develop and timely deliver innovative technologies and services in response to changes in our markets and industries, our business could decline.

The markets for our products, services and technologies are characterized by rapid change and technological evolution and obsolescence, new and improved product introduction, changing consumer demand, increasingly competitive landscape, and evolving industry standards. We will need to continue to expend considerable resources on research and development in the future in order to continue to design, deliver and enhance innovative audio, imaging, media, entertainment, and semiconductor products, services and technologies. The development of enhanced and new technologies, products, and services is a complex, costly and uncertain process requiring high levels of innovation, highly skilled engineering and development personnel, and the accurate anticipation of technological and market trends. Despite our efforts, we:

- may not receive significant revenue from our current research and development efforts for several years, if at all;
- cannot assure you that the level of funding and significant resources we are committing for investments in new products, services and technologies will be sufficient or result in successful new products, services or technologies;
- cannot assure you that our newly developed products, services or technologies can be successfully protected as proprietary intellectual property rights or will not infringe the intellectual property rights of others;
- cannot assure you that any new products or services that we develop will achieve market acceptance;
- cannot prevent our products, services and technologies from becoming obsolete due to rapid advancements in technology and changes in consumer preferences;
- cannot assure you that revenue from new products, services or technologies will offset any decline in revenue from our products, services and technologies which may become obsolete;
- cannot assure you that our competitors and/or potential customers may not develop products, services or technologies similar to those developed by us, resulting in a reduction in the potential demand for our newly developed products, services or technologies and
- may not correctly identify new or changing market trends at an early enough stage to capitalize on market opportunities.

Furthermore, the decision by a party dominant in the value chain to provide competing technologies at very low or no cost could cause our customers and other manufacturers not to utilize our technologies or services. Our customers may choose to use technologies that their own in-house engineering teams have developed, or in which they have an interest. Accordingly, our revenue could decline if our customers choose not to incorporate our technologies in their products, or if they sell fewer products incorporating our technologies. Our failure to successfully develop new and improved products, services and technologies, including as a result of any of the risks described above, may reduce our future growth and profitability and may adversely affect our business, results and financial condition.

Our products and services face intense competition from various sources, and we may not be able to compete effectively.

We expect that our technologies will continue to compete with technologies of internal design groups at competing companies or from our customers. The internal design groups of these companies create their own audio, imaging, and media solutions. If these internal design groups design around our patents or introduce unique solutions superior to our technology, they may not need to license our technology. These groups may design technology that is less expensive to implement or that enables products with higher performance or additional features. Many of these groups have substantially greater resources, greater financial strength and lower cost structures which may allow them to undercut our price. They also have the inherent advantage of access to internal corporate strategies, technology roadmaps and technical information. As a result, they may be able to bring alternative solutions to market more easily and quickly. We face competitive risks across all our businesses, including:

- our audio technologies compete with other providers of audio products and services, with Dolby Laboratories as the primary competitor in high-definition audio processing, which enjoys advantages in selling its digital multi-channel audio technology, having introduced such technology before we did, and having achieved mandatory standard status in product categories that we have not, including terrestrial digital TV broadcasts in the United States;
- our embedded image processing technologies such as Face Detection and our other products compete with other image processing software vendors such as ArcSoft, Inc. as well as internal design groups of mobile phone and digital camera manufacturers providing similar technologies by employing different approaches;
- our Platform Solutions face significant competition from companies that produce and market program guides as well as television schedule information in a variety of formats, including passive and interactive on-screen electronic guide services, online listings, over the top applications and against customers and potential customers who choose to build their own IPG, including both those who do and those who do not elect to license our patents;
- our advanced video solutions compete with other CE products and home entertainment services (such as Roku, AppleTV and Amazon FireTV) as well as products and service offerings built by other service providers or their suppliers for consumer spending; and

- our competitive position is affected by the rate of adoption and incorporation of our technology by semiconductor manufacturers, assemblers, foundries, manufacturers of consumer and communication electronics, and the automotive and surveillance industry;

In the future, our licensed technologies may also compete with other emerging technologies that may be less expensive and provide higher performance than our solutions. Companies with these competing technologies may also have greater resources. Technological change could render our technologies obsolete, and new, competitive technologies could emerge that achieve broad adoption and adversely affect the use of our technologies and intellectual property.

Some of our current or future competitors may have significantly greater financial, technical, marketing and other resources than we do, may enjoy greater brand recognition than we do, or may have more experience or advantages than we have in the markets in which they compete. Further, many of the consumer hardware and software products that include our technologies also include technologies developed by our competitors. As a result, we must continue to invest significant resources in product development in order to enhance our technologies and our existing products and services and introduce new high-quality technologies, products and services to meet the wide variety of such competitive pressures. Our ability to generate revenue from our business will suffer if we fail to do so successfully.

We face competitive risks in the provision of an entertainment offering involving the distribution of digital content provided by third party application providers through broadband.

We have previously launched access in certain of our products and services to the entertainment offerings of Amazon Prime Video, Netflix, Hulu Plus, HBO Max, Disney+, VUDU, Pandora and others for the distribution of digital content directly to broadband-connected TiVo devices. Our offerings with these entertainment offerings typically involve no significant long-term commitments. We face competitive, technological and business risks in our ongoing provision of an entertainment offering involving the distribution of digital content through broadband to consumer televisions with such offerings, including the availability of premium and high-definition content, as well as the speed and quality of the delivery of such content to TiVo devices. For instance, we face increased competition from a growing number of broadband-enabled devices from providers such as Roku, AppleTV, Amazon Prime Video and Google that provide broadband delivered digital content directly to a consumer's television connected to such a device. Additionally, we face competition from online content providers and other PC software providers who deliver digital content directly to a consumer's personal computer, which in some cases may then be viewed on a consumer's television. If we are unable to provide a competitive entertainment offering on our own, or an equivalent offering with other third-parties, the attractiveness of the TiVo service to new subscribers would be harmed as consumers increasingly look for new ways to receive and view digital content and our ability to retain and attract subscribers would be harmed.

Our future success depends on our ability to establish and maintain licensing relationships with companies in related business fields, including:

- pay TV service providers;
- operators of entertainment content distributors, including PPV and VOD networks;
- CE, digital set-top hardware manufacturers, DVD hardware manufacturers and personal computer manufacturers;
- motion-picture studios;
- semiconductor and equipment manufacturers;
- content rights holders;
- retailers and advertisers;
- digital rights management suppliers; and
- internet portals and other digital distribution companies.

Substantially all of our license agreements are non-exclusive, and therefore our licensees are free to enter into similar agreements with third parties, including our competitors. Our licensees may develop or pursue alternative technologies either on their own or in collaboration with others, including our competitors.

Some of our third-party license arrangements require that we license others' technologies and/or integrate our solutions with others. In addition, we rely on third parties to report usage and volume information to us. Delays, errors or omissions in this information could harm our business. If these third parties choose not to support integration efforts or delay the integration of our solutions, our business could be harmed.

Relationships have historically played an important role in the entertainment industries that we serve. If we fail to maintain and strengthen these relationships, these industry participants may not purchase and use our technologies or facilitate the adoption of our technologies, which will harm our results of operations and prospects and may make it more difficult for us to enter into

new markets. In addition, if major industry participants form strategic relationships that exclude us, our business and prospects could be materially adversely affected.

We are exposed to risks associated with our continuing strategy to pursue acquisitions, investments and divestures that may adversely affect our business operations.

We have made several acquisitions, and it is our current plan to continue to acquire assets, patents, technologies or companies that we believe are strategic to our future business. Acquisitions involve challenges in terms of successful integration of technologies, products, services and employees. We may not realize the anticipated benefits of the other acquisitions we may complete in the future, and we may not be able to incorporate any acquired services, products or technologies with our existing operations, or integrate personnel from the acquired businesses, in which case our business could be harmed.

Financing for future acquisitions, may not be available on favorable terms, or at all. If we use our equity securities to fund the acquisition, it may result in significant dilution to our existing stockholders. If we identify an appropriate acquisition candidate for any of our businesses, we may not be able to negotiate the terms of the acquisition successfully, finance the acquisition or integrate the acquired business, products, service offerings, technologies or employees into our existing business and operations. Future acquisitions and divestitures may not be well-received by the investment community, which may cause the value of our stock to fall. We cannot ensure that we will be able to identify or complete any acquisition, divestiture or discontinued business in the future. Further, the terms of our indebtedness constrain our ability to make and finance additional acquisitions or divestitures.

If we fail to protect and enforce our intellectual property rights, contract rights, and our confidential information, our business will suffer.

We rely primarily on a combination of license, development and nondisclosure agreements and other contractual provisions, as well as patent, trademark, trade secret and copyright laws, to protect our technology and intellectual property. If we fail to protect our technology, intellectual property, or contract rights, our customers and others may seek to use our technology and intellectual property without the payment of license fees and royalties, which could weaken our competitive position, reduce our operating results and increase the likelihood of costly litigation. Others may also develop technologies that are similar or superior to our technologies, duplicate our technologies or design around our patents. The growth of our business depends in large part on our ability to secure intellectual property rights in a timely manner, our ability to convince third parties of the applicability of our intellectual property rights to their products, and our ability to enforce our intellectual property rights.

In certain instances, we attempt to obtain patent protection for portions of our technology, and our license agreements typically include both issued patents and pending patent applications. If we fail to obtain patents in a timely manner or if the patents issued to us do not cover all of the inventions disclosed in our patent applications, others could use portions of our technology and intellectual property without the payment of license fees and royalties. For example, our business may suffer if we are unable to obtain patent protection in a timely manner from the PTO due to processing delays resulting from examiner turnover and a continuing backlog of patent applications.

We also rely on trade secret laws rather than patent laws to protect other portions of our proprietary technology. Trade secrets can be difficult to protect. The misappropriation of our trade secrets or other proprietary information could seriously harm our business. We protect our proprietary technology and processes, in part, through confidentiality agreements with our employees, consultants, suppliers and customers. We cannot be certain that these contracts have not been and will not be breached, that we will be able to timely detect unauthorized use or transfer of our technology and intellectual property, that we will have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors. If we fail to use adequate mechanisms to protect our technology and intellectual property, or if a court fails to enforce our intellectual property rights, our business will suffer. We cannot be certain that these protection mechanisms can be successfully asserted in the future or will not be invalidated or challenged.

