

Section 1: 10-Q (10-Q)

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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 March 31, 2018

or

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

For the transition period from _____ to _____

Commission file number: 001-37870

TiVo Corporation

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

61-1793262

(I.R.S. Employer Identification No.)

2160 Gold Street, San Jose, CA 95002

(Address of principal executive offices, including zip code)

(408) 519-9100

(Registrant's telephone number, including area code)

N/A

(Former name, former address and former fiscal year, if changed since last report)

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post 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 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

(Do not check if a smaller reporting company)

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

(in thousands)

Outstanding as of

Class

May 4, 2018

Common Stock

122,963

**TIVO CORPORATION AND SUBSIDIARIES
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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

TIVO CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except per share amounts)

	March 31, 2018	December 31, 2017
ASSETS	(Unaudited)	
Current assets:		
Cash and cash equivalents	\$ 140,294	\$ 128,965
Short-term marketable securities	148,226	140,866
Accounts receivable, net	188,332	180,768
Inventory	13,164	11,581
Prepaid expenses and other current assets	34,827	40,719
Total current assets	524,843	502,899
Long-term marketable securities	73,045	82,711
Property and equipment, net	54,220	55,244
Intangible assets, net	602,729	643,924
Goodwill	1,813,518	1,813,227
Other long-term assets	60,048	65,673
Total assets	<u>\$ 3,128,403</u>	<u>\$ 3,163,678</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	\$ 105,291	\$ 135,852
Unearned revenue	44,928	55,393
Current portion of long-term debt	7,000	7,000
Total current liabilities	157,219	198,245
Taxes payable, less current portion	4,004	3,947
Unearned revenue, less current portion	56,888	58,283
Long-term debt, less current portion	978,280	976,095
Deferred tax liabilities, net	50,790	50,356
Other long-term liabilities	17,315	23,736
Total liabilities	1,264,496	1,310,662
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Preferred stock, \$0.001 par value, 5,000 shares authorized; no shares issued or outstanding	—	—
Common stock, \$0.001 par value, 250,000 shares authorized; 124,389 shares issued and 122,924 shares outstanding as of March 31, 2018; and 123,385 shares issued and 122,116 shares outstanding as of December 31, 2017	124	123
Treasury stock, 1,465 shares and 1,269 shares as of March 31, 2018 and December 31, 2017, respectively, at cost	(27,634)	(24,740)
Additional paid-in capital	3,272,119	3,273,022
Accumulated other comprehensive loss	(1,746)	(2,738)
Accumulated deficit	(1,378,956)	(1,392,651)
Total stockholders' equity	1,863,907	1,853,016
Total liabilities and stockholders' equity	<u>\$ 3,128,403</u>	<u>\$ 3,163,678</u>

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

TIVO CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Revenues, net:		
Licensing, services and software	\$ 186,158	\$ 190,550
Hardware	3,679	15,214
Total Revenues, net	189,837	205,764
Costs and expenses:		
Cost of licensing, services and software revenues, excluding depreciation and amortization of intangible assets	43,215	42,306
Cost of hardware revenues, excluding depreciation and amortization of intangible assets	5,051	14,221
Research and development	48,430	48,922
Selling, general and administrative	51,082	53,949
Depreciation	5,141	5,472
Amortization of intangible assets	41,412	41,700
Restructuring charges	4,546	4,539
Total costs and expenses	198,877	211,109
Operating loss	(9,040)	(5,345)
Interest expense	(11,634)	(10,264)
Interest income and other, net	1,566	(63)
Gain on interest rate swaps	4,311	521
TiVo Acquisition litigation	—	(12,906)
Loss on debt extinguishment	—	(108)
Loss on debt modification	—	(929)
Loss from continuing operations before income taxes	(14,797)	(29,094)
Income tax expense	4,217	5,567
Loss from continuing operations, net of tax	(19,014)	(34,661)
Income from discontinued operations, net of tax	1,297	—
Net loss	<u>\$ (17,717)</u>	<u>\$ (34,661)</u>
Basic loss per share:		
Continuing operations	\$ (0.16)	\$ (0.29)
Discontinued operations	0.01	—
Basic loss per share	<u>\$ (0.15)</u>	<u>\$ (0.29)</u>
Weighted average shares used in computing basic per share amounts	122,080	118,813
Diluted loss per share:		
Continuing operations	\$ (0.16)	\$ (0.29)
Discontinued operations	0.01	—
Diluted loss per share	<u>\$ (0.15)</u>	<u>\$ (0.29)</u>
Weighted average shares used in computing diluted per share amounts	122,080	118,813
Dividends declared per share	\$ 0.18	\$ 0.18

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

TIVO CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Net loss	\$ (17,717)	\$ (34,661)
Other comprehensive income, net of tax:		
Change in foreign currency translation adjustment	1,109	1,855
Unrealized (losses) gains on marketable securities		
Change in unrealized (losses) gains on marketable securities	(333)	222
Less: Reclassification adjustment	216	—
Other comprehensive income, net of tax	992	2,077
Comprehensive loss	<u>\$ (16,725)</u>	<u>\$ (32,584)</u>

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

TIVO CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2018	2017
Cash flows from operating activities:		
Net loss	\$ (17,717)	\$ (34,661)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Income from discontinued operations, net of tax	(1,297)	—
Depreciation	5,141	5,472
Amortization of intangible assets	41,412	41,700
Amortization of convertible note discount and note issuance costs	3,813	3,628
Restructuring charges	4,546	4,539
Equity-based compensation	12,024	14,025
Change in fair value of interest rate swaps	(5,708)	(2,786)
TiVo Acquisition litigation	—	12,906
Loss on debt extinguishment	—	108
Loss on debt modification	—	929
Deferred income taxes	(119)	736
Other operating, net	1,899	549
Changes in operating assets and liabilities:		
Accounts receivable	16,027	(27,997)
Inventory	(1,583)	1,623
Prepaid expenses and other current assets and other long-term assets	5,199	(2,537)
Accounts payable and accrued expenses and other long-term liabilities	(24,306)	(34,884)
Taxes payable	(2,951)	282
Unearned revenue	(652)	(3,365)
Net cash provided by (used in) operating activities of continuing operations	35,728	(19,733)
Net cash provided by operating activities of discontinued operations	—	—
Net cash provided by (used in) operating activities	35,728	(19,733)
Cash flows from investing activities:		
Payments for purchase of short- and long-term marketable securities	(36,091)	(72,371)
Proceeds from sales or maturities of short- and long-term marketable securities	38,168	92,221
Return of cash paid for TiVo Acquisition	—	25,143
Payments for purchase of property and equipment	(7,917)	(7,100)
Payments for purchase of patents	—	(1,750)
Other investing, net	11	(29)
Net cash (used in) provided by investing activities	(5,829)	36,114
Cash flows from financing activities:		
Proceeds from issuance of long-term debt, net of issuance costs	—	681,552
Principal payments on long-term debt	(1,750)	(684,250)
Payments for dividends	(22,161)	(21,662)
Payments for withholding taxes related to net settlement of restricted awards	(2,894)	(9,621)
Proceeds from employee stock purchase plan and exercise of employee stock options	7,574	11,721
Net cash used in financing activities	(19,231)	(22,260)
Effect of exchange rate changes on cash and cash equivalents	661	888
Net increase (decrease) in cash and cash equivalents	11,329	(4,991)
Cash and cash equivalents at beginning of period	128,965	192,627
Cash and cash equivalents at end of period	\$ 140,294	\$ 187,636

The accompanying notes are an integral part of these Condensed Consolidated Financial Statements.

TIVO CORPORATION AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(1) Basis of Presentation and Summary of Significant Accounting Policies

Description of Business

On April 28, 2016, Rovi Corporation ("Rovi") and TiVo Inc. (renamed TiVo Solutions Inc. ("TiVo Solutions")) entered into an Agreement and Plan of Merger (the "Merger Agreement") for Rovi to acquire TiVo Solutions in a cash and stock transaction (the "TiVo Acquisition"). Following consummation of the TiVo Acquisition on September 7, 2016 (the "TiVo Acquisition Date"), TiVo Corporation (the "Company"), a Delaware corporation founded in April 2016 as Titan Technologies Corporation and then a wholly-owned subsidiary of Rovi, owns both Rovi and TiVo Solutions.

The Company is a global leader in media and entertainment products that power consumer entertainment experiences and enable its customers to deepen and further monetize their audience relationships. The Company provides a broad set of intellectual property, cloud-based services and set-top box solutions that enable people to find and enjoy online video, television, movies and music entertainment, including content discovery through device embedded and cloud-based user experience ("UX"), including interactive program guides ("IPGs"), digital video recorders ("DVRs"), natural language voice and text search, cloud-based recommendations services and our extensive entertainment metadata (i.e., descriptive information, promotional images or other content that describes or relates to television shows, videos, movies, sports, music, books, games or other entertainment content). The Company's integrated platform includes software and cloud-based services that provide an all-in-one approach for navigating a fragmented universe of content by seamlessly combining live, recorded, video-on-demand ("VOD") and over-the-top ("OTT") content into one intuitive user interface with simple universal search, discovery, viewing and recording, to create a unified viewing experience. The Company distributes its products through service provider relationships, integrated into third-party devices and directly to retail consumers. The Company also offers data analytics solutions, including advertising and programming promotion optimizers, which enable advanced audience targeting in linear television advertising. Solutions are sold globally to cable, satellite, consumer electronics ("CE"), entertainment, media and online distribution companies, and, in the United States, we sell a suite of DVR and whole home media products and services directly to retail consumers.

Basis of Presentation and Principles of Consolidation

The accompanying unaudited Condensed Consolidated Financial Statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission. Certain information and disclosures normally included in financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been condensed or omitted in accordance with such rules and regulations. However, the Company believes the disclosures made are adequate to make the information not misleading. In the opinion of management, the accompanying unaudited Condensed Consolidated Financial Statements reflect all adjustments, consisting only of normal recurring adjustments, which in the opinion of management, are considered necessary to present fairly the results for the periods presented.

The information contained in this Quarterly Report on Form 10-Q should be read in conjunction with the audited financial statements and notes thereto and other disclosures contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2017. The Condensed Consolidated Statements of Operations, Condensed Consolidated Statements of Comprehensive Loss and the Condensed Consolidated Statements of Cash Flows for the interim periods presented are not necessarily indicative of the results to be expected for the year ending December 31, 2018, for any future year, or for any other future interim period.

The accompanying Condensed Consolidated Financial Statements include the accounts of TiVo Corporation and subsidiaries and affiliates in which the Company has a controlling financial interest after the elimination of intercompany accounts and transactions.

Use of Estimates

The preparation of the Condensed Consolidated Financial Statements in conformity with U.S. GAAP requires management to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities and related disclosures at the date of the financial statements and the results of operations for the reporting period. On an ongoing basis, management evaluates its estimates, including those related to revenue recognition, long-lived asset impairment, including goodwill and intangible assets, equity-based compensation and income taxes. Actual results may differ from those estimates.

Concentrations of Risk

The TiVo service is enabled through the use of a DVR manufactured by a third-party contract manufacturer. The Company also relies on third parties with whom it outsources supply-chain activities related to inventory warehousing, order fulfillment, distribution and other direct sales logistics. The Company 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 any of these parties breaches or terminates their agreement with the Company or otherwise fails to perform their obligations in a timely manner, the Company may be delayed or prevented from commercializing its products and services.

In instances where a supply agreement does not exist and suppliers fail to perform their obligations, the Company may be unable to find alternative suppliers or deliver its products and services to its customers on time, if at all. The Company does not have a long-term written supply agreement with Broadcom Corporation, the sole supplier of the system controller for its DVR.

Accounts Receivable

The timing of revenue recognition may differ from the timing of invoicing to customers. The Company records a receivable when revenue is recognized prior to cash collection. A receivable related to revenue recognized for multi-year licenses is recognized when the Company has an unconditional right to invoice and receive payment in the future related to those licenses.

Payment terms and conditions vary by contract type, location of customer and the products or services offered, although terms generally require payment from a customer within 30 to 60 days. When the timing of revenue recognition differs from the timing of cash collection, an evaluation is performed to determine whether the contract includes a significant financing component. As the primary purpose of our invoicing terms is to provide customers with simplified and predictable ways of purchasing our products and services, significant financing components are generally not identified in the Company's contracts with customers.

The Company performs ongoing credit evaluations of its customers. The Company reviews its accounts receivable to identify potential collection issues. A specific allowance for doubtful accounts is recorded when warranted by specific customer circumstances, such as in the case of a bankruptcy filing, a deterioration in the customer's operating results or financial position or the past due status of a receivable based on its contractual payment terms. If there are subsequent changes in circumstances related to the specific customer, adjustments to recoverability estimates are recorded. For accounts receivable not specifically reserved, an allowance for doubtful accounts is recorded based on historical loss experience and other currently available evidence. Accounts receivable deemed uncollectible are charged off when collection efforts have been exhausted.

Contract Assets

Contract assets primarily consist of revenue recognized in excess of the amount billed to the customer, limited to net realizable value and deferred engineering costs for significant software customization or modification and set-up services to the extent it is deemed recoverable. These contract assets are transferred to receivables when the right to payment become unconditional.