Further, the laws and enforcement regimes of certain countries may not protect our technology and intellectual property to the same extent as do the laws and enforcement regimes of the U.S. In certain jurisdictions we may be unable to protect our technology and intellectual property adequately against unauthorized use, which could adversely affect our business.

We may not be able to protect our brand from third party infringement or to increase our brand awareness.

Maintaining and strengthening our brands is important to maintaining and expanding our business, as well as to our ability to enter into new markets for our technologies, products and services. If we fail to promote and maintain these brands successfully, our ability to sustain and expand our business and enter into new markets may suffer. Much of the promotion of our brand depends, among other things, on hardware device manufacturing companies and service providers displaying our

trademarks on their products. If these companies choose for any reason not to display our trademarks on their products, or if these companies use our trademarks incorrectly or in an unauthorized manner, the strength of our brand may be diluted or our ability to maintain or increase our brand awareness may be harmed. We generally rely on enforcing our trademark rights to prevent unauthorized use of our brand and technologies. Our ability to prevent unauthorized uses of our brand and technologies would be negatively impacted if our trademark registrations were overturned in the jurisdictions where we do business. We also have trademark applications pending in a number of jurisdictions that may not ultimately be granted, or if granted, may be challenged or invalidated, in which case we would be unable to prevent unauthorized use of our brand and logo in such jurisdictions. We have not filed trademark registrations in all jurisdictions where our brand and logo are used.

Our business may suffer if third parties assert that we violate their intellectual property rights.

Third parties may claim that either we or our customers are infringing upon their intellectual property rights. Even if we believe that such claims are without merit, they can be time-consuming and costly to defend against and will divert management's attention and resources away from our business. Furthermore, third parties making such claims may be able to obtain injunctive or other equitable relief that could block our ability to further develop or commercialize some or all of our products or services in the U.S. and abroad. Claims of intellectual property infringement also might require us to enter into costly settlement or license agreements, pay costly damage awards, or defend or indemnify our customers against judgments, damages, or other losses. Even if we have an agreement that provides for a third party to indemnify us against such costs, the indemnifying party may be unable to perform its contractual obligations under the agreement. If we cannot or do not license the allegedly infringed intellectual property on reasonable terms, or need to substitute similar technology from another source, our business, financial position, results of operations and cash flows could suffer.

Our licensees may delay, refuse to or be unable to make payments to us due to financial difficulties or otherwise, or shift their licensed products to other companies to lower their royalties to us.

A number of our customers may face severe financial difficulties from time to time. Customers may face financial difficulties which may result in their inability to make payments to us in a timely manner, or at all. These risks may be heightened by operating and cash flow disruptions these companies face as a result of the COVID-19 pandemic. In addition, we have had a history of, and we may in the future experience, customers that delay or refuse to make payments owed to us under license or settlement agreements. Our customers may also merge with or may shift the manufacture of licensed products to companies that are not currently licensees of technology. This could make the collection process complex and difficult, which could adversely impact our business, financial condition, results of operations and cash flows.

Some of our IP Semiconductor license agreements may convert to fully paid-up licenses at the expiration of their terms, or upon certain milestones, and we may not receive royalties after that time.

From time to time we enter into IP Semiconductor license agreements that automatically convert to fully paid-up licenses upon expiration or upon reaching certain milestones. We may not receive further royalties from customers for any licensed technology under those agreements if they convert to fully paid-up licenses because such customers will be entitled to continue using some, if not all, of the relevant intellectual property or technology under the terms of the license agreements without further payment, even if relevant patents or technologies are still in effect. If we cannot find another source of royalties to replace the royalties from these license agreements converting to fully paid-up licenses, our results of operations following such conversion would be materially adversely affected.

If we are unable to maintain a sufficient amount of content released in the DTS audio format, demand for the technologies, products, and services that we offer to consumer electronics product manufacturers may significantly decline, which would adversely impact our business and prospects.

We expect to derive a significant percentage of our revenue from the technologies, products, and services that we offer to manufacturers of consumer electronics products. We believe that demand for our audio technologies in growing markets for multi-channel and/or high resolution audio, including TVs, tablets, mobile phones, video game consoles, automobiles, and soundbars, will be based on the amount, quality, and popularity of content (such as movies, TV shows, music, and games) either released in the DTS audio format or capable of being coded and played in the DTS format. In particular, our ability to penetrate the growing markets in the network-connected space depends on the presence of streaming and downloadable content released in the DTS audio format. We generally do not have contracts that require providers of streaming and downloadable content to develop and release such content in a DTS audio format. Accordingly, our revenue could decline if these providers elect not to incorporate DTS audio into their content or if they sell less content that incorporates DTS audio.

In addition, we may not be successful in maintaining existing relationships or developing new relationships with other existing or new content providers. As a result, we cannot assure you that a sufficient amount of content will be released in a DTS audio format to ensure that manufacturers continue offering DTS decoders in the consumer electronics products that they sell.

Demand for our HD Radio technology may be insufficient to sustain projected growth.

Demand for and adoption of HD Radio technology may not be sufficient for us to continue to increase the number of customers of our HD Radio system, which include IC manufacturers, manufacturers of broadcast transmission equipment, consumer electronics products manufacturers, component manufacturers, data service providers, manufacturers of specialized and test equipment and radio broadcasters.

Among other things, continuing and increased consumer acceptance of HD Radio technology will depend upon:

- the number of radio stations broadcasting digitally using HD Radio technology;
- the willingness of automobile manufacturers to include HD Radio receivers in their vehicles;
- the willingness of manufacturers to incorporate HD Radio technology into their products;
- the cost and availability of HD Radio enabled products; and
- the marketing and pricing strategies that we employ and that are employed by our customers and retailers.

Demand for HD Radio also may be impacted by declines in the automotive industry which historically has been cyclical and experienced downturns during declining economic conditions, and which is currently forecasting declines as a result of COVID-19 pandemic and related events.

If demand for HD Radio technology does not recover from declines experienced in 2020 as a result of the COVID-19 pandemic and return to the growth trends experienced in prior years, we may experience sustained reductions in our automotive based royalties and not meet the future growth that is currently projected.

If we are unable to further penetrate the streaming and downloadable content delivery markets and adapt our technologies for those markets, our royalties and ability to grow our audio business could be adversely impacted.

Until recently, video and audio content was purchased and consumed primarily via optical disc-based media. The growth of the internet and network-connected device usage, along with the rapid advancement of online and mobile content delivery, has resulted in download and streaming services becoming mainstream with consumers in various parts of the world. We expect the shift away from optical disc-based media to streaming and downloadable content consumption to continue. If we fail to continue to penetrate the streaming and downloadable content delivery market, our audio business could suffer.

The services that provide content from the cloud are not generally governed by international or national standards and are thus free to choose any media format(s) to deliver their products and services. This freedom of choice on the part of online content providers could limit our ability to grow if such content providers do not incorporate our technologies into their services, which could affect demand for our technologies.

Furthermore, our inclusion in mobile and other network-connected devices may be less profitable for us than optical disc players. The online and mobile markets are characterized by intense competition, evolving industry standards and business and distribution models, disruptive software and hardware technology developments, frequent new product and service introductions, short product and service life cycles, and price sensitivity on the part of consumers, all of which may result in downward pressure on pricing. If we are unable to adequately and timely respond to the foregoing, our business and operating results could be adversely affected.

The success of certain of our solutions depends on the interoperability of our technologies with consumer hardware devices.

To be successful, we design certain of our solutions to interoperate effectively with a variety of consumer hardware devices, including personal computers, DVD players and recorders, Blu-ray players, digital still cameras, digital camcorders, portable media players, digital TVs, home media centers, set-top boxes, video game consoles, MP3 devices, multi-media storage devices, mobile tablets and smartphones. We depend on significant cooperation with manufacturers of these devices and the components integrated into these devices, as well as software providers that create the operating systems for such devices, to incorporate certain of our technologies into their product offerings and ensure consistent playback of encoded files. Currently, a limited number of devices are designed to support certain of our technologies. If we are unsuccessful in causing component manufacturers, device manufacturers and software providers to integrate certain of our technologies into their product offerings, those technologies may become less accessible to consumers, which would adversely affect our revenue potential.

Our failure to adequately manage our increasingly complex distribution agreements, including licensing, development and engineering services, may cause unexpected delays and loss of revenue in the deployment of advanced television solutions.

In connection with our deployment arrangements for TiVo products, we engage in complex licensing, development and engineering services arrangements with our marketing partners and distributors. These deployment agreements with television service providers usually provide for some or all of the following deliverables: software engineering services, solution integration services, hosting the TiVo Service, maintenance and support. In general, these contracts are long-term and complex and often rely on the timely performance of such television service provider's third-party vendors that are outside TiVo's control. The engineering services and technology we agree to provide and/or develop may be essential to the functionality of the licensed software and delivered product or such software may involve significant customization and modification for each customer. We have experienced or may experience delays in delivery with television service providers as well as significant increases in expected costs of development and performance in certain instances in the past. Additional delays could lead to additional costs and adverse accounting treatments forcing us to recognize costs earlier than expected. If we are unable to deliver the contracted for technology, including specified customizations and modifications, and services in a timely manner or at all, then we could face penalties in the form of unreimbursed engineering development work, loss of subscriber or minimum financial commitments on the part of our partners or in extreme cases the early termination of such distribution agreements. In any such case our business would be harmed.

In addition, when we enter into such deployment agreements with television service providers, we are typically required to make cost estimates based on historical experience and various other assumptions. These estimates are assessed continually during the term of the contract and revisions are reflected when the conditions become known. Using different cost estimates related to engineering services may produce materially different operating results, in addition to differences in timing and income statement classification of related expenses and revenue. An unfavorable change in estimates could result in a reduction of profit due to higher cost or the recording of a loss once such a loss becomes known to us that would be borne solely by us. We also recognize revenue for software engineering services using the percentage-of-completion method. We recognize revenue by measuring progress toward completion based on the ratio of costs incurred, principally labor, to total estimated costs of the project, an input method. If we are unable to properly measure and estimate our progress toward completion in such circumstances, we could incur unexpected additional costs, be required to recognize certain costs earlier than expected, or otherwise be required to delay recognition of revenue unexpectedly. A material inability to properly manage, estimate and perform these development and engineering services for our television service provider customers could cause us to incur unexpected losses and reduce or even eliminate any profit from these arrangements, and in such a case our business would be harmed.

We make significant investments in new products and services that may not achieve technological feasibility or profitability or that may limit our growth.

We have made and will continue to make significant investments in research, development, and marketing of new technologies, products and services, including audio, imaging, media, advanced semiconductor packaging, bonding, and interconnect technologies, as well as our Perceive subsidiary that recently announced a new hardware and software solution for high-performance inference at the edge. Investments in new technologies are speculative and technological feasibility may not be achieved. Commercial success depends on many factors including demand for innovative technology, availability of materials and equipment, selling price the market is willing to bear, competition and effective licensing or product sales. We may not achieve significant revenue from new product and service investments for a number of years, if at all. Moreover, new technologies, products and services may not be profitable, and even if they are profitable, operating margins for new products and businesses may not be as high as the margins we have experienced historically or originally anticipated.

For example, we have incurred, and expect to continue to incur, substantial research and development expenses through our Perceive subsidiary focused on delivering edge inference solutions. We do not have prior experience as a company in the development or marketing of similar hardware or software. We will need to continue to find and hire qualified and experienced personnel to advance this new business. In addition, chip technologies such as what we are developing are subject to extensive competition and a relentless pace of innovation. These new products could be copied or functionally surpassed by other designers, manufacturers, or innovators, some of whom may have far greater financial resources than us, and who may be able to develop products with greater capabilities or lower cost.

Our products and services could be susceptible to errors, defects, or unintended performance problems that could result in lost revenue, liability or delayed or limited market acceptance.

We develop and offer complex solutions, which we license and otherwise provide to customers. The performance of these solutions typically involves working with sophisticated software, computing and communications systems. Due to the complexity of these products and services, and despite our quality assurance testing, the products may contain undetected defects or errors that may affect the proper use or application of such products or services by the customer. Because certain of

our products and services are embedded in digital content and other software, or rely on stable transmissions, our solutions' performance could unintentionally jeopardize our customers' product performance. Because customers rely on our products and services as used in their software and applications, defects or errors in our products or services may discourage customers from purchasing our products or services. These defects or errors could also result in product liability, service level agreement claims or warranty claims. Although we attempt to reduce the risk of losses resulting from these claims through warranty disclaimers and limitation of liability clauses in our agreements, these contractual provisions may not be enforceable in every instance. Any such defects, errors, or unintended performance problems in existing or new products or services, and any inability to meet customer expectations in a timely manner, could result in loss of revenue or market share, failure to achieve market acceptance, diversion of development resources, injury to our reputation, increased insurance costs and increased service costs, any of which could materially harm our business.

Dependence on the cooperation of pay TV service providers, television broadcasters, hardware manufacturers, data providers and delivery mechanisms could adversely affect our revenue.

We rely on third party providers to deliver our metadata to some of the CE devices that include our UXs and IPGs. Further, our national data network provides customized and localized listings for pay TV and licensees of our data used in third party IPGs for pay TV. In addition, we purchase certain metadata from commercial vendors that we redistribute. The quality, accuracy and timeliness of that metadata may not continue to meet our standards or be acceptable to consumers. There can be no assurance that commercial vendors will distribute data to us without error, or at all, or that the agreements that govern some of these relationships can be maintained on favorable economic terms. Technological changes may also impede the ability to distribute metadata. Our inability to renew these existing arrangements on terms that are favorable to us, or enter into alternative arrangements that allow us to effectively transmit our metadata to CE devices, could have a material adverse effect on our CE IPG business and cause our revenue or margins to decline.

We are dependent on third parties for metadata, third party images and content.

We distribute, as a revenue generating activity, metadata. In the future, we may not be able to obtain this content, or may not be able to obtain it on the same terms. Such a failure to obtain the content, or obtain it on the same terms, could damage the attractiveness of our metadata offerings to our customers, or could increase the costs associated with providing our metadata offerings, and could thus cause revenue or margins to decrease.

We depend on a limited number of third-parties to design, manufacture, distribute and supply hardware devices upon which our TiVo software and service operate.

Our TiVo software and services operate on a number of hardware products, including DVR and non-DVR STBs, produced by third-party hardware companies. If we fail to effectively manage the integration of our software and services with our hardware partners' devices, we could suffer from product recalls, poorly performing product and higher than anticipated warranty costs. We have contracted for the design, manufacture and distribution of certain TiVo-branded DVRs and non-DVRs with a third-party partner. This third-party partner does not typically enter into long-term volume commitments with the major retail distributors. We currently rely on our TiVo-branded hardware partner's relationships with major retail distributors, including Best Buy, Amazon and others, for the distribution of TiVo-enabled DVRs and non-DVR products within the United States. If one or several major retail partners were to discontinue selling TiVo-enabled products, the volume of TiVo-enabled DVRs and non-DVRs sold to consumers could decrease, which could harm TiVo’s service business.

We depend on a third-party partner for certain TiVo-branded hardware devices that are sold through the TiVo website. If this third-party partner fails to perform its obligations, we may be unable to find alternative suppliers or deliver our products and services sold through the TiVo website on time or with the features and functionality customers expect. In addition, our third-party partner may depend on sole suppliers for key components and services in order to manufacture DVRs and non-DVR STBs which run our software, and they may be subject to risks of supply shortages and unexpected cost increases. Additionally, certain features and functionalities of our TiVo service and DVRs depend on third party components and technologies. If TiVo or our third-party partner is unable to purchase or license such third-party components or technologies, we would be unable to offer certain related features and functionalities to our customers. In such a case, the desirability of our products to our customers could be reduced, thus harming our business.

We also rely on third parties to whom we outsource supply-chain activities related to inventory warehousing, order fulfillment, distribution and other direct sales logistics to provide cost-effective and efficient supply chain services. We cannot be sure that these parties will perform their obligations as expected or that any revenue, cost savings or other benefits will be derived from the efforts of these parties. If one or several of our third-party supply chain partners were to discontinue service to us, our ability to fulfill sales orders through the TiVo website and distribute inventory timely, cost effectively, or at all, may be delayed or prevented, which could harm our business. Any of these events could require us to undertake unforeseen additional

responsibilities or devote additional resources to commercialize our TiVo service. Any of these outcomes could harm our ability to compete effectively and achieve increased market acceptance and brand recognition.

In connection with our sales of TiVo-branded products through the TiVo website, we maintain an inventory of certain DVR and non-DVR products based on our demand forecast. Due to the seasonality in our business and the nature of long-lead time product development and manufacturing cycles, we make demand forecasts for these products well in advance of our peak selling periods. As such, we are subject to risks in managing the inventory needs of our business during the year, including estimating the appropriate quantity and mix of demand across our older and newer DVR and non-DVR products. Should actual market conditions differ from our estimates, our future results of operations could be materially affected. Excess purchase commitments as a result of changes in our sales forecast may require us to record a loss.

Qualifying, certifying and supporting our technologies, products and services is time consuming and expensive.

We devote significant time and resources to qualify and support our software products on various personal computer, CE and mobile platforms, including operating systems from Apple Inc., Google and Microsoft. In addition, we maintain high-quality standards for products that incorporate our technologies and products through a quality control certification process. To the extent that any previously qualified, certified and/or supported platform or product is modified or upgraded, or we need to qualify, certify or support a new platform or product, we could be required to expend additional engineering time and resources, which could add significantly to our development expenses and adversely affect our operating results.

We are exposed to the risks related to international sales and operations.

We derive a large portion of our total revenue from operations outside of the United States. Therefore, we face exposure to risks of operating in many foreign countries, including:

- difficulties and costs associated with complying with a wide variety of complex laws, treaties and regulations;
- unexpected changes in political or regulatory environments;
- differing employment practices, labor compliance and costs associated with a global workforce;
- earnings and cash flows that may be subject to tax withholding requirements or the imposition of tariffs;
- exchange controls or other restrictions;
- restrictions on, or difficulties and costs associated with, the repatriation of cash from foreign countries to the United States;
- political and economic instability and trade conflict;
- import and export restrictions and other trade barriers;
- difficulties in maintaining overseas subsidiaries and international operations;
- difficulties in obtaining approval for significant transactions;
- fluctuations in foreign currency exchange rates.

Any one or more of the above factors could adversely affect our international operations and could significantly affect our results of operations, financial condition and cash flows. The results of our operations will be dependent to a large extent upon the global economy. Geopolitical factors such as terrorist activities, armed conflict or global health conditions that adversely affect the global economy may adversely affect our operating results and financial condition.

Our business could be materially adversely affected if foreign markets do not continue to develop, if we do not receive additional orders to supply our technologies, products or services for use by international pay TV service providers, CE and STB manufacturers, PPV/VOD providers and others or if regulations governing our international businesses change. Any changes to the statutes or the regulations with respect to export of encryption technologies could require us to redesign our products or technologies or prevent us from selling our products and licensing our technologies internationally.

Deteriorating trade relations between the United States and China, other trade conflicts and barriers, economic sanctions, and national security protection policies could limit or prevent existing or potential customers from doing business with us.

The increased trade conflicts between the United States and its major trading partners, evidenced by trade restrictions such as tariffs, taxes, export controls, economic sanctions, and enhanced policies designed to protect national security, could adversely impact our revenue. In particular, we have seen impacts on our business due to the increase in trade conflicts between the United States and China, although to date this impact has not been material. Further United States government actions to protect domestic economic and security interests could lead to further restrictions. Moreover, growing trade conflicts and uncertainties can be expected to lead to decreased use of foreign-owned technologies in China and other countries, due to efforts by foreign governments and enterprises to find alternative sources of supply, to develop proprietary domestic

technologies, and otherwise to reduce reliance on foreign technology sources. These trends could have a material adverse impact on our revenue.

If we lose any of our key personnel or are unable to attract, train and retain qualified personnel, we may not be able to execute our business strategy effectively.