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. The incremental costs of obtaining a contract with a customer are recognized as an asset when the expected period of benefit is one year or more. The incremental costs of obtaining a contract with a customer are amortized on a straight-line basis over a period of time commensurate with the period of benefit, generally three to five years, which considers the transfer of goods or services to which the assets relate, technological developments during the period of benefit, customer history and other factors. The period of benefit is generally the estimated life of the customer relationship if renewals are expected, and may exceed the contract term. Amortization expense is included in Selling, general and administrative expenses in the Condensed Consolidated Statements of Operations.

Contract assets are classified as current or noncurrent in the Condensed Consolidated Balance Sheets based on when the asset is expected to be realized. Contract assets are subject to periodic impairment reviews.

Contract Liabilities, including Unearned Revenue

Contract liabilities are mainly comprised of unearned revenue related to consumer lifetime subscriptions to the TiVo service and multi-period licensing or cloud services programs and other offerings for which the Company is paid in advance of when control of the good or service is transferred. Unearned revenue also includes amounts related to professional services to be performed in the future. Unearned revenue arises when cash payments are received or due, including amounts which are refundable, in advance of performance. Contract liabilities exclude amounts expected to be refunded. Payment terms and conditions vary by contract type, location of customer and the products or services offered. For certain products or services and customer types, payment before the products or services are delivered to the customer is required.

Revenue Recognition

General

Revenue is recognized on the transfer of control of promised goods or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products 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 taxes collected from customers which are subsequently remitted to governmental authorities.

Depending on the terms of the contract, a portion of the consideration received may be deferred because of a requirement to satisfy a future obligation. Stand-alone selling price for separate performance obligations is based on observable prices charged to customers for goods or services sold separately or the cost-plus-a-margin approach when observable prices are not available, considering overall pricing objectives.

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. The allocation of transaction price among performance obligations in a contract may impact the amount and timing of revenue recognized in the Condensed 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 basis. Contract modifications that result in goods or services that are distinct from the previously existing contract are accounted for prospectively.

Variable Consideration

When a contract with a customer includes a variable transaction price, an estimate of the consideration to 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, the 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 the information (historical, current and forecast) that is reasonably available at contract inception. The effect 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 variable consideration are allocated to the performance obligations in the contract on the same basis as at contract inception.

Certain payments to retailers and distributors, such as market development funds and revenue shares, are treated as a reduction of the transaction price, and therefore revenue, rather than Selling, general and administrative expense. The reduction

of revenue is recognized at the later of when revenue is recognized for the transfer of the related goods or services to the customer or when the Company pays or promises to pay the consideration.

When variable consideration is in the form of a sales-based or usage-based royalty in exchange for a license of intellectual property, or when a license of intellectual property 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.

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 or the achievement of performance metrics. 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 the determination of whether to include estimated amounts in the transaction price.

Some hardware products are sold with a right of return and in other circumstances, other credits or incentives may be provided such as consideration (sales incentives) given to customers or resellers, which are accounted for as variable consideration when estimating the amount of contra revenue to recognize. Estimates of returns and credits 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, 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.

On an ongoing basis, management evaluates its estimates, inputs and assumptions related to revenue recognition. Using 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.

Nature of goods and services

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

Patent Licensing Agreements

The Company licenses its discovery patent portfolio to traditional pay TV providers, virtual service providers, OTT video providers, CE manufacturers and others. The Company licenses its patented technology portfolio under two revenue models: (i) fixed fee arrangements and (ii) per-unit royalty licenses.

The Company's long-term fixed-fee license agreements provide 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 related license agreement.

At times, the Company enters 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 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 and in what geographies these units were shipped, the number of units expected to be shipped in the future and in what geographies these units are expected to be shipped, as well as the licensing rate the Company generally receives for 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.

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

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 over the contractual term. The related cost of such services is capitalized to the extent it is deemed recoverable and amortized to cost of revenues 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 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 it provides the TiVo service 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 and that include 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 the 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 it does not host on a per-subscriber per-month basis due to the recognition constraint on intellectual property usage-based royalties.

Subscription Services Revenues

Subscription services revenues primarily consist of fees that provide customers access to one or more of the Company's hosted products such as its i-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 i-Guide 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 its 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 contract period.

Passport Revenues

The Company licenses its Passport IPG software product to pay TV providers in North and South America. The Company generally receives per-subscriber per-month fees for a license to its Passport IPG software and support. Due to the usage-based royalty provisions of the revenue recognition guidance, revenue is generally recognized in the month the customer uses the software.

Advertising

The Company generates advertising revenue through its IPGs. Advertising revenue is recognized when the related advertisement is provided. Advertising revenue is recorded net of agency commissions and revenue shares with service providers and CE manufacturers.

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 a limited number of retailers. For sales through TiVo.com, the customer receives a DVR and commits to either a minimum subscription period of one year or for the lifetime of the DVR. After the initial subscription period, customers have various pricing options when they renew their subscription. Customers have the right to return the DVR within 30 days of purchase. Customers have the right to cancel their subscription to the TiVo service within 30 days of subscription activation for a full refund.

Stand-alone selling price for the TiVo subscription service is established based on stand-alone sales of the service and varies by the length of the service period. The stand-alone selling price of the DVR is determined based on the price for which the Company would sell the DVR without any service commitment from the customer.

The transaction price allocated to the DVR is recognized as revenue on delivery and the transaction price allocated to the service is recognized as revenue ratably over the service period. Subscription revenues 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. As of March 31, 2018, the Company recognizes revenue for lifetime subscriptions over a 66-month period. The Company periodically reassesses the estimated useful life of the 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.

Shipping and handling costs associated with outbound freight after control of a DVR has transferred to a customer are accounted for as a fulfillment cost and are included in Cost of hardware revenues, excluding depreciation and amortization of intangible assets.

Recent Accounting Pronouncements

Standards Recently Adopted

In January 2017, the Financial Accounting Standards ("FASB") clarified the definition of a business. The clarified guidance provides a more defined framework to use in determining when a set of assets and activities constitute a business. The clarified definition was effective for the Company on January 1, 2018 and was applied on a prospective basis. Application of this guidance did not have an effect on the Condensed Consolidated Financial Statements.

In October 2016, the FASB amended its guidance on the tax effects of intra-entity transfers of assets other than inventory. The amended guidance requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The amendment was effective for the Company on January 1, 2018 and was applied on a modified retrospective basis. Application of this guidance did not have an effect on the Condensed Consolidated Financial Statements.

In August 2016, the FASB issued clarifying guidance on the presentation of eight specific cash flow issues for which previous guidance was either unclear or not specific. The clarified guidance was effective for the Company on January 1, 2018 and was applied on a retrospective basis. Application of this guidance did not have an effect on the Condensed Consolidated Financial Statements.

In March 2016, the FASB provided guidance for the derecognition of prepaid stored-value product liabilities, such as gift cards. Pursuant to this guidance, among other criteria, prepaid stored-value product liabilities are eligible to be derecognized when the likelihood of redemption becomes remote. The guidance was effective for the Company on January 1, 2018 and was applied using a modified retrospective approach. On adoption, the Company recorded a cumulative effect adjustment, net of tax effects, of \$2.2 million to reduce Accumulated deficit for prepaid stored-value product liabilities where the likelihood of redemption was deemed to be remote.

In May 2014, the FASB issued an amended accounting standard for revenue recognition. The core principle of the amended revenue recognition guidance is for an entity to recognize revenue to depict the transfer of promised goods or services to customers in amounts that reflect the consideration to which the entity expects to be entitled in exchange for those goods or services. The amendments also require enhanced disclosures about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contracts with customers. In addition, the FASB amended its guidance related to the capitalization and amortization of the incremental costs of obtaining a contract with a customer. The Company adopted the amended revenue and cost recognition guidance on January 1, 2018 using the modified retrospective transition approach. On adoption, the Company recorded a cumulative effect adjustment, net of tax effects, to reduce Accumulated deficit by \$27.9 million for the effects of the amended revenue recognition guidance and by \$1.3 million for the effects of capitalizing incremental costs to obtain contracts with customers. The differences giving rise to the cumulative effect adjustments are described in Note 5. Results for periods beginning after December 31, 2017 are presented under the amended revenue and cost recognition guidance, while prior period amounts were not restated and continue to be reported in accordance with the Company's previous revenue and cost recognition policies.

Standards Pending Adoption

In March 2017, the FASB shortened the amortization period for certain investments in callable debt securities held at a premium to the earliest call date. Application of the shortened amortization period is effective for the Company in the first quarter of 2019 on a modified retrospective basis, with early application permitted. The Company does not expect application of the shortened amortization period to have a material effect on its Condensed Consolidated Financial Statements.

In June 2016, the FASB issued updated guidance that requires entities to use a current expected credit loss model to measure credit-related impairments for financial instruments held at amortized cost. 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 collectibility. 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. The updated guidance is effective for the Company in the first quarter of 2020 and is effective using a modified retrospective approach for application of the current expected credit loss model to financial instruments and a prospective approach for credit losses on available-for-sale debt securities. Early application is permitted. The Company is evaluating the effect of application on its Condensed Consolidated Financial Statements.

In February 2016, the FASB issued a new accounting standard for leases. The new standard generally requires the recognition of operating and financing lease liabilities and corresponding right-of-use assets on the balance sheet. For operating leases, a lessee recognizes its total lease expense as an operating expense over the lease term. For financing leases, a lessee recognizes amortization of the right-of-use asset as an operating expense over the lease term separately from interest on the lease liability. The new standard is effective for the Company in the first quarter of 2019 using a modified retrospective approach, with early application permitted. The Company is evaluating the effect of application on its Condensed Consolidated Financial Statements and expects to recognize its existing operating lease commitments as operating lease liabilities and right-of-use assets.

(2) Acquisitions

TiVo Acquisition

On September 7, 2016, Rovi completed its acquisition of TiVo Solutions, a global leader in next-generation video technology and innovative cloud-based software-as-a-service solutions. TiVo Solutions' results of operations and cash flows have been included in the Condensed Consolidated Financial Statements for periods subsequent to September 7, 2016.

In November 2016, holders of 9.1 million shares of TiVo Solutions common stock outstanding at the TiVo Acquisition Date who did not vote to approve the TiVo Acquisition ("Dissenting Holders") filed a petition for appraisal pursuant to Section 262 of the Delaware General Corporation Law in the Court of Chancery of the State of Delaware (In re Appraisal of TiVo, Inc., C.A. No. 12909-CB (Del. Ch.)). On March 27, 2017, TiVo Corporation executed a settlement agreement with the Dissenting Holders to settle their claims for \$117.0 million, which was paid in cash in April 2017. In connection with the settlement, in March 2017, the exchange agent in the TiVo Acquisition returned \$25.1 million in cash related to the Dissenting Holders to TiVo Corporation. As the amount paid to Dissenting Holders resulted from a settlement other than a judgment from the Delaware Court of Chancery, a TiVo Acquisition litigation loss of \$12.9 million was recognized in the Condensed Consolidated Statements of Operations for the three months ended March 31, 2017.

(3) Discontinued Operations and Assets Held for Sale

In the three months ended March 31, 2018, the Company recognized Income from discontinued operations, net of tax of \$1.3 million as a result of the expiration of an indemnification associated with a previous business disposal.

(4) Financial Statement Details

Inventory (in thousands):

	March 31, 2018	December 31, 2017
Raw materials	\$ 1,460	\$ 1,846
Finished goods	11,704	9,735
Inventory	<u>\$ 13,164</u>	<u>\$ 11,581</u>

Property and equipment, net (in thousands):

	March 31, 2018	December 31, 2017
Computer software and equipment	\$ 151,438	\$ 150,098
Leasehold improvements	46,192	44,981
Furniture and fixtures	9,469	9,137
Property and equipment, gross	207,099	204,216
Less: Accumulated depreciation and amortization	(152,879)	(148,972)
Property and equipment, net	<u>\$ 54,220</u>	<u>\$ 55,244</u>

Accounts payable and accrued expenses (in thousands):

	March 31, 2018	December 31, 2017
Accounts payable	\$ 12,101	\$ 10,517
Accrued compensation and benefits	25,318	47,886
Other accrued liabilities	67,872	77,449
Accounts payable and accrued expenses	<u>\$ 105,291</u>	<u>\$ 135,852</u>

(5) Revenues

Adoption of Amended Revenue and Cost Recognition Guidance

The Company adopted the provisions of the amended revenue recognition guidance described in Note 1 using the modified retrospective transition approach on January 1, 2018. As such, the amended revenue recognition guidance was applied to those contracts which were not completed as of December 31, 2017. Results for periods beginning after December 31, 2017 are presented under the amended revenue recognition guidance, while prior period amounts were not restated and continue to be reported in accordance with our previous revenue recognition policies.

In addition, the Company adopted amended guidance related to the capitalization and amortization of incremental costs to obtain a contract with a customer and guidance for the de-recognition of prepaid stored-value product liabilities, such as gift cards, as described in Note 1 using the modified retrospective transition approach on January 1, 2018.