Our success depends, in large part, on the continued contributions of our key management, engineering, sales, marketing, intellectual property, legal and finance personnel, many of whom are highly skilled and would be difficult to replace. None of our senior management, key technical personnel or key sales personnel are bound by written employment contracts to remain with us for a specified period. In addition, we do not currently maintain key-person life insurance covering our key personnel or have restrictions on their post-employment ability to solicit our employees, contractors or customers if key personnel voluntarily terminate their employment. The loss of any of our senior management or other key personnel could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate. Our future success will depend to a significant extent on the ability of these executives to effectively drive execution of our business strategy, and on the ability of our management team to work together effectively.

Our success also depends on our ability to attract, train and retain highly skilled managerial, engineering, sales, marketing, legal and finance personnel and on the abilities of new personnel to function effectively, both individually and as a group. Competition for qualified senior employees can be intense. We have also experienced difficulty in hiring and retaining highly skilled engineers with appropriate qualifications to support our growth and expansion. Further, we must train our new personnel, especially our technical support personnel, to respond to and support our licensees and customers. If we fail to do this, it could lead to dissatisfaction among our licensees or customers, which could slow our growth or result in a loss of business.

Our systems, networks and online business activities are subject to cybersecurity and stability risks, information technology system failures, and security breaches.

Despite system redundancy and the implementation of security measures within our internal and external information technology and networking systems, our information technology systems may be subject to security breaches, unauthorized access (malicious or accidental), misuse of information by authorized users, data leaks or unintentional exposure of information, failed process, loss of data, damages from computer viruses or malware, natural disasters, terrorism, telecommunication failures or disruption of service. In addition, our online business activities depend on the ability to store and transmit confidential information and licensed intellectual property securely on our systems, third party systems and over private, hybrid and public networks. Any compromise of our ability to store or transmit such information and data securely or reliably, and any costs associated with preventing or eliminating such problems, could harm our business. Our storage and online transmissions and business activities are subject to a number of security and stability risks, including:

- our own or licensed encryption and authentication technology, or access or security procedures, may be compromised, breached or otherwise be insufficient to ensure the security of customer information or intellectual property;
- we could experience unauthorized access, computer viruses, system interference or destruction, “denial of service” attacks and other disruptive problems, whether intentional or accidental, that may inhibit or prevent access to our websites and infrastructure or use of our products and services, or cause customer information or other sensitive information to be disclosed to a perpetrator, others or the general public;
- someone could circumvent our security measures and misappropriate our, our business relations or customers' proprietary information or content or interrupt operations, or jeopardize our licensing arrangements, many of which are contingent on our sustaining appropriate security protections;
- our computer systems could fail and lead to service interruptions or downtime for television or other guidance systems, or websites, which may include e-commerce websites;
- we could inadvertently disclose customer information; or
- we may need to grow, reconfigure or relocate our data centers in response to changing business needs, which may be costly and lead to unplanned disruptions of service.

The occurrence of any of these or similar events could damage our business, hurt our ability to distribute products and services and collect revenue, threaten the proprietary or confidential nature of our technology, harm our reputation, increase the costs of our ongoing cybersecurity protections and enhancements, and expose us to litigation and other liabilities. Because some of our technologies and businesses are intended to inhibit use of or restrict access to our customers' intellectual property, we may become the target of hackers or other persons whose use of or access to our customers' intellectual property is affected by our technologies. Also, hackers may, for financial gain or other motives, seek to infiltrate or damage our systems, or obtain sensitive business information or customer information. We also may be exposed to customer claims, or other liability, in connection with any security breach or inadvertent disclosure. We may be required to expend significant capital or other

resources to protect against the threat of security breaches, hacker attacks or system malfunctions or to alleviate problems caused by such breaches, attacks or failures.

Our product and service offerings rely on a variety of systems, networks and databases, many of which are maintained by us at our data centers or third-party data centers (e.g., cloud services). We do not have complete redundancy for all of our systems, and we do not maintain real-time back-up of our data, so in the event of significant system disruption, particularly during peak periods, we could experience loss of data processing capabilities, which could prevent us from providing our products and services to our customers for an uncertain amount of time, cause us to lose customers as a result of such breaches, and could harm our operating results through loss of revenue and increased costs to remediate such cybersecurity incidents. Notwithstanding our efforts to protect against "down time" for products and services, we do occasionally experience unplanned outages or technical difficulties. In order to provide products and services, we must protect the security of our systems, networks, databases and software.

To the extent that any disruption or security breach results in inappropriate disclosure of our confidential information, we may incur liability or additional costs to remedy the damages caused by these disruptions or security breaches.

Our business operations are subject to natural disasters and industry-wide failure and adverse events.

Our business operations depend on our ability to maintain and protect our facilities, computer systems and personnel. Our corporate headquarters are located in the San Francisco Bay Area and we have engineering activities in several locations throughout California, which in the past have experienced severe earthquakes. We do not carry earthquake insurance for any of our facilities except for our office in Calabasas, California. Earthquakes, fires, or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects.

The provision of certain of our products and services depends on the continuing operation of communications and transmission systems and mechanisms, including satellite, cable, wire, internet and over-the-air. These communication and transmission systems and mechanisms are subject to significant risks and any damage to or failure of these systems and mechanisms could result in an interruption of the provision of our products and services.

Several of our major business operations are subject to interruption by earthquake, fire, power shortages, terrorist attacks and other hostile acts, and other events beyond our control. The majority of our research and development activities, our corporate headquarters, our principal information technology systems and other critical business operations are located near major seismic faults. Our operating results and financial condition could be materially harmed in the event of a major earthquake or other natural or man-made disaster that disrupts our business. The communications and transmission systems and mechanisms that we depend on are not fully redundant, and our disaster recovery planning cannot account for all eventualities.

Risks Related to Financial Matters

The nature of our business requires the application of complex accounting principles. Significant changes in U.S. generally accepted accounting principles ("GAAP") could materially affect our financial position and results of operations.

From time to time the Financial Accounting Standards Board (the "FASB") modifies the accounting standards applicable to our financial statements, which could materially affect our financial position or results of operations. For example, in February 2016, the FASB issued an amended accounting standard for leases, Accounting Standards Update No. 2016-02, Leases ("Topic 842"). On January 1, 2019, Xperi and TiVo each adopted Topic 842. As a result of adopting Topic 842, we recognized combined present value of existing minimum lease payments as lease liabilities of $99.5 million and corresponding right-of-use assets of $85.5 million as of January 1, 2019.

We have significant indebtedness which could adversely affect our financial position.

As of June 30, 2020, we had $1,050 million of total debt outstanding under our 2020 Term Loan B Facility. Our 2020 Term Loan B Facility is guaranteed by us and our wholly-owned material domestic subsidiaries and is secured by substantially all of our and the subsidiary guarantors' assets. Our indebtedness may:

- limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general business purposes;
- limit our ability to use our cash flow or obtain additional financing for future working capital, capital expenditures, acquisitions or other general business purposes;
- require us to use a substantial portion of our cash flow from operations to make debt service payments;
- limit our flexibility to plan for, or react to, changes in our business and industry;

- place us at a competitive disadvantage compared to our less leveraged competitors; and
- increase our vulnerability to the impact of adverse economic and industry conditions.

Our ability to meet our debt service obligations will depend on our future performance, which will be subject to financial, business and other factors affecting our operations, many of which are beyond our control.

Our variable rate indebtedness may expose us to interest rate risk, which could cause our debt costs to increase significantly.

As of June 30, 2020, we had $1,050 million of outstanding indebtedness that was subject to floating interest rates. Changes in economic conditions outside of our control could result in higher interest rates, thereby increasing our interest expense and reducing the funds available for capital investment, operations or other purposes. At June 30, 2020, a 1% increase in the effective interest rate on our outstanding debt throughout a one-year period would result in an annual increase in our interest expense of approximately $10.5 million. Any significant increase in our interest expense could negatively impact our results of operations and cash flows and also our ability to pay dividends in the future. If the U.S. Federal Reserve raises its benchmark interest rate, any increases would likely impact the borrowing rate on our outstanding indebtedness, and increase our interest expense.

We may not be able to generate sufficient cash to service our debt obligations.

Our ability to make payments on and to refinance our indebtedness will depend on our financial and operating performance, which is subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We may be unable to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal and interest on our indebtedness when due.

If our cash flows and capital resources are insufficient to timely fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, or to sell assets, seek additional capital or restructure or refinance our indebtedness. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of cash flows and capital resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. Our Credit Agreement restricts our ability to dispose of assets, use the proceeds from any disposition of assets and refinance our indebtedness. We may not be able to consummate those dispositions or to maximize the proceeds that we could realize from them and these proceeds may not be adequate to meet any debt service obligations then due.

Repayment of debt is dependent on cash flow generated by our subsidiaries and their respective subsidiaries.

Our subsidiaries own a significant portion of our assets and conduct substantially all of our operations. Each subsidiary is a distinct legal entity, and, under certain circumstances, legal and contractual restrictions may limit our ability to obtain cash from our subsidiaries. Our subsidiaries may not be able to, or may not be permitted to, make distributions to enable us to make payments in respect of our indebtedness. Additionally, distributions from our non-U.S. subsidiaries may be subject to foreign withholding taxes and would be subject to U.S. federal and state income tax which could reduce the net cash available for principal and interest payments.

We utilize non-GAAP reporting in our quarterly earnings press releases.

As part of our quarterly earnings press releases, we publish measures compiled in accordance with GAAP as well as non-GAAP financial measures, along with a reconciliation between the GAAP and non-GAAP financial measures. The reconciling items adjust amounts reported in accordance with GAAP for certain items which are described in detail in each such quarterly earnings press release. We believe that our non-GAAP financial measures are meaningful to investors when analyzing our results of operations as this is how our business is managed. The market price of our stock may fluctuate based on future non-GAAP results if investors base their investment decisions on such non-GAAP financial measures. If we decide to alter or curtail the use of non-GAAP financial measures in our quarterly earnings press releases, the market price of our stock could be adversely affected if investors analyze our performance in a different manner.

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements could be impaired, which could increase our operating costs and affect our ability to operate our business.

We have a complex business that is international in scope. Ensuring that we have adequate internal controls and procedures in place to facilitate the production of accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. We are continually in the process of documenting, reviewing and, if appropriate, improving our internal controls and procedures in connection with Section 404 of the Sarbanes-Oxley Act of 2002, which

requires annual management assessments of the effectiveness of our internal control over financial reporting and a report by our independent registered public accountants on the effectiveness of our internal controls over financial reporting. If we or our independent registered public accountants identify areas for further attention or improvement, implementing any appropriate changes to our internal controls may require specific compliance training of our directors, officers and employees, entail substantial costs in order to modify our existing accounting systems and take a significant amount of time to complete. We have in the past identified, and may in the future identify, significant deficiencies in the design and operation of our internal controls, which have been or will in the future need to be remediated. Furthermore, our independent registered public accountants may interpret the Section 404 requirements and the related rules and regulations differently from how we interpret them, or our independent registered public accountants may not be satisfied with our internal control over financial reporting or with the level at which these controls are documented, operated or reviewed in the future. Finally, in the event we make a significant acquisition, or a series of smaller acquisitions, we may face significant challenges in implementing the required processes and procedures in the acquired operations. As a result, our independent registered public accountants may decline or be unable to report on the effectiveness of our internal controls over financial reporting or may issue a qualified report in the future. This could result in an adverse reaction in the financial markets due to investors' perceptions that our internal controls are inadequate or that we are unable to produce accurate financial statements.

If our goodwill and other intangible assets become impaired, we may be required to record a significant charge to earnings.

In addition to internal development, we intend to acquire additional businesses, technology and intellectually property through strategic relationships and transactions. We believe these strategic relationships and transactions will enhance the competitiveness and size of our current businesses and provide diversification into markets and technologies that complement our current businesses. Future transactions could be in the form of asset purchases, equity investments, or business combinations. As a result, we may have significant goodwill from such transactions and other intangible assets which are amortized over their estimated useful lives. We review our amortizable intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable or the useful life is shorter than originally estimated. Factors that may be considered a change in circumstances indicating that the carrying value of our amortizable or other intangible assets may not be recoverable include a decline in future cash flows, fluctuations in market capitalization, slower growth rates in our industry or slower than anticipated adoption of our products by our customers. As we continue to review for factors that may affect our business which may not be in our control, we may be required to record a significant charge to earnings in our financial statements during the period in which any impairment of goodwill and other intangible assets or equity investments is determined, resulting in an adverse impact on our business, financial position, or results of operations.

Changes in, or interpretations of, tax rules and regulations, could adversely affect our effective tax rates and negatively affect our business and financial condition.

On December 22, 2017, the Tax Cuts and Jobs Act (the “Tax Act of 2017”) was signed into law. The Tax Act of 2017 enacted comprehensive tax reform that made broad and complex changes to the U.S. federal income tax code. Beginning in December 2018, the U.S. Department of Treasury commenced publication of draft regulations regarding certain aspects of the Tax Act of 2017, not all of which have been finalized. It is uncertain if additional regulations will be issued or if the draft regulations will be finalized as proposed. In addition, certain states have not finalized their decisions regarding conformity with the Tax Act of 2017. As a result, the overall impact of the Tax Act of 2017 is uncertain and the Tax Act of 2017 could adversely affect our effective tax rate, financial condition, results of operations or cash flows.

We are subject to U.S. federal and state income taxes, as well as taxes in various international jurisdictions. As a result, our effective tax rate is derived from a combination of applicable tax rates in the various jurisdictions where we operate. In preparing our financial statements, we estimate the amount of tax to accrue in each tax jurisdiction. Nevertheless, our effective tax rate may be different than experienced in the past due to numerous factors, including from the passage of new tax laws, changes in the mix of our profitability from state to state and from country to country, the amount of payments from the company’s U.S. entities to related foreign entities, the results of examinations and audits of our tax filings, our inability to secure or sustain acceptable agreements with tax authorities and changes in accounting for income taxes. Our future effective tax rates could be unfavorably affected by changes in tax rates, tax laws or the interpretation of tax laws, including associated with the Tax Act of 2017, by changes in the amount of pre-tax income derived from countries with high statutory income tax rates, or by changes in our deferred tax assets and liabilities, including changes in our ability to realize our deferred tax assets. Our effective income tax rate could be unfavorably affected by changes in the amount of sales to customers in countries with high withholding tax rates. Any of these factors could cause us to experience an effective tax rate significantly different from previous periods or our current expectations and may result in tax obligations in excess of amounts accrued in our financial statements.

In addition, U.S. federal, U.S. state, and foreign tax jurisdictions may examine our income tax returns, including income tax returns of acquired companies and acquired tax attributes included therein. We regularly assess the likelihood of outcomes

resulting from these examinations to determine the adequacy of our provision for income taxes. In making such assessments, we exercise judgment in estimating our provision for income taxes. While we believe our estimates are reasonable, we cannot assure you that the final determination from these examinations will not be materially different from that reflected in our historical income tax provisions and accruals. Any adverse outcome from these examinations may have a material adverse effect on our business and operating results.

Our ability to use net operating losses to offset future taxable income may be subject to limitations.

As of December 31, 2019, TiVo had U.S. federal and state net operating losses of approximately $1.0 billion and $1.1 billion. A portion of the federal and state net operating loss carryforwards will begin to expire, if not utilized, in 2020. Net operating losses that expire unused will be unavailable to offset future income tax liabilities. Under the Tax Act of 2017, federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited. In addition, under Sections 382 and 383 of the Internal Revenue Code (the "Code") and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than fifty-percent (50%) change, by value, in its equity ownership over a three (3)-year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control. If an ownership change occurs and our ability to utilize our net operating loss carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations. In addition, at the state level, there may be periods during which the use of net operating loss carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed by us.

Our effective tax rate depends on our ability to secure the tax benefits of our international corporate structure, on the application of the tax laws of various jurisdictions and on how we operate our business.

Our international corporate structure and intercompany arrangements, including the manner in which we market, develop, use and license our intellectual property, fund our operations and structure transactions with our international subsidiaries, may result in the increase or reduction of our worldwide effective tax rate. Such international corporate structure and intercompany arrangements are subject to examination by the tax authorities of the jurisdictions in which we operate, including the United States. The application of the tax laws of these jurisdictions to our international business activities is subject to interpretation and depends on our ability to operate our business in a manner consistent with our corporate structure and intercompany arrangements. Moreover, such tax laws are subject to change. Tax authorities may disagree with our intercompany transfer pricing arrangements, including our transfer of intangibles, or determine that the manner in which we operate our business does not achieve the intended tax consequences. Additionally, current and future changes in the tax laws or interpretations may have an adverse effect on our international corporate structure and operations. For example, various levels of government and international organizations, such as the Organization for Economic Co-operation and Development (OECD) and the European Union ("EU"), increasingly focus on future tax reform that could change longstanding tax principles. Also, changes in the South Korean tax law on royalties subject to withholding taxes from our South Korean licensees may impact our financial results. An adverse determination by tax authorities or a change in tax laws could increase our worldwide effective tax rate and harm our financial position and results of operations.

If we fail to comply with the laws and regulations relating to the collection of sales tax and payment of income taxes in the various states and foreign jurisdictions in which we do business, we could be exposed to unexpected costs, expenses, penalties and fees as a result of our noncompliance in which case our business could be harmed.

As our business grows and expands, we have started to do business in an increasing number of states nationally and foreign jurisdictions. By engaging in business activities in these states and foreign jurisdictions, we become subject to their various laws and regulations, including possible requirements to collect sales tax from our sales within those states and foreign jurisdictions and the payment of income taxes on revenue generated from activities in those states and foreign jurisdictions. In addition, TiVo collects and remits sales taxes in numerous states. The laws and regulations governing the collection of sales tax and payment of income taxes are numerous, complex, and vary among states and foreign jurisdictions. If we fail to comply with these laws and regulations requiring the collection of sales tax and payment of income taxes in one or more states and foreign jurisdictions where we do business, we could be subject to significant costs, expenses, penalties and fees in which case our business would be harmed.

Our subsidiaries have in the past recorded, and may in the future record, significant valuation allowances on our deferred tax assets, and the recording and release of such allowances may have a material impact on our results of operations.

The need for a valuation allowance requires an assessment of both positive and negative evidence on a jurisdiction-by-jurisdiction basis when determining whether it is more-likely-than-not that deferred tax assets are recoverable. In making such assessment, significant weight is given to evidence that can be objectively verified. New facts and circumstances, future

financial results, and new guidance related to the Tax Act may require us to reevaluate our valuation allowance positions which could potentially affect our effective tax rate.

We continue to monitor the likelihood that we will be able to recover our deferred tax assets, including those for which a valuation allowance is recorded. There can be no assurance that we will generate profits in future periods enabling us to fully realize our deferred tax assets. As a result of the merger between us and TiVo, we have applied a valuation allowance on US Federal, and many US states deferred tax assets to the extent they are not realizable by utilizing deferred tax liabilities as sources of income. The timing of recording a valuation allowance or the reversal of such valuation allowance is subject to objective factors that cannot be readily predicted in advance. Both the establishment of a valuation allowance and the reversal of a previously recorded valuation allowance may have a material impact on our financial results.

The IRS may assert positions that may negatively impact the tax-free status of distributions intended to qualify for tax-free treatment, and the desired benefits of such distributions may not be achieved.

In general, a corporation, which we refer to as the distributing corporation, that distributes the stock of another corporation, which we refer to as the controlled corporation, in a transaction that would otherwise qualify for tax-free treatment under Section 355 of the Code may be required to recognize corporate-level gain on the distribution if there is an acquisition of a 50% or greater interest (within the meaning of Section 355(d)(4) of the Code) in either the distributing corporation or the controlled corporation as part of a plan including the distribution. Although there is no current approved plan to separate any parts of the combined company, we currently contemplate that, at some point, likely no earlier than the first quarter of 2021, we may pursue, subject to the receipt of approval by our board and any required regulatory approvals, a separation of our product business and IP licensing business in a transaction intended to qualify as tax-free under Section 355 of the Code, resulting in two independent publicly traded companies. This separation, if undertaken, would be effectuated through a pro-rata spin-off transaction in which our stockholders, at such time, would receive shares of capital stock in the resulting spin-off company. It is not expected that either Xperi or TiVo would be required to recognize corporate-level gain on such separation transaction in connection with our formation, because there would be no acquisition of a 50% or greater interest in either company. There can be no assurance, however, that the IRS may not take a contrary view. In addition, in the event that the IRS were to take the view that the transactions that led to our formation constitute an acquisition of a 50% or greater interest in either Xperi or TiVo, we may be restricted in our ability to implement any contemplated business separation in a tax-efficient manner. Certain steps we take in contemplation of the separation could result in the reduction of certain tax attributes or the payment of cash taxes even if we satisfy the requirements under Section 355(d)(4).