The cumulative effect of these changes on our Condensed Consolidated Balance Sheets on adoption was as follows (in thousands):

	December 31, 2017	Contracts with Customers	Costs to Obtain Contracts with Customers	De-recognition of Prepaid Stored Value Product Liabilities	January 1, 2018
Accounts receivable, net	\$ 180,768	\$ 24,177	\$ —	\$ —	\$ 204,945
Prepaid expenses and other current assets	40,719	(2,705)	525	—	38,539
Other long-term assets	65,673	(4,419)	819	—	62,073
Accounts payable and accrued expenses	(135,852)	—	—	2,155	(133,697)
Unearned revenue	(55,393)	11,208	—	—	(44,185)
Deferred tax liabilities, net	(50,356)	(348)	—	—	(50,704)
Accumulated deficit	1,392,651	(27,913)	(1,344)	(2,155)	1,361,239

The most significant impact of the amended revenue recognition guidance relates to our accounting for software arrangements. Under prior industry-specific software revenue recognition guidance, when the Company concluded it did not have vendor-specific objective evidence ("VSOE") of fair value for the undelivered elements of an arrangement, revenue was deferred until the last element without VSOE was delivered. The amended revenue recognition guidance eliminated the concept of VSOE of fair value. The amended revenue recognition guidance requires an evaluation of whether the undelivered elements are distinct performance obligations and, therefore, should each be recognized separately when delivered. On adoption of the amended revenue recognition guidance, the Company accounted for the software and support elements of the TiVo Solutions international MSO agreements as two distinct performance obligations. These agreements contain minimum guarantees, and on adoption \$34.4 million of these minimums were recorded as an increase in Accounts receivable, net and a reduction to Accumulated deficit as the software was delivered prior to the date of adoption.

The amended revenue recognition guidance also requires the Company to record revenue related to fixed-fee patent licensing agreements that do not provide the right to future patented technologies acquired by the Company during the term of the license when access to the existing patented technology is granted to the licensee. Under prior revenue recognition guidance, the Company recognized revenue from this type of fixed-fee license agreement on a straight-line basis over the term of the agreement. On adoption of the amended revenue recognition guidance, the Company recorded a \$10.2 million reduction in Unearned revenue and Accumulated deficit for this agreement.

The amended revenue recognition guidance includes specific guidance for contract modifications. Based on the nature of the modification, the accounting may be updated with a cumulative adjustment to revenue on the execution of the modification or updated prospectively as a result of the modification. For certain contract modifications, this accounting treatment differs from the accounting treatment in accordance with previous revenue recognition guidance.

Prior to the adoption of the amended revenue recognition guidance, the Company recognized revenue from per-unit royalty licenses with certain CE manufacturers and third party IPG providers in the period the licensee reported its sales to the Company, which was generally in the month or quarter after the underlying sales by the licensee occurred. On adoption of the amended revenue recognition guidance, revenue from per-unit royalty licenses is recognized in the period in which the licensee's sales are estimated to have occurred, limited to the amount of revenue that is not subject to a significant risk of reversal, which results in an adjustment to revenue when actual amounts are subsequently reported by the Company's licensees.

Pursuant to the amended cost capitalization guidance, incremental costs to obtain a contract with a customer are capitalized and amortized over a period of time commensurate with the expected period of benefit, which may exceed the contract term. Prior to the adoption of the amended cost capitalization guidance, the Company expensed incremental costs to obtain a contract with a customer as incurred.

The impact of adoption of the amended revenue and cost recognition guidance on our Condensed Consolidated Statements of Operations was as follows (in thousands):

	Three Months Ended March 31, 2018		
	As Reported	As If Applying Prior Guidance	Effect of Change Higher/(Lower)
Total Revenues, net	189,837	186,141	3,696
Cost of licensing, services and software revenues, excluding depreciation and amortization of intangible assets	43,215	43,730	(515)
Selling, general and administrative	51,082	51,165	(83)
Loss from continuing operations before income taxes	(14,797)	(19,091)	4,294
Income tax expense	4,217	4,605	(388)
Loss from continuing operations, net of tax	(19,014)	(23,696)	4,682

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 for 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.

Revenue Details

The following tables depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors by disaggregating revenue by product offering (in Note 15), contract-type and geographic area. These tables include revenue recognized from contracts with customers and revenue from other sources, including out-of-license settlements. As noted above, amounts for the three months ended March 31, 2017 have not been adjusted to reflect adoption of the amended revenue recognition guidance.

Customers representing 10% or more of Total Revenues, net were as follows:

	Three Months Ended March 31,	
	2018	2017
Virgin Media	16%	(a)
AT&T Inc. ("AT&T")	10%	14%

(a) Customer below 10% of Total Revenues, net for the period.

Substantially all of the Company's revenue from Virgin Media is reported in the Product segment and revenue from AT&T is reported in the Intellectual Property Licensing segment.

By segment, the pattern of revenue recognition was as follows (in thousands):

	Three Months Ended March 31, 2018		
	Product	Intellectual Property Licensing	Total Revenues, net
Goods and services transferred at a point in time	\$ 36,802	28,119	64,921
Goods and services transferred over time	80,050	42,850	122,900
Out-of-license settlements	—	2,016	2,016
Total Revenues, net	<u>\$ 116,852</u>	<u>\$ 72,985</u>	<u>\$ 189,837</u>

Revenue by geographic area was as follows (in thousands):

	Three Months Ended March 31, 2018
United States	\$ 118,935
United Kingdom	33,512
Rest of the world	37,390
Total Revenues, net	<u>\$ 189,837</u>

Revenue by geography is predominately based on the end user's location. Other than the United States and the United Kingdom, no country accounted for more than 10% of revenue for the three months ended March 31, 2018.

Accounts receivable, net (in thousands):

	March 31, 2018	December 31, 2017
Accounts receivable, gross	\$ 191,908	\$ 183,343
Less: Allowance for doubtful accounts	(3,576)	(2,575)
Accounts receivable, net	<u>\$ 188,332</u>	<u>\$ 180,768</u>

Customers representing 10% or more of Accounts receivable, net were as follows.

	March 31, 2018	December 31, 2017
AT&T	14%	28%
Virgin Media	10%	(a)

(a) Customer below 10% of Accounts receivable, net for the period.

Contract Balances

Contract assets primarily consist of revenue recognized in excess of the amount billed to the customer, limited to net realizable value and deferred engineering costs for significant software customization or modification and set-up services to the extent it is deemed recoverable. 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. Following adoption of the amended revenue recognition guidance, contract assets were recorded in the Condensed Consolidated Balance Sheets as follows (in thousands):

	March 31, 2018	January 1, 2018
Accounts receivable, net	\$ 62,862	\$ 68,858
Prepaid expenses and other current assets	1,372	1,167
Other long-term assets	7,018	6,783
Total contract assets, net	<u>\$ 71,252</u>	<u>\$ 76,808</u>

No impairment losses were recognized with respect to contract assets for the three months ended March 31, 2018.

Contract liabilities are mainly comprised of unearned revenue related to consumer lifetime subscriptions to the TiVo service and multi-period licensing or cloud services programs and other offerings for which the Company is paid in advance of

when control of the good or service is transferred. Unearned revenue also includes amounts related to professional services to be performed in the future. For the three months ended March 31, 2018, the Company recognized \$14.4 million of revenue that had been included in Unearned revenue as of December 31, 2017.

As of March 31, 2018, approximately \$916.5 million of revenue is expected to be recognized from remaining performance obligations that are primarily related to fixed-fee intellectual property and software-as-a-service agreements, of which approximately 20.0% is expected to be recognized as revenue over the remainder of 2018.

(6) Investments

The amortized cost and fair value of cash, cash equivalents and marketable securities by significant investment category were as follows (in thousands):

	March 31, 2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Cash	\$ 45,189	\$ —	\$ —	\$ 45,189
Cash equivalents - Money market funds	95,105	—	—	95,105
Cash and cash equivalents	<u>\$ 140,294</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 140,294</u>
Corporate debt securities	\$ 107,340	\$ —	\$ (735)	\$ 106,605
Foreign government obligations	2,250	—	(4)	2,246
U.S. Treasuries / Agencies	112,845	—	(425)	112,420
Marketable securities	<u>\$ 222,435</u>	<u>\$ —</u>	<u>\$ (1,164)</u>	<u>\$ 221,271</u>
Cash, cash equivalents and marketable securities				<u>\$ 361,565</u>

	December 31, 2017			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Cash	\$ 38,996	\$ —	\$ —	\$ 38,996
Cash equivalents - Money market funds	89,969	—	—	89,969
Cash and cash equivalents	<u>\$ 128,965</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 128,965</u>
Auction rate securities	\$ 10,800	\$ —	\$ (216)	\$ 10,584
Corporate debt securities	102,794	—	(397)	102,397
Foreign government obligations	2,249	—	(4)	2,245
U.S. Treasuries / Agencies	108,781	—	(430)	108,351
Marketable securities	<u>\$ 224,624</u>	<u>\$ —</u>	<u>\$ (1,047)</u>	<u>\$ 223,577</u>
Cash, cash equivalents and marketable securities				<u>\$ 352,542</u>

As of March 31, 2018, the amortized cost and fair value of marketable securities, by contractual maturity, were as follows (in thousands):

	Amortized Cost	Fair Value
Due in less than 1 year	\$ 148,739	\$ 148,226
Due in 1-2 years	73,696	73,045
Total	<u>\$ 222,435</u>	<u>\$ 221,271</u>

As of March 31, 2018 and December 31, 2017, the Condensed Consolidated Balance Sheets includes equity securities accounted for under the equity method with a carrying amount of \$1.4 million and \$1.1 million, respectively, and equity securities without a readily determinable fair value with a carrying amount of \$1.5 million and \$1.5 million, respectively. The carrying amount of the Company's equity securities without a readily determinable fair value is measured as cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar security of the same issuer. No impairments or adjustments to the carrying amount of the Company's equity securities without a readily determinable fair value were recognized for the three months ended March 31, 2018 and 2017.

(7) Fair Value Measurements

Fair Value Hierarchy

The Company uses valuation techniques that are based on observable and unobservable inputs to measure fair value. Observable inputs are developed using publicly available information and reflect the assumptions market participants would use, while unobservable inputs are developed using the best information available about the assumptions market participants would use. Fair value measurements are classified in a hierarchy that gives the highest priority to observable inputs and the lowest priority to unobservable inputs. Assets and liabilities are classified in the fair value hierarchy based on the lowest level input that is significant to the fair value measurement in its entirety:

- *Level 1.* Quoted prices in active markets for identical assets or liabilities.
- *Level 2.* Inputs other than Level 1 inputs that are observable for the asset or liability, either directly or indirectly, such as quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, or market-corroborated inputs.
- *Level 3.* Unobservable inputs for the asset or liability.

Recurring Fair Value Measurements

Assets and liabilities reported at fair value on a recurring basis in the Condensed Consolidated Balance Sheets were classified in the fair value hierarchy as follows (in thousands):

	March 31, 2018			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Cash and cash equivalents				
Money market funds	\$ 95,105	\$ 95,105	\$ —	\$ —
Short-term marketable securities				
Corporate debt securities	51,865	—	51,865	—
Foreign government obligations	2,246	—	2,246	—
U.S. Treasuries / Agencies	94,115	—	94,115	—
Long-term marketable securities				
Corporate debt securities	54,740	—	54,740	—
U.S. Treasuries / Agencies	18,305	—	18,305	—
Total Assets	\$ 316,376	\$ 95,105	\$ 221,271	\$ —
Liabilities				
Accounts payable and accrued expenses				
Cubiware contingent consideration	\$ (3,204)	\$ —	\$ —	\$ (3,204)
Interest rate swaps	(261)	—	(261)	—
Other long-term liabilities				
Interest rate swaps	(3,766)	—	(3,766)	—
Total Liabilities	\$ (7,231)	\$ —	\$ (4,027)	\$ (3,204)

	December 31, 2017			
	Total	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Cash and cash equivalents				
Money market funds	\$ 89,969	\$ 89,969	\$ —	\$ —
Short-term marketable securities				
Corporate debt securities	49,396	—	49,396	—
Foreign government obligations	2,245	—	2,245	—
U.S. Treasuries / Agencies	89,225	—	89,225	—
Long-term marketable securities				
Auction rate securities	10,584	—	—	10,584
Corporate debt securities	53,001	—	53,001	—
U.S. Treasuries / Agencies	19,126	—	19,126	—
Total Assets	<u>\$ 313,546</u>	<u>\$ 89,969</u>	<u>\$ 212,993</u>	<u>\$ 10,584</u>
Liabilities				
Accounts payable and accrued expenses				
Cubiware contingent consideration	\$ (2,234)	\$ —	\$ —	\$ (2,234)
Other long-term liabilities				
Interest rate swaps	(9,735)	—	(9,735)	—
Total Liabilities	<u>\$ (11,969)</u>	<u>\$ —</u>	<u>\$ (9,735)</u>	<u>\$ (2,234)</u>

The Company recognizes transfers between levels of the fair value hierarchy at the end of the reporting period. For the three months ended March 31, 2018 and 2017, there were no transfers between levels of the fair value hierarchy.

Rollforward of Level 3 Fair Value Measurements

Changes in the fair value of assets and liabilities classified in Level 3 of the fair value hierarchy were as follows (in thousands):

	Three Months Ended March 31,			
	2018		2017	
	Auction Rate Securities	Cubiware Contingent Consideration	Auction Rate Securities	Cubiware Contingent Consideration
Balance at beginning of period	\$ 10,584	\$ (2,234)	\$ 10,368	\$ (5,273)
Sales	(10,715)	—	—	—
(Loss) Gain included in earnings	(85)	(970)	—	169
Unrealized loss reclassification adjustment on sale	216	—	—	—
Unrealized gains included in other comprehensive income	—	—	108	—
Balance at end of period	<u>\$ —</u>	<u>\$ (3,204)</u>	<u>\$ 10,476</u>	<u>\$ (5,104)</u>

For the three months ended March 31, 2018, the (Loss) Gain included in earnings related to the Cubiware contingent consideration liability is included in Selling, general and administrative expense as a \$0.9 million loss related to remeasurement of the liability and \$0.1 million of Interest expense related to accretion of the liability to future value. For the three months ended March 31, 2017, the (Loss) Gain included in earnings related to the Cubiware contingent consideration liability is included in Selling, general and administrative expense as a \$0.3 million gain related to remeasurement of the liability offset in part by \$0.2 million of Interest expense related to accretion of the liability to future value.

Valuation Techniques

The fair value of marketable securities, other than auction rate securities, is estimated using observable market-corroborated inputs, such as quoted prices in active markets for similar assets or independent pricing vendors, obtained from a third-party pricing service.

The fair value of contingent consideration liabilities related to acquisitions is estimated utilizing a probability-weighted discounted cash flow analysis based on the terms of the underlying purchase agreement. The significant unobservable inputs used in calculating the fair value of contingent consideration liabilities related to acquisitions include financial performance scenarios, the probability of achieving those scenarios and the risk-adjusted discount rate.

The fair value of interest rate swaps is estimated using a discounted cash flow analysis that considers the expected future cash flows of each interest rate swap. This analysis reflects the contractual terms of the interest rate swap, including the remaining period to maturity, and uses market-corroborated inputs, including forward interest rate curves and implied interest rate volatilities. The fair value of an interest rate swap is estimated by netting the discounted future fixed cash payments against the discounted expected variable cash receipts. The variable cash receipts are estimated based on an expectation of future interest rates derived from forward interest rate curves. The fair value of an interest rate swap also incorporates credit valuation adjustments to reflect the nonperformance risk of the Company and the respective counterparty. In adjusting the fair value of its interest rate swaps for the effect of nonperformance risk, the Company considers the effect of its master netting agreements.

Other Fair Value Disclosures

The carrying amount and fair value of debt issued or assumed by the Company were as follows (in thousands):

	March 31, 2018		December 31, 2017	
	Carrying Amount	Fair Value (a)	Carrying Amount	Fair Value (a)
2020 Convertible Notes	\$ 315,412	\$ 330,983	\$ 311,766	\$ 326,888
2021 Convertible Notes	48	48	48	48
Term Loan Facility B	669,820	676,277	671,281	679,722
Total Long-term debt	\$ 985,280	\$ 1,007,308	\$ 983,095	\$ 1,006,658

- (a) The fair value of debt issued by the Company is estimated using quoted prices for the identical instrument in a market that is not active and considers interest rates currently available to companies of similar credit standing for similar terms and remaining maturities and considers the nonperformance risk of the Company. If reported at fair value in the Condensed Consolidated Balance Sheets, debt issued or assumed by the Company would be classified in Level 2 of the fair value hierarchy.

(8) Goodwill and Intangible Assets, Net

Goodwill

Goodwill allocated to the reportable segments and changes in the carrying amount of goodwill were as follows (in thousands):

	Intellectual Property Licensing		Total
	Product		
December 31, 2017	\$ 521,895	\$ 1,291,332	\$ 1,813,227
Foreign currency translation	291	—	291
March 31, 2018	\$ 522,186	\$ 1,291,332	\$ 1,813,518

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.

Intangible Assets, Net

Intangible assets, net consisted of the following (in thousands):

	March 31, 2018		
	Gross	Accumulated Amortization	Net
Finite-lived intangible assets			
Developed technology and patents	\$ 1,034,598	\$ (698,707)	\$ 335,891
Existing contracts and customer relationships	403,374	(158,062)	245,312
Content databases and other	57,057	(49,531)	7,526
Trademarks / Tradenames	8,300	(8,300)	—
Total finite-lived intangible assets	1,503,329	(914,600)	588,729
Indefinite-lived intangible assets			
TiVo Tradename	14,000	—	14,000
Total intangible assets	<u>\$ 1,517,329</u>	<u>\$ (914,600)</u>	<u>\$ 602,729</u>
December 31, 2017			
	Gross	Accumulated Amortization	Net
Finite-lived intangible assets			
Developed technology and patents	\$ 1,034,458	\$ (676,465)	\$ 357,993
Existing contracts and customer relationships	403,244	(139,289)	263,955
Content databases and other	57,053	(49,077)	7,976
Trademarks / Tradenames	8,300	(8,300)	—
Total finite-lived intangible assets	1,503,055	(873,131)	629,924
Indefinite-lived intangible assets			
TiVo Tradename	14,000	—	14,000
Total intangible assets	<u>\$ 1,517,055</u>	<u>\$ (873,131)</u>	<u>\$ 643,924</u>

Patent Acquisition

In March 2017, the Company purchased a portfolio of patents for \$1.8 million in cash. The Company accounted for the patent portfolio purchase as an asset acquisition and is amortizing the purchase price over a weighted average period of five years.

Future Amortization of Finite-Lived Intangible Assets

As of March 31, 2018, future estimated amortization expense for finite-lived intangible assets was as follows (in thousands):

Remainder of 2018	\$ 105,918
2019	110,006
2020	109,260
2021	66,491
2022	38,700
Thereafter	158,354
Total	<u>\$ 588,729</u>

(9) Restructuring Charges

Components of Restructuring charges were as follows (in thousands):

	Three Months Ended March 31,	
	2018	2017
Facility-related costs	\$ 102	\$ 761
Severance costs	2,192	2,429
Share-based payments	2,252	1,345
Contract termination costs	—	4
Restructuring charges	\$ 4,546	\$ 4,539

Components of Accrued restructuring costs were as follows (in thousands):

	March 31, 2018	December 31, 2017
Facility-related costs	\$ 610	\$ 693
Severance costs	2,460	584
Contract termination costs	23	37
Accrued restructuring costs	\$ 3,093	\$ 1,314

The Company expects a substantial portion of the accrued restructuring costs to be paid by the end of 2018.

Profit Improvement Plan

In February 2018, the Company announced its intention to explore strategic alternatives. In connection with exploring strategic alternatives, the Company initiated certain cost saving actions (the "Profit Improvement Plan"). As a result of the Profit Improvement Plan, the Company expects to move certain positions to lower cost locations, eliminate layers of management and rationalize facilities resulting in severance costs and the termination of certain leases and other contracts. Restructuring activities for the Profit Improvement Plan for the three months ended March 31, 2018 were as follows (in thousands):

	Balance at Beginning of Period	Restructuring Expense	Cash Settlements	Non-Cash Settlements	Other	Balance at End of Period
Severance costs	\$ —	\$ 2,065	\$ —	\$ —	\$ —	\$ 2,065
Share-based payments	—	2,252	—	(2,252)	—	—
Total	\$ —	\$ 4,317	\$ —	\$ (2,252)	\$ —	\$ 2,065

The Company expects to incur material restructuring costs in connection with the Profit Improvement Plan through the middle of 2019.

TiVo Integration Restructuring Plan

Following completion of the TiVo Acquisition, TiVo Corporation began implementing integration plans intended to realize operational synergies between Rovi and TiVo Solutions (the "TiVo Integration Restructuring Plan"). As a result of these integration plans, the Company eliminated duplicative positions resulting in severance costs and the termination of certain leases and other contracts. Restructuring activities related to the TiVo Integration Restructuring Plan for the three months ended March 31, 2018 were as follows (in thousands):

	Balance at Beginning of Period	Restructuring Expense	Cash Settlements	Non-Cash Settlements	Other	Balance at End of Period
Facility-related costs	\$ 111	\$ 102	\$ —	\$ —	\$ (12)	\$ 201
Severance costs	448	127	(325)	—	1	251
Total	\$ 559	\$ 229	\$ (325)	\$ —	\$ (11)	\$ 452

The Company expects to incur restructuring costs in connection with the TiVo Integration Restructuring Plan through the first half of 2018.

Legacy Rovi and TiVo Solutions Restructuring Plans

Prior to the TiVo Acquisition, Rovi and TiVo Solutions had each initiated restructuring plans. As of March 31, 2018, the Legacy Rovi Restructuring Plan and the Legacy TiVo Solutions Restructuring Plan are complete. For the three months ended March 31, 2017, Restructuring charges of \$0.6 million were recognized in the Condensed Consolidated Statements of Operations related to these plans. As of March 31, 2018, Accrued restructuring costs of \$0.6 million are included in the Condensed Consolidated Balance Sheets related to the Legacy Rovi Restructuring Plan.

(10) Debt and Interest Rate Swaps

A summary of the Company's financing arrangements was as follows (dollars in thousands):

	Stated Interest Rate	Issue Date	Maturity Date	March 31, 2018		December 31, 2017	
				Outstanding Principal	Carrying Amount	Outstanding Principal	Carrying Amount
2020 Convertible Notes	0.500%	March 4, 2015	March 1, 2020	\$ 345,000	\$ 315,412	\$ 345,000	\$ 311,766
2021 Convertible Notes	2.000%	September 22, 2014	October 1, 2021	48	48	48	48
Term Loan Facility B	Variable	July 2, 2014	July 2, 2021	673,750	669,820	675,500	671,281
Total Long-term debt				<u>\$ 1,018,798</u>	<u>985,280</u>	<u>\$ 1,020,548</u>	<u>983,095</u>
Less: Current portion of long-term debt					<u>7,000</u>		<u>7,000</u>
Long-term debt, less current portion					<u>\$ 978,280</u>		<u>\$ 976,095</u>

2020 Convertible Notes

Rovi issued \$345.0 million in aggregate principal of 0.500% Convertible Senior Notes that mature March 1, 2020 (the "2020 Convertible Notes") at par pursuant to an Indenture dated March 4, 2015 (as supplemented, the "2015 Indenture"). The 2020 Convertible Notes were sold in a private placement and bear interest at an annual rate of 0.500% payable semi-annually in arrears on March 1 and September 1 of each year, commencing September 1, 2015. In connection with the TiVo Acquisition, TiVo Corporation and Rovi entered into a supplemental indenture under which TiVo Corporation became a guarantor of the 2020 Convertible Notes and the notes became convertible into TiVo Corporation common stock.

The 2020 Convertible Notes were convertible at an initial conversion rate of 34.5968 shares of TiVo Corporation common stock per \$1,000 of principal of notes, which was equivalent to an initial conversion price of \$28.9044 per share of TiVo Corporation common stock. The conversion rate and conversion price are subject to adjustment pursuant to the 2015 Indenture, including as a result of dividends paid by TiVo Corporation. As of March 31, 2018, the 2020 Convertible Notes are convertible at a conversion rate of 36.4752 shares of TiVo Corporation common stock per \$1,000 principal of notes, which is equivalent to a conversion price of \$27.4159 per share of TiVo Corporation common stock.

Holders may convert the 2020 Convertible Notes, prior to the close of business on the business day immediately preceding December 1, 2019, in multiples of \$1,000 of principal under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ending on June 30, 2015 (and only during such calendar quarter), if the last reported sale price of TiVo Corporation's common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any ten consecutive trading day period in which the trading price per \$1,000 of principal of 2020 Convertible Notes for each trading day was less than 98% of the product of the last reported sale price of TiVo Corporation's common stock and the conversion rate on each such trading day; or
- on the occurrence of specified corporate events.

On or after December 1, 2019 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert the 2020 Convertible Notes, in multiples of \$1,000 of principal, at any time. In

addition, during the 35-day trading period following a Merger Event, as defined in the 2015 Indenture, holders may convert the 2020 Convertible Notes, in multiples of \$1,000 of principal.

On conversion, a holder will receive the conversion value of the 2020 Convertible Notes converted based on the conversion rate multiplied by the volume-weighted average price of TiVo Corporation's common stock over a specified observation period. On conversion, Rovi will pay cash up to the aggregate principal of the 2020 Convertible Notes converted and deliver shares of TiVo Corporation's common stock in respect of the remainder, if any, of the conversion obligation in excess of the aggregate principal of the 2020 Convertible Notes being converted.

The conversion rate is subject to adjustment in certain events, including certain events that constitute a "Make-Whole Fundamental Change" (as defined in the 2015 Indenture). In addition, if Rovi undergoes a "Fundamental Change" (as defined in the 2015 Indenture) prior to March 1, 2020, holders may require Rovi to repurchase for cash all or a portion of the 2020 Convertible Notes at a repurchase price equal to 100% of the principal of the repurchased 2020 Convertible Notes, plus accrued and unpaid interest. The conversion rate is also subject to customary anti-dilution adjustments.

The 2020 Convertible Notes are not redeemable prior to maturity by Rovi and no sinking fund is provided. The 2020 Convertible Notes are unsecured and do not contain financial covenants or restrictions on the payment of dividends, the incurrence of indebtedness or the repurchase of other securities by Rovi. The 2015 Indenture includes customary terms and covenants, including certain events of default after which the 2020 Convertible Notes may be due and payable immediately.