Additionally, there are many factors that could, prior to the determination by our board to proceed with any contemplated business separation, impact the structure or timing of, the anticipated benefits from, or determination to ultimately proceed with, any contemplated business separation, including, among others, global economic conditions, instability in credit markets, declining consumer and business confidence, fluctuating commodity prices and interest rates, volatile exchange rates, tax considerations, and other challenges that could affect the global economy, specific market conditions in one or more of the industries of the businesses proposed to be separated, and changes in the regulatory or legal environment. Such changes could adversely impact the value of a contemplated business separation transaction to our stockholders. Additionally, to the extent our board determines to proceed with any contemplated business separation, the consummation of such transaction is a complex, costly and time-consuming process, and there can be no guarantee that the intended benefits (including the tax treatment), of such transaction will be achieved. An inability to realize the full extent of the anticipated benefits (including the tax treatment) of any contemplated business separation, as well as any delays encountered in the process, could have an adverse effect upon the revenue, level of expenses and operating results of the product business, the IP licensing business and/or us.

The investment of our cash, cash equivalents and investments in marketable debt and equity securities is subject to risks which may cause losses and affect the liquidity of these investments.

At June 30, 2020, we held approximately $174.0 million in cash and cash equivalents and $25.6 million in short-term investments. These investments include various financial securities such as corporate bonds and notes, municipal bonds and notes, commercial paper, treasury and agency notes and bills, and money market funds. Although we invest in high quality securities, ongoing financial events have at times adversely impacted the general credit, liquidity, market and interest rates for these and other types of debt securities. Recent financial market volatility resulting from the COVID-19 pandemic heightens the risk of a potential loss in the value of our investments. Changes in monetary policy by the Federal Reserve, government fiscal policies, and global economic and market conditions may adversely affect the value of our investment portfolio. We may in the future have a need to sell investments before their maturity dates, which could result in losses on the sale of those investments. For example, the DTS acquisition resulted the liquidation of a significant portion of our investments. The financial market and monetary risks associated with our investment portfolio have and may in the future have a material adverse effect on our financial condition, results of operations or cash flows.

Risks Related to Regulatory and Legal Matters

New governmental regulations or new interpretation of existing laws, including legislative initiatives seeking to, or judicial or regulatory decisions that, weaken patent protection or copyright law, could cause legal uncertainties and result in harm to our business.

Our business relies in part on the uniform and historically consistent application of U.S. patent laws, rules, and regulations. The standards that courts use to interpret patents are not always applied predictably or uniformly and may evolve, particularly as new technologies develop. For example, the Supreme Court of the United States has modified some legal standards applied by the U.S. Patent and Trademark Office in the examination of U.S. patent applications, which may decrease the likelihood that we will be able to obtain patents and may increase the likelihood of challenges to patents we obtain or license. For example, our patents continue to face challenges in the U.S. from Inter Partes Review (IPR) proceeding before the Patent Trial and Appeal Board (PTAB). Such proceedings to date have a high rate of invalidation of patents and patents we have asserted in litigation have been and may continue to be invalidated in such proceedings. Additionally, there have been and may be bills introduced in the U.S. Congress relating to patent law that could adversely impact our business depending on the scope of any bills that may ultimately be enacted into law. Some of these changes or potential changes may not be advantageous for us and may make it more difficult to obtain adequate patent protection, or to enforce our patents against parties using them without a license or payment of royalties. These changes or potential changes could increase the costs and uncertainties surrounding the prosecution of our patent applications and the enforcement of our patent rights and could have a negative effect on our ability to license our patents and, therefore, on the royalties we can collect.

Consumer rights advocates and other constituencies also continuously challenge copyright law through both legislative and judicial actions. If our copyright protections are compromised, or devices that can circumvent our technology are permitted by law and become prevalent, this could result in reduced demand for our technologies, and our business would be harmed.

Many laws and regulations are pending and may be adopted by the U.S. federal government, individual states and local jurisdictions and other countries with respect to the internet. These laws may relate to many areas that impact our business, including intellectual property rights, digital rights management, copyright, property ownership, privacy, taxation, and the consumer electronic (“CE”) and television industry. These types of regulations are likely to differ between countries and other political and geographic divisions. Changes to or the interpretation of these laws could increase our costs, expose us to increased litigation risk, substantial defense costs and other liabilities or require us or our customers to change business practices. Laws or regulations could be interpreted to prevent or limit access to some or all television signals by certain CE devices, or impose limits on the number of copies, the ability to transfer or move copies, or the length of time a consumer may retain copies of some or all types of television programming.

In addition, the satellite transmission, cable and telecommunications industries are subject to pervasive federal regulation, including Federal Communications Commission (“FCC”) licensing and other requirements, as well as extensive regulation by local and state authorities. The FCC could promulgate new regulations or interpret existing regulations in a manner that would cause us to incur significant compliance costs or force us to alter or eliminate certain features or functionality of our products or services, which may adversely affect our business. For example, the FCC could determine that certain of our products fail to comply with regulations concerning matters such as electrical interference, copy protection, digital tuners, accessibility for blind and deaf users, or display of television programming based on rating systems.

In the United States, the FCC regulates the broadcast radio industry, interprets laws enacted by Congress and establishes and enforces regulations governing radio broadcasting. It is unclear what rules and regulations the FCC may adopt regarding digital audio broadcasting and what effect, if any, such rules and regulations will have on our product licensing business, the operations of stations using our HD Radio technology or consumer electronics manufacturers. Any additional rules and regulations imposed on digital audio broadcasting could adversely impact the attractiveness of HD Radio technology and negatively impact our business. Also, non-compliance by us, or by radio stations offering HD Radio broadcasts, with any FCC requirements or conditions could result in fines, additional license conditions, license revocation or other detrimental FCC actions.

It is difficult to anticipate the impact of current or future laws and regulations on our business. We may have significant expenses associated with staying appraised of and in compliance with local, state, federal, and international legislation and regulation of our business and in presenting the Company’s positions on proposed laws and regulations.

We need to safeguard the security and privacy of our customers’ confidential data and remain in compliance with laws that govern such data, and any inability to do so may harm our reputation and brand and expose us to legal action.

Our products and services and back-end information technology systems can collect and allow us to store individual viewer and account preferences and other data our customers may consider confidential or may be considered personal information or

personal data under applicable regulatory schemes. To provide better consumer experiences and to operate effectively, and for our analytics business and other businesses, we collect certain information from users. Collection and use of such information may be subject to U.S. federal and state privacy and data collection laws and regulations, standards used by credit card companies applicable to merchants processing credit card details, and foreign laws. We may also be subject to third party privacy policies and permissions and obligations we owe to third parties, including, for example, those of pay TV service providers. We post our privacy policies concerning the collection, use and disclosure of user data, including interactions between client and server. Privacy concerns, however, could create uncertainty in the marketplace for digital video recording and for our products and services more generally. Any failure by us to comply with privacy policies or contractual obligations, any failure to comply with standards set by credit card companies relating to privacy or data collection, any failure to conform the privacy policy to changing aspects of our business or applicable law, or any existing or new legislation regarding privacy issues could impact our data collection efforts and subject us to fines, litigation or other liability.

Further, our compliance with such laws dealing with the use, collection and processing of such customer data, including personal data, is core to our strategy. These laws are increasing in number, enforcement, fines and other penalties. All states have adopted laws requiring notice to consumers of a security breach implicating their personal information. In the event of a security breach, these laws may subject us to incident response, notice and remediation costs, as well as costs associated with any investigations that might arise from federal regulatory agencies and state attorneys general. Failure to safeguard data adequately or to destroy data securely could subject us to regulatory investigations or enforcement actions under federal or state data security, unfair practices, or consumer protection laws. The scope and interpretation of these laws could change and the associated burdens and compliance costs could increase in the future. Two such governmental regulations that have significant implications for our products and services are the General Data Protection Regulation (“GDPR”) and the California Consumer Privacy Act (“CCPA”).

Compliance with these and any other applicable privacy and data security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations. Furthermore, the laws are not consistent, and compliance in the event of a widespread data breach is costly.

In addition, the Children's Online Privacy Protection Act imposes civil and criminal penalties on persons collecting personal information from children under the age of 13. We do not knowingly distribute harmful materials to minors, direct our websites or services to children under the age of 13, or collect personal information from children under the age of 13. However, we are not able to control the ways in which consumers use our technology, and our technology may be used for purposes that violate this or other similar laws. The manner in which such laws may be interpreted and enforced cannot be fully determined, and future legislation could subject us to liability if we were deemed to be non-compliant.

Further, if our technological security measures are compromised, our customers may curtail or stop use of our products and services. Our products and services such as DVRs may contain the private information of our customers, and security breaches could expose us to a risk of loss of this information, which could result in potential liability and litigation.

Current and future governmental and industry standards may significantly limit our business opportunities.

Technology standards are important in the audio and video industry as they help to assure compatibility across a system or series of products. Generally, standards adoption occurs on either a mandatory basis, requiring a particular technology to be available in a particular product or medium, or an optional basis, meaning that a particular technology may be, but is not required to be, utilized. If standards are re-examined or a new standard is developed in which we are not included, our growth in that area of our business could be significantly lower than expected.

As new technologies and entertainment media emerge, new standards relating to these technologies or media may develop. New standards may also emerge in existing markets that are currently characterized by competing formats, such as the market for PCs. We may not be successful in our efforts to include our technology in any such standards.

Our activities to advertise, market and sell our services directly to consumers are highly regulated by constantly evolving state and federal laws and regulations.