TiVo Corporation has separately accounted for the liability and equity components of the 2020 Convertible Notes. The initial carrying amount of the liability component was calculated by estimating the value of the 2020 Convertible Notes using TiVo Corporation's estimated non-convertible borrowing rate of 4.75% at the time the instrument was issued. The carrying amount of the equity component, representing the value of the conversion option, was determined by deducting the liability component from the principal of the 2020 Convertible Notes. The difference between the principal of the 2020 Convertible Notes and the liability component is considered a debt discount which is being amortized to interest expense using the effective interest method over the expected term of the 2020 Convertible Notes. The equity component of the 2020 Convertible Notes was recorded as a component of Additional paid-in capital in the Condensed Consolidated Balance Sheets and will not be remeasured as long as it continues to meet the conditions for equity classification. Related to the 2020 Convertible Notes, the Condensed Consolidated Balance Sheets included the following (in thousands):

	March 31, 2018	December 31, 2017
Liability component		
Principal outstanding	\$ 345,000	\$ 345,000
Less: Unamortized debt discount	(26,245)	(29,499)
Less: Unamortized debt issuance costs	(3,343)	(3,735)
Carrying amount	<u>\$ 315,412</u>	<u>\$ 311,766</u>
Equity component	<u>\$ 63,854</u>	<u>\$ 63,854</u>

Components of interest expense related to the 2020 Convertible Notes included in the Condensed Consolidated Statements of Operations were as follows (in thousands):

	Three Months Ended March 31,	
	2018	2017
Stated interest	\$ 431	\$ 431
Amortization of debt discount	3,254	3,106
Amortization of debt issuance costs	392	355
Total interest expense	<u>\$ 4,077</u>	<u>\$ 3,892</u>

Rovi incurred \$9.3 million in transaction costs related to the issuance of the 2020 Convertible Notes which were allocated to liability and equity components based on the relative amounts calculated for the 2020 Convertible Notes at the date of issuance. Transaction costs of \$7.6 million attributable to the liability component were recorded in Long-term debt, less current portion in the Condensed Consolidated Balance Sheets and are being amortized to interest expense using the effective interest method over the expected term of the 2020 Convertible Notes. Transaction costs of \$1.7 million attributable to the equity component were recorded as a component of Additional paid-in capital in the Condensed Consolidated Balance Sheets.

Purchased Call Options and Sold Warrants related to the 2020 Convertible Notes

Concurrent with the issuance of the 2020 Convertible Notes in 2015, Rovi paid \$64.8 million to purchase call options with respect to its common stock. The call options gave TiVo Corporation the right, but not the obligation, to purchase up to 11.9 million shares of TiVo Corporation's common stock at an exercise price of \$28.9044 per share, which corresponds to the initial conversion price of the 2020 Convertible Notes, and are exercisable by TiVo Corporation on conversion of the 2020 Convertible Notes. The exercise price is subject to adjustment, including as a result of dividends paid by TiVo Corporation. As of March 31, 2018, the call options give TiVo Corporation the right, but not the obligation, to purchase up to 12.6 million shares of TiVo Corporation's common stock at an exercise price of \$27.4159 per share. The call options are intended to reduce the potential dilution from conversion of the 2020 Convertible Notes. The purchased call options are separate transactions from the 2020 Convertible Notes and holders of the 2020 Convertible Notes do not have any rights with respect to the purchased call options.

Concurrent with the issuance of the 2020 Convertible Notes in 2015, Rovi received \$31.3 million from the sale of warrants that provide the holder of the warrant the right, but not the obligation, to purchase up to 11.9 million shares of TiVo Corporation common stock at an exercise price of \$40.1450 per share. The exercise price is subject to adjustment, including as a result of dividends paid by TiVo Corporation. As of March 31, 2018, 12.3 million warrants were outstanding with an exercise price of \$38.0776 per share. The warrants are exercisable beginning June 1, 2020 and can be settled in cash or shares at TiVo Corporation's election. The warrants were entered into to offset the cost of the purchased call options. The warrants are separate transactions from the 2020 Convertible Notes and holders of the 2020 Convertible Notes do not have any rights with respect to the warrants.

The amounts paid to purchase the call options and received to sell the warrants were recorded in Additional paid-in capital in the Condensed Consolidated Balance Sheets.

2021 Convertible Notes

TiVo Solutions issued \$230.0 million in aggregate principal of 2.0% Convertible Senior Notes that mature October 1, 2021 (the "2021 Convertible Notes") at par pursuant to an Indenture dated September 22, 2014 (as supplemented, "the 2014 Indenture"). 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, commencing April 2015. On October 12, 2016, TiVo Solutions repaid \$229.95 million of the par value of the 2021 Convertible Notes.

The 2021 Convertible Notes were convertible at an initial conversion rate of 56.1073 shares of TiVo Solutions common stock per \$1,000 principal of notes, which was equivalent to an initial conversion price of \$17.8230 per share of TiVo Solutions common stock. Following the TiVo Acquisition, the 2021 Convertible Notes were convertible at a conversion rate of 21.6181 shares of TiVo Corporation common stock per \$1,000 principal of notes and \$154.30 per \$1,000 principal of notes, which was equivalent to a conversion price of \$39.12 per share of TiVo Corporation common stock. The conversion rate and conversion price are subject to adjustment pursuant to the 2014 Indenture, including as a result of dividends paid by TiVo Corporation. As of March 31, 2018, the 2021 Convertible Notes are convertible at a conversion rate of 22.7925 shares of TiVo Corporation common stock per \$1,000 principal of notes and \$154.30 per \$1,000 principal of notes, which is equivalent to a conversion price of \$37.1043 per share of TiVo Corporation common stock.

TiVo Solutions can settle the 2021 Convertible Notes in cash, shares of common stock, or any combination thereof pursuant to the 2014 Indenture. Subject to certain exceptions, holders may require TiVo Solutions to repurchase, for cash, all or part of their 2021 Convertible Notes upon a "Fundamental Change" (as defined in the 2014 Indenture) at a price equal to 100% of the principal amount of the 2021 Convertible Notes being repurchased plus any accrued and unpaid interest up to, but excluding, the "Fundamental Change Repurchase Date" (as defined in the 2014 Indenture). In addition, on a "Make-Whole Fundamental Change" (as defined in the 2014 Indenture) prior to the maturity date of the 2021 Convertible Notes, TiVo Solutions will, in some cases, increase the conversion rate for a holder that elects to convert its 2021 Convertible Notes in connection with such Make-Whole Fundamental Change.

Senior Secured Credit Facility

On July 2, 2014, Rovi Corporation, as parent guarantor, and two of its wholly-owned subsidiaries, Rovi Solutions Corporation and Rovi Guides, Inc., as borrowers, and certain of its other subsidiaries, as subsidiary guarantors, entered into a Credit Agreement (the "Credit Agreement"). After the completion of the TiVo Acquisition, TiVo Corporation became a guarantor under the Credit Agreement. The Credit Agreement provided for a (i) five-year \$125.0 million term loan A facility

("Term Loan Facility A"), (ii) seven-year \$700.0 million term loan B facility ("Term Loan Facility B" and together with Term Loan Facility A, the "Term Loan Facility") and (iii) five-year \$175.0 million revolving credit facility (including a letter of credit sub-facility) (the "Revolving Facility" and together with the Term Loan Facility, the "Senior Secured Credit Facility"). In September 2015, Rovi made a voluntary principal prepayment to extinguish Term Loan Facility A and elected to terminate the Revolving Facility.

Prior to the refinancing described below, loans under Term Loan Facility B bore interest, at the Company's option, at a rate equal to either LIBOR, plus an applicable margin equal to 3.00% per annum (subject to a 0.75% LIBOR floor) or the prime lending rate, plus an applicable margin equal to 2.00% per annum.

On January 26, 2017, TiVo Corporation, as parent guarantor, two of its wholly-owned subsidiaries, Rovi Solutions Corporation and Rovi Guides, Inc., as borrowers, and certain of TiVo Corporation's other subsidiaries, as subsidiary guarantors, entered into Refinancing Agreement No. 1 with respect to Term Loan Facility B. The \$682.5 million in proceeds from Refinancing Agreement No. 1 was used to repay existing loans under Term Loan Facility B in full. The borrowing terms for Refinancing Agreement No. 1 are substantially similar to the borrowing terms of Term Loan Facility B. However, loans under Refinancing Agreement No. 1 bear interest, at the borrower's option, at a rate equal to either LIBOR, plus an applicable margin equal to 2.50% per annum (subject to a 0.75% LIBOR floor) or the prime lending rate, plus an applicable margin equal to 1.50% per annum. Refinancing Agreement No. 1 requires quarterly principal payments of \$1.75 million through June 2021, with any remaining balance payable in July 2021. Refinancing Agreement No. 1 is part of the Senior Secured Credit Facility.

The refinancing of Term Loan Facility B resulted in a Loss on debt extinguishment of \$0.1 million and a Loss on debt modification of \$0.9 million for the three months ended March 31, 2017. Creditors in Term Loan Facility B that elected not to participate in Refinancing Agreement No. 1 were extinguished. Creditors in Term Loan Facility B that elected to participate in Refinancing Agreement No. 1 and for which the present value of future cash flows was not substantially different were accounted for as a debt modification.

The Credit Agreement contains customary representations and warranties and customary affirmative and negative covenants applicable to the Company and its subsidiaries, including, among other things, restrictions on indebtedness, liens, investments, mergers, dispositions, prepayment of other indebtedness, and dividends and other distributions. The Credit Agreement is secured by substantially all of the Company's assets. The Company may be required to make an additional payment on the Term Loan Facility each February. This payment is calculated as a percentage of the prior year's "Excess Cash Flow" as defined in the Credit Agreement. No additional payment was required in February 2018.

Debt Maturities

As of March 31, 2018, aggregate expected future principal payments on long-term debt, including the current portion of long-term debt, were as follows (in thousands):

2018	\$	5,250
2019 (1)		352,000
2020		7,000
2021		654,548
Total	\$	<u>1,018,798</u>

- (1) While the 2020 Convertible Notes are scheduled to mature on March 1, 2020, future principal payments are presented based on the date the 2020 Convertible Notes can be freely converted by holders, which is December 1, 2019. However, the 2020 Convertible Notes may be converted by holders prior to December 1, 2019 in certain circumstances.

Interest Rate Swaps

The Company issues long-term debt denominated in U.S. dollars based on market conditions at the time of financing and may enter into interest rate swaps to achieve a primarily fixed interest rate. Alternatively, the Company may choose not to enter into an interest rate swap or may terminate a previously executed interest rate swap if it believes a larger proportion of floating-rate debt would be beneficial. The Company has not designated any of its interest rate swaps as hedges for accounting purposes. The Company records interest rate swaps in the Condensed Consolidated Balance Sheets at fair value with changes in fair value recorded as Gain on interest rate swaps in the Condensed Consolidated Statements of Operations. Amounts are presented in the Condensed Consolidated Balance Sheets after considering the right of offset and the effect of master netting

agreements. During the three months ended March 31, 2018 and 2017, the Company recorded gains of \$4.3 million and \$0.5 million, respectively, from adjusting its interest rate swaps to fair value.

Details of the Company's interest rate swaps as of March 31, 2018 and December 31, 2017 were as follows (dollars in thousands):

Contract Inception	Contract Effective Date	Contract Maturity	Notional		Interest Rate Paid	Interest Rate Received
			March 31, 2018	December 31, 2017		
Senior Secured Credit Facility						
June 2013	January 2016	March 2019	\$ 250,000	\$ 250,000	2.23%	One month USD-LIBOR
September 2014	January 2016	July 2021	\$ 125,000	\$ 125,000	2.66%	One month USD-LIBOR
September 2014	March 2017	July 2021	\$ 200,000	\$ 200,000	2.93%	One month USD-LIBOR

(11) Commitments and Contingencies

Purchase Commitments

The Company purchases components from a variety of suppliers and uses several 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 component supply, the Company enters into agreements with contract manufacturers and suppliers 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 consists 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 purchase commitments based on its business needs prior to firm orders being placed. As of March 31, 2018, the Company had total purchase commitments for inventory of \$3.6 million, of which \$1.3 million was accrued in the Condensed Consolidated Balance Sheets.

Indemnifications

In the normal course of business, the Company provides indemnifications of varying scopes and amounts to certain of its licensees against claims made by third parties arising out of the use and / or incorporation of the Company's products, intellectual property, services and / or technologies into the licensees' products and services. TiVo Solutions has also indemnified certain customers and business partners for, among other things, the licensing of its products, the sale of its DVRs, and the provision of engineering and consulting services. The Company's obligation under its indemnification agreements with customer and business partners would arise in the event a third party filed a claim against one of the parties that was covered by the Company's indemnification. Pursuant to these agreements, the Company may indemnify the other party for certain losses suffered or incurred by the indemnified party in connection with various types of claims, which may include, without limitation, intellectual property infringement, advertising and consumer disclosure laws, certain tax liabilities, negligence and intentional acts in the performance of services and violations of laws.

In some cases, the Company may receive tenders of defense and indemnity arising out of products, intellectual property services and / or technologies that are no longer provided by the Company due to having divested certain assets, but which were previously licensed or provided by the Company.

The term of the Company's indemnification obligations is generally perpetual. The Company's indemnification obligations are typically limited to the cumulative amount paid to the Company by the licensee under the license agreement; however, some license agreements, including those with the Company's largest MSO and digital broadcast satellite providers, have larger limits or do not specify a limit on amounts that may be payable under the indemnity arrangements.

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. Due to the nature of the Company's potential indemnity liability, the Condensed Consolidated Financial Statements could be materially adversely affected in a particular period by one or more of these indemnities.

Under certain circumstances, TiVo Solutions may seek to recover some or all amounts paid to an indemnified party from its insurers. TiVo Solutions does not have any assets held either as collateral or by third parties that, on the occurrence of an event requiring it to indemnify a customer, TiVo Solutions could obtain and liquidate to recover all or a portion of the amounts paid pursuant to its indemnification obligations.

Legal Proceedings

The Company may be involved in various lawsuits, claims and proceedings, including intellectual property, commercial, securities and employment matters that arise in the normal course of business. The Company accrues a liability when management believes information available prior to the issuance of the financial statements indicates it is probable a loss has been incurred as of the date of the financial statements and the amount of loss can be reasonably estimated. The Company adjusts its accruals to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular case. The Company believes it has recorded adequate provisions for any such matters and, as of March 31, 2018, it was not reasonably possible that a material loss had been incurred in excess of the amounts recognized in the Condensed Consolidated Financial Statements. Legal costs are expensed as incurred. Based on its experience, the Company believes that damage amounts claimed in these matters are not meaningful indicators of potential liability. Some of the matters pending against the Company involve potential compensatory, punitive or treble damage claims or sanctions, that, if granted, could require the Company to pay damages or make other expenditures in amounts that could have a material adverse effect on its Condensed Consolidated Financial Statements. Given the inherent uncertainties of litigation, the ultimate outcome of the ongoing matters described herein cannot be predicted with certainty. While litigation is inherently unpredictable, the Company believes it has valid defenses with respect to the legal matters pending against it. Nevertheless, the Condensed Consolidated Financial Statements could be materially adversely affected in a particular period by the resolution of one or more of these contingencies.

(12) Stockholders' Equity

Earnings (Loss) Per Share

Basic earnings per share ("EPS") is computed using the weighted average number of common shares outstanding during the period. Diluted EPS is computed using the weighted average number of common shares and dilutive common share equivalents outstanding during the period, except for periods of a loss from continuing operations. In periods of a loss from continuing operations, no common share equivalents are included in Diluted EPS because their effect would be anti-dilutive.

The number of shares used to calculate Basic EPS and Diluted EPS were as follows (in thousands):

	<u>Three Months Ended March 31,</u>	
	<u>2018</u>	<u>2017</u>
Weighted average shares used in computing basic per share amounts	122,080	118,813
Dilutive effect of equity-based compensation awards	—	—
Weighted average shares used in computing diluted per share amounts	<u>122,080</u>	<u>118,813</u>

Weighted average potential shares excluded from the calculation of Diluted EPS as their effect would have been anti-dilutive were as follows (in thousands):

	<u>Three Months Ended March 31,</u>	
	<u>2018</u>	<u>2017</u>
Restricted awards	4,430	4,657
Stock options	2,311	3,655
2020 Convertible Notes (a)	12,584	12,047
2021 Convertible Notes (a)	1	1
Warrants related to 2020 Convertible Notes (a)	12,325	11,936
Weighted average potential shares excluded from the calculation of Diluted EPS	<u>31,651</u>	<u>32,296</u>

(a) See Note 10 for additional details.

For the three months ended March 31, 2018 and 2017, 1.0 million and 0.7 million weighted average performance-based restricted awards, respectively, were excluded from the calculation of Diluted EPS as the performance metric had yet to be achieved.

Effect of the 2020 Convertible Notes and related transactions on Diluted EPS

In periods when the Company reports income from continuing operations, the potential dilutive effect of additional shares of common stock that may be issued on conversion of the 2020 Convertible Notes are included in the calculation of Diluted EPS under the treasury stock method if the price of the Company's common stock exceeds the conversion price. The 2020 Convertible Notes have no impact on Diluted EPS until the price of the Company's common stock exceeds the conversion price of \$27.4159 per share because the principal of the 2020 Convertible Notes is required to be settled in cash. Based on the closing price of the Company's common stock of \$13.55 per share on March 31, 2018, the if-converted value of the 2020 Convertible Notes was less than the outstanding principal.

Under the treasury stock method, the 2020 Convertible Notes would be dilutive if the Company's common stock closes at or above \$27.4159 per share. However, on conversion, no economic dilution is expected from the 2020 Convertible Notes as the exercise of call options purchased by the Company with respect to its common stock described in Note 10 is expected to eliminate any potential dilution from the 2020 Convertible Notes that would have otherwise occurred. The call options are always excluded from the calculation of Diluted EPS as they are anti-dilutive under the treasury stock method.

The warrants sold by the Company with respect to its common stock in connection with the 2020 Convertible Notes described in Note 10 have an effect on Diluted EPS when the Company's share price exceeds the warrant's strike price of \$38.0776 per share. As the price of the Company's common stock increases above the warrant strike price, additional dilution would occur.

Changes in Shareholders Equity

Changes in stockholders' equity for the three months ended March 31, 2018 were as follows (in thousands):

	Common stock		Treasury stock		Additional paid-in capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
	Shares	Amount	Shares	Amount				
Balance as of December 31, 2017	123,385	\$ 123	(1,269)	\$ (24,740)	\$ 3,273,022	\$ (2,738)	\$ (1,392,651)	\$ 1,853,016
Cumulative effect adjustment (a)							31,412	31,412
Net loss							(17,717)	(17,717)
Other comprehensive income, net of tax						992		992
Issuance of common stock under employee stock purchase plan	639	1			7,574			7,575
Issuance of restricted stock, net	365	—			—			—
Equity-based compensation					13,634			13,634
Dividends					(22,111)			(22,111)
Withholding taxes related to net share settlement of restricted stock units			(196)	(2,894)				(2,894)
Balance as of March 31, 2018	124,389	\$ 124	(1,465)	\$ (27,634)	\$ 3,272,119	\$ (1,746)	\$ (1,378,956)	\$ 1,863,907

(a) See Note 1 and Note 5 for additional information.

Share Repurchase Program

On February 14, 2017, TiVo Corporation's Board of Directors approved an increase to the share repurchase program authorization to \$150.0 million. The February 2017 authorization includes amounts which were outstanding under previously authorized share repurchase programs. During the three months ended March 31, 2018 and 2017, no shares were repurchased under the share repurchase program. As of March 31, 2018, the Company had \$150.0 million of share repurchase authorization remaining.

The Company issues restricted stock and restricted stock units (collectively, "restricted awards") as part of the equity incentive plans described in Note 13. 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 considered common stock repurchases under the Company's authorized share repurchase plan. During the three months ended March 31, 2018 and 2017, the Company withheld 0.2 million and 0.5 million shares of common stock to satisfy \$2.9 million and \$9.6 million of required withholding taxes, respectively.

Dividends

For the three months ended March 31, 2018 and 2017, the Company declared and paid dividends of \$0.18 and \$0.18 per share, respectively, for aggregate cash payments of \$22.2 million and \$21.7 million, respectively.

Section 382 Transfer Restrictions

On September 7, 2016, upon the effective time of the TiVo Acquisition, the Company's certificate of incorporation was amended and restated to include certain transfer restrictions intended to preserve tax benefits related to the net operating loss carryforwards ("NOLs") of the Company pursuant to Section 382 of Internal Revenue Code of 1986, as amended (the "Code"), that apply to transfers made by 5% stockholders, transferees related to a 5% stockholder, transferees acting in coordination with a 5% stockholder, or transfers that would result in a stockholder becoming a 5% stockholder. If the Company experiences an "ownership change," as defined in Section 382 of the Code, its ability to fully utilize the NOLs on an annual basis will be substantially limited, and the timing of the usage of the NOLs could be substantially delayed, which could therefore significantly impair the value of those benefits. These transfer restrictions are intended to act as a deterrent to any person (an "Acquiring Person") acquiring (together with all affiliates and associates of such person) beneficial ownership of 5% or more of the Company's outstanding common stock within the meaning of Section 382 of the Code, without the approval of the Company's Board of Directors. Such transfer restrictions will expire on the earlier of (i) the repeal of Section 382 or any successor statute if the Company's 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 the Company's Board of Directors determines that no tax benefits may be carried forward or (iii) the end of the day on September 7, 2019, three years from the effective time of the TiVo Acquisition when the Company's certificate of incorporation was amended and restated to include certain transfer restrictions. The Company conducted a stockholder advisory vote with respect to the maintenance of such transfer restrictions in its certificate of incorporation at its 2017 Annual Meeting of Stockholders and the stockholders approved of such transfer restrictions.

(13) Equity-based Compensation

Restricted Awards and Stock Options

The Company grants equity-based compensation awards from the Rovi 2008 Equity Incentive Plan (the "Rovi 2008 Plan"). The Rovi 2008 Plan permits the grant of restricted awards, stock options and similar types of equity awards to employees, officers, directors and consultants of the Company. Restricted stock is considered outstanding at the time of the grant as holders are entitled to voting rights. Restricted awards are generally subject to a four year graded vesting period. Stock options generally have vesting periods of four years with one quarter of the grant vesting on the first anniversary of the grant, followed by monthly vesting thereafter. Stock options generally have a contractual term of seven years. As of March 31, 2018, the Company had 30.0 million shares of common stock reserved and 12.5 million shares of common stock available for issuance under the Rovi 2008 Plan.

On September 7, 2016, the Company assumed the TiVo Inc. Amended and Restated 2008 Equity Incentive Award Plan (the "TiVo 2008 Plan"). The Company amended and restated the TiVo 2008 Plan effective as of the closing of the TiVo Acquisition to be the TiVo Corporation Titan Equity Incentive Award Plan for purposes of awards granted following the closing of the TiVo Acquisition. The TiVo 2008 Plan permits the grant of restricted awards, stock options and similar types of equity awards to employees, officers, directors and consultants of the Company. Restricted stock is considered outstanding at the time of the grant as holders are entitled to voting rights. Restricted awards assumed from the TiVo 2008 Plan are generally subject to a three year vesting period, with semiannual vesting. Restricted awards issued by the Company from the TiVo 2008 Plan are generally subject to a four year graded vesting period. Stock options assumed from the TiVo 2008 Plan generally have a four year vesting period with one quarter of the grant vesting on the first anniversary of the grant followed by monthly vesting thereafter. Stock options assumed from the TiVo 2008 Plan generally have a contractual term of seven years. As of March 31,

2018, there were 3.9 million shares of common stock reserved and 1.8 million shares of common stock available for future grant under the TiVo 2008 Plan.

The Company also grants performance-based restricted stock units to certain of its senior officers for three-year performance periods. Vesting in the performance-based restricted stock units is subject to a market condition, as well as a service condition. Depending on the level of achievement, the maximum number of shares that could be issued on vesting generally could be up to 200% of the target number of performance-based restricted stock units granted. For awards subject to a market vesting condition, the fair value per award is fixed at the grant date and the amount of compensation expense is not adjusted during the performance period regardless of changes in the level of achievement of the market condition.

Employee Stock Purchase Plan

The Company's 2008 Employee Stock Purchase Plan ("ESPP") allows eligible employees to purchase shares of the Company's common stock at a discount through payroll deductions. The ESPP consists of up to four consecutive six-month purchase periods within a twenty-four month offering period. Employees purchase shares each purchase period at the lower of 85% of the market value of the Company's common stock at either the beginning of the offering period or the end of the purchase period. As of March 31, 2018, the Company had 5.2 million shares of common stock reserved and 5.2 million shares available for issuance under the ESPP.

Valuation Techniques and Assumptions

The Company's restricted awards are generally not eligible for dividend protection. Prior to and including February 14, 2017, the fair value of restricted awards subject to service conditions was estimated as the price of the Company's common stock at the close of trading on the date of grant. Subsequent to February 14, 2017, the fair value of restricted awards subject to service conditions is estimated as the price of the Company's common stock at the close of trading on the date of grant, less the present value of dividends expected to be paid during the vesting period.

A Monte Carlo simulation is used to estimate the fair value of restricted awards subject to market conditions with expected volatility estimated using the historical volatility of the Company's common stock.

The Company uses the Black-Scholes-Merton option-pricing formula to estimate the fair value of stock options and ESPP shares. The Black-Scholes-Merton option-pricing formula uses complex and subjective inputs, such as the expected volatility of the Company's common stock over the expected term of the award and projected employee exercise behavior. Expected volatility for stock options and ESPP shares is estimated using a combination of historical volatility and implied volatility derived from publicly-traded options on the Company's common stock. The expected term of stock options and ESPP shares is estimated by calculating the average period the award is outstanding based on historical experience. The risk-free interest rate is estimated based on the yield on U.S. Treasury zero-coupon bonds with remaining terms similar to the expected term of the stock options and ESPP shares at the grant date. For stock options and ESPP shares granted prior to and including February 14, 2017, the Company assumed an expected dividend yield of zero as it had not historically paid a dividend. For stock options and ESPP shares granted subsequent to February 14, 2017, the Company assumes a constant dividend yield commensurate with the dividend yield on the grant date.