We engage in various advertising, marketing and other promotional activities. For instance, in the past, we have offered gift subscriptions and mail-in-rebates to consumers, which are subject to state and federal laws and regulations. A constantly evolving network of state and federal laws is increasingly regulating these promotional activities. Additionally, we enter into subscription service contracts directly with consumers which govern both our provision of and the consumers' payment for the TiVo service. For example, consumers who activate new monthly subscriptions to the TiVo service may be required to commit to pay for the TiVo service for a minimum of one year or be subject to an early termination fee if they terminate prior to the

expiration of their commitment period. If the terms of our subscription service contracts with consumers, such as our imposition of an early termination fee, or our previously offered rebate or gift subscription programs were to violate state or federal laws or regulations, we could be subject to suit, penalties, enforcement actions, and/or negative publicity in which case our business would be harmed.

Some software we provide may be subject to "open source" licenses, which may restrict how we use or distribute our software or require that we release the source code of certain products subject to those licenses.

Some of the products we support and some of our proprietary technologies incorporate open source software such as open source codecs that may be subject to the Lesser Gnu Public License or other open source licenses. The Lesser Gnu Public License and other open source licenses may require that source code subject to the license be released or made available to the public. Such open source licenses may mandate that software developed based on source code that is subject to the open source license, or combined in specific ways with such open source software, become subject to the open source license. We take steps to ensure that proprietary software we do not wish to disclose is not combined with, or does not incorporate, open source software in ways that would require such proprietary software to be subject to an open source license. However, few courts have interpreted the Lesser Gnu Public License or other open source licenses, and the manner in which these licenses may be interpreted and enforced is therefore subject to some uncertainty. We often take steps to disclose source code for which disclosure is required under an open source license, but it is possible that we have or will make mistakes in doing so, which could negatively impact our brand or our adoption in the community, or could expose us to additional liability. In addition, we rely on multiple software programmers to design our proprietary products and technologies. Although we take steps to ensure that our programmers (both internal and outsourced) do not include open source software in products and technologies we intend to keep proprietary, we cannot be certain that open source software is not incorporated into products and technologies we intend to keep proprietary. In the event that portions of our proprietary technology are determined to be subject to an open source license, or are intentionally released under an open source license, we could be required to publicly release the relevant portions of our source code, which could reduce or eliminate our ability to commercialize our products and technologies. Also, in relying on multiple software programmers to design products and technologies that we intend, or ultimately end up releasing in the open source community, we may discover that one or multiple such programmers have included code or language that would be embarrassing to us, which could negatively impact our brand or our adoption in the community, or could expose us to additional liability. Such additional liability could include claims that result in litigation, require us to seek licenses from third-parties in order to keep offering our software, require us to re-engineer our software, require us to release proprietary source code, require us to provide indemnification or otherwise subject us to liability to a customer or supplier, or require us to discontinue the sale of a product in the event re-engineering cannot be accomplished in a timely manner, any of which could adversely affect our business.

Risks relating to Ownership of our Common Stock

Our financial and operating results may vary, which may cause the price of our common stock to decline.

Our quarterly operating results have fluctuated in the past and are likely to do so in the future. Because our operating results are difficult to predict, one should not rely on quarterly or annual comparisons of our results of operations as an indication of our future performance. Factors that could cause our operating results to fluctuate during any period or that could adversely affect our ability to achieve our strategic objectives include those listed in this "Risk Factors" section of this report and the following:

- the timing of, and compliance with license or service agreements and the terms and conditions for payment to us of license or service fees under these agreements;
- fluctuations in our royalties caused by the pricing terms of certain of our license agreements;
- the amount of our product and service revenue;
- changes in the level of our operating expenses;
- the substantial research and development expenses that we have made and will continue to make on new products, as well as the uncertainty that such products will generate material revenue for the Company;
- delays in our introduction of new technologies or market acceptance of these new technologies through new license agreements;
- our ability to protect or enforce our intellectual property rights or the terms of our agreements;
- legal proceedings affecting our patents, patent applications or license agreements;
- the timing of the introduction by others of competing technologies and the extent to which new technologies replace technologies to which our solutions are targeted;
- changes in demand for semiconductor chips in the specific end markets in which we concentrate;
- changes in demand for camera-enabled devices including cell phones, security systems and personal computers;
- the timing of establishing new licensing arrangements and concluding older license agreements;
- the pace at which our older product sales decline compared to the pace at which our new product revenue grows

- meeting the requirements for revenue recognition under generally accepted accounting principles;
- changes in generally accepted accounting principles including new accounting standards which may materially affect our revenue recognition and the comparability between revenue recognition and cash flow from customer royalties;
- cyclical fluctuations in semiconductor and consumer electronics markets generally;
- our ability to execute and complete successfully the contemplated separation transaction;
- expenses related to and the financial impact of possible acquisitions of other businesses and the integration of such businesses;
- expenses related to and the financial impact of the disposition of businesses, including post-closing indemnification obligations; and
- adverse changes in the level of economic activity in the U.S. or other major economies in which we do business as a result of the threat of terrorism, military actions taken by the U.S. or its allies, or generally weak and uncertain economic and industry conditions.

Due to fluctuations in our operating results, reports from market and security analysts, litigation-related developments, and other factors, the price at which our common stock will trade is likely to continue to be highly volatile. In future periods, if our revenue, royalties, cash flows or operating results are below the estimates or expectations of public market analysts and investors, our stock price could decline.

Seasonal trends may cause our quarterly operating results to fluctuate and our inability to forecast these trends may adversely affect the market price of our common stock.

Although predicting consumer demand for our products is very difficult, new consumer subscriptions for products and services, such as TiVo Service have traditionally been higher during and immediately after the Christmas holiday shopping season than during other times of the year. If we are unable to accurately forecast and respond to consumer demand for our products, our reputation and brand will suffer and the market price of our common stock would likely fall.

We may not pay dividends or pay dividends at a consistent rate, and any decrease in or suspension of the dividend could cause our stock price to decline.

We anticipate that all dividends and stock repurchases will be paid out of our cash, cash equivalents and short-term investments. The payment of future cash dividends is subject to the final determination by our Board of Directors based on a number of factors, including our earnings, financial condition, actual and forecasted cash flows, capital resources and capital requirements, alternative uses of capital including business combinations, economic condition and other factors considered relevant by management and the Board of Directors. In July 2020, the Board declared a cash dividend of $0.05 per share, which reflects a reduction of Xperi’s historical quarterly dividend of $0.20 per share, and such reduction was primarily based on revised capital allocation strategy following the Mergers. Any decrease in the amount of the dividend, or suspension or discontinuance of payment of a dividend, could cause our stock price to decline.

Our stock repurchase program could increase the volatility of the price of our common stock, and the program may be suspended or terminated at any time, which may cause the trading price of our common stock to decline.

In June 2020, our Board of Directors authorized a stock repurchase program to repurchase up to $150 million of our outstanding shares of common stock dependent on market conditions, share price and other factors. As of June 30, 2020, the total amount available for repurchase under the plan was $135 million. The amount of repurchases under our stock repurchase program will vary. The timing of repurchases is at our discretion and the program may be suspended or discontinued at any time. Any suspension or discontinuation could cause the market price of our stock to decline. The timing of repurchases pursuant to our stock repurchase program could affect our stock price and increase its volatility. There can be no assurance that any stock repurchases will enhance stockholder value because the market price of our common stock may decline below the levels at which we effected repurchases. Furthermore, we may engage in mergers, acquisitions, or other activity that could result in us reducing or discontinuing share repurchases for a period of time. Finally, the terms of our current or future debt agreements could limit our ability to repurchase shares.

Provisions of our certificate of incorporation and bylaws or Delaware law might delay or prevent a change of control transaction and depress the market price of our stock.

Various provisions of our certificate of incorporation and bylaws might have the effect of making it more difficult for a third party to acquire, or discouraging a third party from attempting to acquire, control of our company. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock. Certain of these provisions eliminate cumulative voting in the election of directors, authorize the board to issue “blank check” preferred stock, prohibit stockholder action by written consent, eliminate the right of stockholders to call special meetings, and establish advance notice

procedures for director nominations by stockholders and the submission of other proposals for consideration at stockholder meetings. We are also subject to provisions of Delaware law that could delay or make more difficult a merger, tender offer or proxy contest involving our company. In particular, Section 203 of the Delaware General Corporation Law prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years unless specific conditions are met. Any of these provisions could have the effect of delaying, deferring or preventing a change in control, including without limitation, discouraging a proxy contest or making more difficult the acquisition of a substantial block of our common stock.

Decreased effectiveness of stock-based compensation could adversely affect our ability to attract and retain employees.

We have historically used stock options, restricted stock grants and other forms of stock-based compensation as key components of employee compensation in order to align employees' interests with the interests of our stockholders, encourage employee retention and provide competitive compensation and benefit packages. We incur significant compensation costs associated with our stock-based compensation programs. Failure to obtain stockholder approval of equity compensation plans or changes to the plans could make it harder or more expensive for us to grant stock-based compensation to employees in the future. As a result, we may find it difficult to attract, retain and motivate employees, and any such difficulty could have a materially adverse impact on our business.

Use of our common stock for future acquisitions may be limited.

Our ability to use common stock for future acquisitions without triggering an ownership change for the purposes of Sections 382 and 383 of the Code will likely be limited for three (3) years following the Mergers. To the extent that we are unable to use our common stock to make future acquisitions, our ability to grow through acquisitions may be limited by the extent to which we are able to raise capital through debt, equity financings or operational growth. Reliance on internally generated cash or debt to complete acquisitions could substantially limit our operational and financial flexibility. If we are unable to obtain additional capital on acceptable terms, we may be required to reduce the scope of any expansion or redirect resources committed to internal purposes. Inability to use our common stock in acquisitions may hinder our ability to actively make future acquisitions and recruit talent through acquisitions and restricts the flexibility in which we can make acquisition bids.

Stock transfer restrictions in our certificate of incorporation may act as an anti-takeover device.