Weighted-average assumptions used to estimate the fair value of equity-based compensation awards granted during the period were as follows:

	Three Months Ended March 31,	
	2018	2017
ESPP shares:		
Expected volatility	42.5%	41.7%
Expected term	1.3 years	1.3 years
Risk-free interest rate	1.9%	1.0%
Expected dividend yield	5.2%	0.0%

The number of awards expected to vest during the requisite service period is estimated at the time of grant using historical data and equity-based compensation is only recognized for awards for which the requisite service is expected to be rendered. Forfeiture estimates are revised during the requisite service period and the effect of changes in the number of awards expected to vest during the requisite service period is recognized as a cumulative effect adjustment in the period estimates are revised.

The weighted-average grant date fair value of equity-based awards (per award) and pre-tax equity-based compensation expense (in thousands) was as follows:

	Three Months Ended March 31,	
	2018	2017
Restricted awards	\$ 12.80	\$ 18.80
ESPP shares	\$ 4.83	\$ 5.92
Pre-tax equity-based compensation, excluding amounts included in restructuring expense	\$ 12,024	\$ 14,025
Pre-tax equity-based compensation, included in restructuring expense	\$ 2,252	\$ 1,345

As of March 31, 2018, there was \$69.4 million of unrecognized compensation cost, net of estimated forfeitures, related to unvested equity-based awards which is expected to be recognized over a remaining weighted average period of 2.3 years.

Equity-Based Compensation Award Activity

Activity related to the Company's restricted awards for the three months ended March 31, 2018 was as follows:

	Restricted Awards (In Thousands)	Weighted-Average Grant Date Fair Value
Outstanding as of beginning of period	5,899	\$ 17.78
Granted	119	\$ 12.80
Vested	(640)	\$ 23.88
Forfeited	(407)	\$ 21.78
Outstanding as of end of period	4,971	\$ 16.55

As of March 31, 2018, 4.7 million restricted stock units were unvested, which includes 1.0 million performance-based restricted stock units. As of March 31, 2018, 0.3 million shares of restricted stock were unvested. The aggregate fair value of restricted awards vested during the three months ended March 31, 2018 and 2017 was \$9.5 million and \$32.1 million, respectively.

Activity related to the Company's stock options for the three months ended March 31, 2018 was as follows:

	Options (In Thousands)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (In Thousands)
Outstanding as of beginning of period	2,368	\$ 27.16		
Forfeited and expired	(158)	\$ 34.90		
Outstanding as of end of period	2,210	\$ 26.60	1.7 years	\$ 1
Vested and expected to vest as of March 31, 2018	2,201	\$ 26.62	1.6 years	\$ 1
Exercisable as of March 31, 2018	2,005	\$ 26.89	1.6 years	\$ 1

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value that option holders would have received had all option holders exercised their options at the end of the last trading day in the period. The aggregate intrinsic value is the difference between the closing price of the Company's common stock on the last trading day of the period and the exercise price of the option, multiplied by the number of in-the-money options.

The aggregate intrinsic value of stock options exercised is the difference between the market price of the Company's common stock at the time of exercise and the exercise price of the stock option multiplied by the number of stock options exercised. No stock options were exercised during the three months ended March 31, 2018. The aggregate intrinsic value of stock options exercised during the three months ended March 31, 2017 was \$1.4 million.

(14) Income Taxes

Due to the fact that the Company has significant net operating loss carryforwards and has recorded a valuation allowance against a significant portion of its deferred tax assets, foreign withholding taxes are the primary driver of Income tax expense.

Components of Income tax expense were as follows (in thousands):

	Three Months Ended March 31,	
	2018	2017
Foreign withholding tax	\$ 3,887	\$ 4,208
State income tax	57	566
Foreign income tax	346	563
Release of deferred tax asset valuation allowance	—	(152)
Change in unrecognized tax benefits	(121)	64
Change in net deferred tax liabilities	48	318
Income tax expense	\$ 4,217	\$ 5,567

The Company believes it has provided adequate reserves for all tax deficiencies or reductions in tax benefits that could result from U.S. federal, state and foreign tax audits. The Company regularly assesses the potential outcomes of these audits in order to determine the appropriateness of its tax positions. Adjustments to accruals for unrecognized tax benefits are made to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular income tax audit. However, income tax audits are inherently unpredictable and there can be no assurance the Company will accurately predict the outcome of these audits. The amounts ultimately paid on resolution of an audit could be materially different from the amounts previously recognized, and therefore the resolution of one or more of these uncertainties in any particular period could have a material adverse impact on the Condensed Consolidated Financial Statements.

Tax Act of 2017

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 which affect 2018 and later years, including, but not limited to, a reduction of the U.S. federal income tax rate from 35% to 21%, a general elimination of U.S. federal income taxes on dividends from foreign subsidiaries and a new provision designed to tax global intangible low-taxed income ("GILTI"), a limitation of the deductibility of interest expense, a limitation of the deduction for newly generated net operating losses to 80% of current year taxable income and the elimination of net operating loss carrybacks.

The Company has not completed its accounting for the income tax effects of the Tax Act of 2017. On December 22, 2017, the SEC Staff issued guidance to address the application of U.S. GAAP in situations where a registrant does not have the necessary information to complete the accounting for certain effects of the Tax Act of 2017. Where the Company has made reasonable estimates of the effect, but for which the analysis is not yet complete, the Company has recorded provisional amounts based on information available as of March 31, 2018. During the three months ended March 31, 2018, no adjustments were made to the provisional amounts recognized as of December 31, 2017. Where the Company has not been able to make reasonable estimates of the effect the Tax Act of 2017, no amounts have been recognized and the Company has continued accounting for those items based on the tax laws in effect immediately prior to enactment of the Tax Act of 2017. The items described below, including the provisional items, are subject to change as additional information becomes available, limited to a measurement period of one year from enactment of the Tax Act of 2017.

The Tax Act of 2017 requires that certain income (i.e., GILTI) earned by foreign subsidiaries must be included currently in the gross income of the U.S. shareholder. Due to the complexity of the GILTI rules and the lack of clear guidance on federal and state application of the GILTI rules, the Company has not completed its analysis of the tax impacts of the GILTI, but has recorded a provisional amount during the three months ended March 31, 2018. Under U.S. GAAP, the Company is permitted to make an accounting policy election to either treat taxes due on future inclusions in U.S. taxable income related to GILTI as a current-period expense when incurred or to factor such amounts into the Company's measurement of its deferred taxes. The Company has made an accounting policy election to treat GILTI as a current-period expense when incurred.

The Tax Act of 2017 created a minimum tax on corporations by limiting certain deductions for payments to related foreign persons (referred to as the base erosion and anti-abuse tax ("BEAT")). Due to the complexity of the BEAT rules and the

lack of clear guidance on federal and state application of the BEAT rules, including rules on the ability to use loss carryovers to offset BEAT liability, the Company has not completed its analysis of the impacts of the BEAT, but has recorded a provisional amount during the three months ended March 31, 2018.

(15) Segment Information

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 operations are organized into two reportable segments for financial reporting purposes: Product and Intellectual Property Licensing. The Product segment consists primarily of licensing Company-developed UX products and services to multi-channel video service providers and CE manufacturers, in-guide advertising revenue, data analytics revenue and revenue from licensing the TiVo service, licensing metadata and selling TiVo-enabled devices. The Product segment also includes sales of legacy Analog Content Protection, VCR Plus+ and media recognition products. The Intellectual Property Licensing segment consists primarily of licensing the Company's patent portfolio to U.S. and international pay-television providers (directly and through their suppliers), mobile device manufacturers, CE manufacturers and OTT video providers.

Segment results are derived from the Company's internal management reporting system. The accounting policies used to derive segment results are substantially the same as those used by the consolidated company. Intersegment revenues and expenses have been eliminated from segment financial information as transactions between reportable segments are excluded from the measure of segment profitability reviewed by the CODM. In addition, certain costs are not allocated to the segments as they are considered corporate costs. Corporate costs primarily include general and administrative costs such as corporate management, finance, legal and human resources. The CODM uses an Adjusted EBITDA (as defined below) measure to evaluate the performance of, and allocate resources to, the segments. Segment balance sheets are not used by the CODM to allocate resources or assess performance.

Segment results were as follows (in thousands):

	Three Months Ended March 31,	
	2018	2017
Product		
Platform Solutions	\$ 95,940	\$ 88,183
Software and Services	18,479	25,269
Other	2,433	1,591
Revenues, net	116,852	115,043
Adjusted Operating Expenses (1)	89,466	96,996
Adjusted EBITDA (2)	27,386	18,047
Intellectual Property Licensing		
US Pay TV Providers	49,915	63,344
CE Manufacturers	8,968	10,843
New Media, International Pay TV Providers and Other	14,102	16,534
Revenues, net	72,985	90,721
Adjusted Operating Expenses (1)	25,357	24,187
Adjusted EBITDA (2)	47,628	66,534
Corporate		
Adjusted Operating Expenses (1)	16,048	16,357
Adjusted EBITDA (2)	(16,048)	(16,357)
Consolidated		
Total Revenues, net	189,837	205,764
Adjusted Operating Expenses (1)	130,871	137,540
Adjusted EBITDA (2)	58,966	68,224
Depreciation	5,141	5,472
Amortization of intangible assets	41,412	41,700
Restructuring charges	4,546	4,539
Equity-based compensation	12,024	14,025
Transition and integration costs	2,410	7,199
Earnout amortization	958	958
CEO transition cash costs	625	—
Remeasurement of contingent consideration	890	(324)
Operating loss	(9,040)	(5,345)
Interest expense	(11,634)	(10,264)
Interest income and other, net	1,566	(63)
Gain on interest rate swaps	4,311	521
TiVo Acquisition litigation	—	(12,906)
Loss on debt extinguishment	—	(108)
Loss on debt modification	—	(929)
Loss from continuing operations before income taxes	\$ (14,797)	\$ (29,094)

- (1) Adjusted Operating Expenses is defined as operating expenses excluding Depreciation, Amortization of intangible assets, Restructuring charges, Equity-based compensation, Transition and integration costs, retention earn-outs payable to former shareholders of acquired businesses, CEO transition cash costs and Remeasurement of contingent consideration.
- (2) Adjusted EBITDA is defined as operating income excluding Depreciation, Amortization of intangible assets, Restructuring charges, Equity-based compensation, Transition and integration costs, retention earn-outs payable to former shareholders of acquired businesses, CEO transition cash costs and Remeasurement of contingent consideration.

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

Forward-Looking Statements

This Quarterly Report on Form 10-Q for TiVo Corporation (the "Company," "we" or "us") contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities and Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995, including the discussion contained in Item 2., "Management's Discussion and Analysis of Financial Condition and Results of Operations." We have based these forward-looking statements on our current expectations and projections about future events or future financial performance, which include implementing our business strategy, successfully integrating Rovi Corporation ("Rovi") and TiVo Inc. (renamed TiVo Solutions Inc. ("TiVo Solutions")) following our acquisition of TiVo Solutions on September 7, 2016 (the "TiVo Acquisition"), realizing planned synergies and cost-savings associated with the TiVo Acquisition, future revenues to be recognized following adoption of the amended revenue recognition guidance, the expected impact of the Tax Act of 2017, the Company's previously announced exploration of strategic alternatives and its related cost-saving and restructuring activities, developing and introducing new technologies, obtaining, maintaining and expanding market acceptance of the technologies we offer, successfully renewing intellectual property licenses with the major North American pay TV service providers and competition in our markets.

In some cases, these forward-looking statements can be identified by terminology such as "may," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "future," "predict," "potential," "intend," or "continue," and similar expressions. These statements are based on the beliefs and assumptions of our management and on information currently available to our management. Our actual results, performance and achievements may differ materially from the results, performance and achievements expressed or implied in such forward-looking statements. For a discussion of some of the factors that might cause such a difference, see the "Risk Factors" contained in Part II, Item 1A. of this Quarterly Report on Form 10-Q. Except as required by law, we specifically disclaim any obligation to update such forward-looking statements.

The following commentary should be read in conjunction with the Consolidated Financial Statements and related notes thereto contained in our Annual Report on Form 10-K for the year ended December 31, 2017 and the Condensed Consolidated Financial Statements and related notes thereto contained in Part I, Item 1. of this Quarterly Report on Form 10-Q, which are incorporated by reference herein.

Executive Overview of Results

TiVo Corporation is a global leader in entertainment technology and audience insights. From the interactive program guide ("IPG") to the digital video recorder ("DVR"), we provide innovative products and licensable technologies that enable the world's leading media and entertainment companies to deliver the ultimate entertainment experience and improve how people find content across a changing media landscape.

Our operations are organized into two reportable segments for financial reporting purposes: Product and Intellectual Property Licensing. The Product segment consists primarily of the licensing of Company-developed user experience ("UX") products and services to multi-channel video service providers and consumer electronics ("CE") manufacturers, in-guide advertising, analytics, licensing the TiVo service, licensing metadata and selling TiVo-enabled devices. We group our Product revenues into three verticals based on the products delivered to our customer: Platform Solutions; Software and Services; and Other. Platform Solutions includes revenue from licensing Company-developed UX products, the TiVo service and selling TiVo-enabled devices. Software and Services includes revenue from licensing our metadata, advanced search and recommendation and data analytics products, as well as in-guide advertising revenue. Other revenue includes sales of legacy Analog Content Protection ("ACP"), VCR Plus+ and media recognition products.