Our certificate of incorporation includes certain transfer restrictions intended to preserve certain of our tax attributes. Such transfer restrictions will apply to future transfers made by 4.91% stockholders, transferees related to a 4.91% stockholder, transferees acting in coordination with a 4.91% stockholder, or transfers that would result in a stockholder becoming a 4.91% stockholder in order to avoid potential limitation of such tax attributes pursuant to Section 382 of the Code. Such transfer restrictions will expire on the earlier of (i) the repeal of Section 382 or any successor statute if our board of directors determines that such restrictions are no longer necessary or desirable for the preservation of certain tax benefits, (ii) the beginning of a taxable year to which our board of directors determines that no tax benefits may be carried forward, (iii) the third anniversary of the Mergers, or (iv) such other date as our board of directors shall fix in accordance with the certificate of incorporation.

The transfer restrictions described above could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, a large block of our common stock. This may adversely affect the marketability of our common stock by discouraging existing or potential investors from acquiring our stock or additional shares of our stock. It is also possible that the transfer restrictions could delay or frustrate the removal of incumbent directors and could make more difficult a merger, tender offer or proxy contest involving us, or impede an attempt to acquire a significant or controlling interest in us, even if such events might be beneficial to us and our stockholders.

Our amended and restated certificate of incorporation contains forum limitations for certain disputes between us and our stockholders that could limit the ability of stockholders to bring claims against us and our directors, officers and employees in jurisdictions preferred by stockholders.

Our charter provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for (i) any derivative lawsuit brought on our stockholders, (ii) any lawsuit against our current or former directors, officers, employees, stockholders or agents asserting a breach of a duty (including any fiduciary duty) owed by any such current or former director, officer, stockholder, employee or agent to us or our stockholders, (iii) any lawsuit asserting a claim against us or any of our current or former director, officer, employee, stockholder or agent arising out of or relating to any provision of the DGCL, our charter or our bylaws (each, as in effect from time to time), or (iv) any lawsuit asserting a claim against us or any of our current or former director, officer, employee, stockholder or agent governed by the internal affairs doctrine of the State of Delaware. Our charter also provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America are the sole and exclusive

forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. The foregoing forum provisions may prevent or limit a stockholder's ability to file a lawsuit in a judicial forum that it prefers for disputes with us or our directors, officers, employees, stockholders or agents, which may discourage such lawsuits, make them more difficult or expensive to pursue, and result in outcomes that are less favorable to such stockholders than outcomes that may have been attainable in other jurisdictions.

In addition, notwithstanding the inclusion of the foregoing forum provisions in the charter, courts may find the foregoing forum provisions to be inapplicable or unenforceable in certain cases that the foregoing forum provisions purport to address, including claims brought under the Securities Act. If this were to occur in any particular lawsuit, we may incur additional costs associated with resolving such lawsuit in other jurisdictions or resolving lawsuits involving similar claims in multiple jurisdictions, all of which could harm its business, results of operations, and financial condition.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Items 2(a) and 2(b) are not applicable.

(c) Stock Repurchases

(Shares in thousands)	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of our share repurchase program	Approximate dollar value of shares that may yet be purchased under our share repurchase program (a)
2020				
April	-	$ -	-	
May	-	-	-	
Jun	1,078	13.92	1,078	
Total	1,078	$ 13.92	1,078	$135.0 million

(a) Calculated as of June 30, 2020. On June 12, 2020, our Board of Directors authorized a stock repurchase program providing for the repurchase of up to $150 million of the Company's common stock. The timing, price and volume of repurchases will be based on market conditions, relevant securities laws and other factors. The stock repurchases may be made from time to time, through solicited or unsolicited transactions in the open market, in privately negotiated transactions, or pursuant to a Rule 10b5-1 plan. The program may be discontinued or amended at any time and has no specified expiration date. All repurchases in the three months ended June 30, 2020 were made under this plan.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Not applicable.

Item 6. Exhibits

Exhibit Number	Exhibit Title
3.1	Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
3.2	Amended and Restated Bylaws of the Company (incorporated by reference to Exhibit 3.2 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
4.1	Indenture, dated as of September 22, 2014 by and between TiVo Solutions Inc. and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 of TiVo Solutions Inc.'s Current Report on Form 8-K, filed with the SEC on September 23, 2014 (File No. 000-27141))
4.2	First Supplemental Indenture, dated as of September 7, 2016 by and among TiVo Solutions Inc., TiVo and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.2 of TiVo's Current Report on Form 8-K filed with the SEC on September 8, 2016 (File No. 001-37870))
4.3	Second Supplemental Indenture, dated June 1, 2020, by and between TiVo Solutions Inc., TiVo and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.3 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.1	Credit Agreement, dated as of June 1, 2020, among the Company, the lenders party thereto and Bank of America, N.A., as administrative agent and collateral agent (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.2	Guaranty, dated as of June 1, 2020, among Xperi, TiVo, the other subsidiary guarantors party thereto and Bank of America, N.A., as administrative agent (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.3	Security Agreement, dated as of June 1, 2020, among the Company, the other pledgors party thereto and Bank of America, N.A., as collateral agent (incorporated by reference to Exhibit 10.3 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.4	Xperi Holding Corporation 2020 Equity Incentive Plan (incorporated by reference to Exhibit 4.10 of the Company's Registration Statement on Form S-8 filed with the SEC on June 1, 2020 (File No. 333-238846))
10.5	Xperi Holding Corporation 2020 Employee Stock Purchase Plan (incorporated by reference to Exhibit 4.11 of the Company's Registration Statement on Form S-8 filed with the SEC on June 1, 2020 (File No. 333-238846))
10.6	Form of Indemnification Agreement for Company Directors, Officers, and Key Employees (incorporated by reference to Exhibit 10.4 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.7	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement for the Xperi Holding Corporation 2020 Equity Incentive Plan (incorporated by reference to Exhibit 10.12 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.8	Form of Stock Option Grant Notice and Stock Option Agreement for the Xperi Holding Corporation 2020 Equity Incentive Plan (incorporated by reference to Exhibit 10.13 of the Company's Current Report on Form 8-K filed with the SEC on June 1, 2020 (File No. 001-39304))
10.9	TiVo Corporation 2008 Equity Incentive Plan (f/k/a the "Rovi Corporation 2008 Equity Incentive Plan") (incorporated by reference to Annex A to the Definitive Proxy Statement on Schedule 14A of TiVo Corporation, filed March 15, 2019 (File No. 001-37870))
10.10	TiVo Inc. Amended and Restated 2008 Equity Incentive Award Plan (now named the "TiVo Corporation Titan Equity Incentive Award Plan") (incorporated by reference to Exhibit 4.7 to Registration Statement on Form S-8 of TiVo Corporation, filed September 9, 2016 (File No. 333-213578))
10.11	Xperi Corporation Seventh Amended and Restated 2003 Equity Incentive Plan and Amendment No. 1 (incorporated by reference to Appendices A and B to Additional Definitive Proxy Soliciting Materials on Schedule 14A of Xperi Corporation, filed April 18, 2018 (File No. 001-37956))
10.12	DTS, Inc. 2014 New Employee Incentive Plan (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of DTS, Inc., filed August 20, 2014 (File No. 000-50335))

10.13	Amendment No. 1 to the DTS, Inc. 2014 New Employee Incentive Plan (incorporated by reference to Exhibit 99.3 to Registration Statement on Form S-8 of DTS, Inc., filed August 10, 2015 (File No. 333-206283))
10.14	Amendment No. 2 to the DTS, Inc. 2014 New Employee Incentive Plan (incorporated by reference to Exhibit 99.3 to Registration Statement on Form S-8 of DTS, Inc., filed November 9, 2015 (File No. 333-207899))
10.15	DTS, Inc. 2012 Equity Incentive Plan and Amendment No. 1 (incorporated by reference to Appendix A to Definitive Proxy Statement on Schedule 14A of DTS, Inc., filed April 14, 2015 (File No. 000-50335))
10.16	SRS Labs, Inc. 2006 Stock Incentive Plan, as amended and restated on August 9, 2012 (incorporated by reference to Exhibit 4.4 to Registration Statement on Form S-8 of DTS, Inc., filed August 13, 2012 (File No. 333-183289))
10.17	DTS, Inc. 2003 Equity Incentive Plan, as amended on May 9, 2005, May 15, 2008, February 19, 2009, February 15, 2010, June 3, 2010 and October 8, 2010 (incorporated by reference to Exhibit 10.1 to Form 10-Q of DTS, Inc., filed November 8, 2010 (File No. 000-50335))
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934
32.1	Certification of the Chief Executive Officer and Chief Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Dated: August 10, 2020

XPERI HOLDING CORPORATION

By: /s/ Jon Kirchner
Jon Kirchner
Chief Executive Officer and President

Exhibit 31.1

Certification of the Chief Executive Officer
Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934

I, Jon Kirchner, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Xperi Holding Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: August 10, 2020

/s/ Jon Kirchner
Jon Kirchner
Chief Executive Officer and President

Exhibit 31.2

Certification of the Chief Financial Officer
Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934

I, Robert Andersen, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Xperi Holding Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: August 10, 2020

/s/ Robert Andersen
Robert Andersen
Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
RULE 13a-14(b) OF THE SECURITIES EXCHANGE ACT OF 1934
AND 18 U.S.C. SECTION 1350

In connection with the Quarterly Report of Xperi Holding Corporation, a Delaware corporation (the “Company”), on Form 10-Q for the three months ended June 30, 2020 as filed with the Securities and Exchange Commission (the “Report”), I, Jon Kirchner, Chief Executive Officer and President, certify, pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Jon Kirchner
Jon Kirchner
Chief Executive Officer and President
August 10, 2020

CERTIFICATION PURSUANT TO
RULE 13a-14(b) OF THE SECURITIES EXCHANGE ACT OF 1934
AND 18 U.S.C. SECTION 1350

In connection with the Quarterly Report of Xperi Holding Corporation, a Delaware corporation (the “Company”), on Form 10-Q for the three months ended June 30, 2020 as filed with the Securities and Exchange Commission (the “Report”), I, Robert Andersen, Chief Financial Officer of the Company, certify, pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Robert Andersen
Robert Andersen
Chief Financial Officer
August 10, 2020

A signed original of this written statement required by Rule 13a-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350 has been provided to the Registrant and will be retained by the Registrant and furnished to the Securities and Exchange Commission or its staff upon request.