The Intellectual Property Licensing segment consists primarily of licensing our patent portfolio to U.S. and international pay-television providers (directly and through their suppliers), mobile device manufacturers, consumer electronics ("CE") manufacturers and over-the-top ("OTT") video providers. Our broad portfolio of licensable technology patents covers many aspects of content discovery, DVR, video-on-demand ("VOD"), OTT experiences, multi-screen functionality and personalization, as well as interactive applications and advertising. We group our Intellectual Property Licensing revenues into three verticals based primarily on the business of our customer: US Pay TV Providers; CE Manufacturers; and New Media, International Pay TV Providers and Other. Revenue from US Pay TV Providers includes direct and indirect licensing of traditional US Pay TV Providers regardless of the particular distribution technology (e.g., cable, satellite or the internet). Revenue from CE Manufacturers includes the licensing of our patents to traditional CE manufacturers. New Media,

International Pay TV Providers and Other revenue includes licensing to international pay TV providers, virtual service providers, mobile device manufacturers and content and new media companies.

Total Revenues, net for the three months ended March 31, 2018 decreased by 8% compared to the prior year primarily as a result of a \$15.0 million decrease in revenue from TiVo Solutions agreements that were entered into with AT&T, DirecTV and EchoStar prior to the TiVo Acquisition Date, an \$11.5 million decrease in Hardware revenue primarily resulting from a planned transition away from the hardware business, a \$2.9 million decrease in advertising and analytics revenue, a \$2.8 million decrease in metadata revenue, primarily attributable to expiration of the Comcast Corporation ("Comcast") metadata license on September 30, 2017, and a \$2.1 million decrease in catch-up payments intended to make us whole for the pre-license period of use. These decreases were partially offset by an \$18.1 million net increase in revenue from international MSO customers as a result of adopting the amended revenue recognition guidance on January 1, 2018. For additional details on the changes in Total Revenues, net, see the discussion of our segment results below.

Our Intellectual Property Licensing agreement with Comcast expired on March 31, 2016. Our Product relationship with Comcast, primarily a metadata license, expired on September 30, 2017. The expiration of our intellectual property license with Comcast, as well as litigation initiated against Comcast, has resulted in a reduction of revenue and an increase in litigation costs. While we anticipate Comcast will eventually execute a new intellectual property license, the length of time that Comcast is out of license prior to executing a new license is uncertain. The amount of revenue recognized in the reporting period in which a new license is executed is uncertain and depends on a variety of factors, including license terms such as duration, pricing, covered products and fields of use, and the duration of the out-of-license period. In addition, while litigation costs have increased, 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 and the length of time we remain in litigation with Comcast.

For the three months ended March 31, 2018, our Loss from continuing operations, net of tax was \$19.0 million, or \$0.16 per diluted share, compared to \$34.7 million, or \$0.29 per diluted share, in the prior year. The improvement was primarily due to a \$12.9 million loss from the settlement of litigation associated with the TiVo Acquisition in the three months ended March 31, 2017 and a \$4.8 million decrease in Transition and integration costs.

Comparison of Three Months Ended March 31, 2018 and 2017

The consolidated results of operations for the three months ended March 31, 2018 compared to the prior year were as follows (dollars in thousands):

	Three Months Ended March 31,		Change \$	Change %
	2018	2017		
Revenues, net:				
Licensing, services and software	\$ 186,158	\$ 190,550	\$ (4,392)	(2)%
Hardware	3,679	15,214	(11,535)	(76)%
Total Revenues, net	189,837	205,764	(15,927)	(8)%
Costs and expenses:				
Cost of licensing, services and software revenues, excluding depreciation and amortization of intangible assets	43,215	42,306	909	2 %
Cost of hardware revenues, excluding depreciation and amortization of intangible assets	5,051	14,221	(9,170)	(64)%
Research and development	48,430	48,922	(492)	(1)%
Selling, general and administrative	51,082	53,949	(2,867)	(5)%
Depreciation	5,141	5,472	(331)	(6)%
Amortization of intangible assets	41,412	41,700	(288)	(1)%
Restructuring charges	4,546	4,539	7	— %
Total costs and expenses	198,877	211,109	(12,232)	(6)%
Operating loss	(9,040)	(5,345)	(3,695)	69 %
Interest expense	(11,634)	(10,264)	(1,370)	13 %
Interest income and other, net	1,566	(63)	1,629	(2,586)%
Gain on interest rate swaps	4,311	521	3,790	727 %
TiVo Acquisition litigation	—	(12,906)	12,906	N/a
Loss on debt extinguishment	—	(108)	108	N/a
Loss on debt modification	—	(929)	929	N/a
Loss from continuing operations before income taxes	(14,797)	(29,094)	14,297	(49)%
Income tax expense	4,217	5,567	(1,350)	(24)%
Loss from continuing operations, net of tax	(19,014)	(34,661)	15,647	(45)%
Income from discontinued operations, net of tax	1,297	—	1,297	N/A
Net loss	\$ (17,717)	\$ (34,661)	\$ 16,944	(49)%

Total Revenues, net

For the three months ended March 31, 2018, Total Revenues, net decreased 8% compared to the prior year as Product revenues increased \$1.8 million and Intellectual Property Licensing revenue decreased \$17.7 million. The adoption of the amended revenue recognition guidance increased revenue for the three months ended March 31, 2018 by \$3.7 million compared to what revenue would have been under the prior revenue recognition guidance. However, for the year ended December 31, 2018, we expect revenue to be approximately \$30 million lower under the amended revenue recognition guidance than it would have been under the prior revenue recognition guidance. For details on the changes in Total Revenues, net, see the discussion of our segment results below. Product generated 61.6% and 55.9% of Total Revenues, net for the three months ended March 31, 2018 and 2017, respectively.

Cost of licensing, services and software revenues, excluding depreciation and amortization of intangible assets

Cost of licensing, services and software revenues, excluding depreciation and amortization of intangible assets, consists primarily of employee-related costs, patent prosecution, maintenance and litigation costs and an allocation of overhead and facilities costs, as well as service center and other expenses related to providing the TiVo service and our metadata offering.

For the three months ended March 31, 2018, Cost of licensing, services and software revenues, excluding depreciation and amortization of intangible assets increased 2% compared to the prior year primarily as a result of a \$2.2 million increase in patent litigation and maintenance costs which primarily relates to the ongoing Comcast litigation, partially offset by benefits from cost saving initiatives. We expect to continue to incur material expenses related to the Comcast litigation.

Cost of hardware revenues, excluding depreciation and amortization of intangible assets

Cost of hardware revenues, excluding depreciation and amortization of intangible assets includes all product-related costs associated with TiVo-enabled devices, including manufacturing costs, employee-related costs, warranty costs and order fulfillment costs, as well as certain licensing costs and an allocation of overhead and facilities costs. Hardware is sold primarily as a means to grow our Licensing, services and software revenues and, as a result, generating positive gross margins from hardware sales is not the primary goal of the hardware operations.

For the three months ended March 31, 2018, the decrease in Cost of hardware revenues, excluding depreciation and amortization of intangible assets was primarily attributable to the planned transition away from the hardware business, a \$1.4 million decrease in Transition and integration costs associated with the TiVo Acquisition and benefits from cost saving initiatives.

Research and development

Research and development expenses are comprised primarily of employee-related costs, consulting costs and an allocation of overhead and facilities costs.

For the three months ended March 31, 2018, Research and development expenses decreased 1% compared to the prior year primarily due to a \$0.5 million decrease in Transition and integration costs associated with the TiVo Acquisition.

Selling, general and administrative

Selling expenses are comprised primarily of employee-related costs, including travel costs, advertising costs and an allocation of overhead and facilities costs. General and administrative expenses are comprised primarily of employee-related costs, including travel costs, corporate accounting, consulting, legal and tax fees and an allocation of overhead and facilities costs.

The 5% decrease in Selling, general and administrative expenses during the three months ended March 31, 2018 was primarily due to a \$2.8 million decrease in Transition and integration costs associated with the TiVo Acquisition, a \$1.7 million decrease in stock-based compensation and benefits from cost saving initiatives, partially offset by \$1.1 million of higher costs from remeasuring the Cubiware contingent consideration and higher costs associated with the hiring of our new chief executive officer.

We anticipate incurring transition and integration-related costs, primarily consisting of employee-related costs and information systems investments in connection with integrating the operations of TiVo Solutions with the operations of Rovi through the first half of 2018.

Restructuring charges

In February 2018, we announced our intention to explore strategic alternatives. In connection with exploring strategic alternatives, we initiated certain cost saving actions (the "Profit Improvement Plan"). As a result of the Profit Improvement Plan, we expect to move certain positions to lower cost locations, eliminate layers of management and rationalize facilities resulting in severance costs and the termination of certain leases and other contracts. In connection with the Profit Improvement Plan, we expect to generate at least \$25 million in annualized cost savings and to incur material restructuring costs through the middle of 2019. As a result of these actions, Restructuring charges of \$4.3 million for severance-related benefits were recognized in the three months ended March 31, 2018.

Following completion of the TiVo Acquisition, integration plans were implemented which are intended to realize operational synergies between Rovi and TiVo Solutions (the "TiVo Integration Restructuring Plan"). We eliminated duplicative positions resulting in severance costs and the termination of certain leases and other contracts as part of the integration activities. In connection with the TiVo Integration Restructuring Plan, we expect to generate over \$110 million in annualized cost synergies and have taken actions to produce more than \$100 million of run-rate synergies as of March 31, 2018. We expect to achieve the remaining cost synergies in the second quarter of 2018 and expect to incur restructuring costs through the second quarter of 2018. As a result of these actions, Restructuring charges of \$0.2 million and \$4.7 million were recognized in the three months ended March 31, 2018 and 2017, respectively.

Interest income and other, net

The \$1.6 million increase in Interest income and other, net during the three months ended March 31, 2018 was primarily due to a \$1.5 million benefit from changes in foreign currency exchange rates.

Gain on interest rate swaps

We have not designated any of our interest rate swaps as hedges for accounting purposes. Therefore, changes in the fair value of our interest rate swaps are not offset by changes in the fair value of the related hedged item in our Condensed Consolidated Statements of Operations (see Note 10 to the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q which is incorporated by reference herein). We generally utilize interest rate swaps to convert the interest rate on a portion of our loans with a floating interest rate to a fixed interest rate. Under the terms of our interest rate swaps, we receive a floating rate of interest and pay a fixed rate of interest. When there is an increase in expected future London Interbank Offering Rate ("LIBOR"), we generally have gains when adjusting our interest rate swaps to fair value. When there is a decrease in expected future LIBOR, we generally have losses when adjusting our interest rate swaps to fair value.

TiVo Acquisition litigation

On November 15, 2016, holders of 9.1 million shares of TiVo Solutions common stock outstanding at the TiVo Acquisition Date who did not vote to approve the TiVo Acquisition filed a petition for appraisal ("Dissenting Holders") in the Delaware Court of Chancery.

On March 27, 2017, TiVo Corporation agreed to settle the claims of the Dissenting Holders for \$117.0 million, which was paid in cash in April 2017. As the amount paid to Dissenting Holders resulted from a settlement other than a judgment from the Delaware Court of Chancery, a TiVo Acquisition litigation loss of \$12.9 million was recognized in the Condensed Consolidated Statements of Operations for the three months ended March 31, 2017. The TiVo Acquisition litigation loss represents the settlement amount in excess of the amount due to the Dissenting Holders as merger consideration.

Loss on debt extinguishment and Loss on debt modification

On January 26, 2017, TiVo Corporation, as parent guarantor, two of its wholly-owned subsidiaries, Rovi Solutions Corporation and Rovi Guides, Inc., as borrowers, and certain of TiVo Corporation's other subsidiaries, as subsidiary guarantors, entered into Refinancing Agreement No. 1 with respect to Term Loan Facility B. The \$682.5 million in proceeds from Refinancing Agreement No. 1 was used to repay existing loans under Term Loan Facility B in full. Creditors in Term Loan Facility B that elected not to participate in Refinancing Agreement No. 1 were extinguished, resulting in a Loss on debt extinguishment of \$0.1 million for the three months ended March 31, 2017. Creditors in Term Loan Facility B that elected to participate in Refinancing Agreement No. 1 and for which the present value of future cash flows was not substantially different were accounted for as a debt modification, resulting in a Loss on debt modification of \$0.9 million for the three months ended March 31, 2017.

Income tax expense

Due to our significant net operating loss carryforwards and a valuation allowance applied against a significant portion of our deferred tax assets, foreign withholding taxes are the primary driver of our Income tax expense.

We recorded Income tax expense for the three months ended March 31, 2018 of \$4.2 million, which primarily consists of \$3.9 million of foreign withholding taxes and \$0.3 million of foreign income taxes. We recorded Income tax expense for the three months ended March 31, 2017 of \$5.6 million, which primarily consists of \$4.2 million of foreign withholding taxes, \$0.6 million of state income taxes and \$0.6 million of foreign income taxes.

The year-over-year decrease in foreign withholding taxes was due to a smaller portion of license fees received in 2018 coming from licensees in countries subject to foreign withholding taxes.

The Company has not completed its accounting for the effects of the Tax Act of 2017 which was signed into law on December 22, 2017. The Tax Act of 2017 enacted comprehensive tax reform that made broad and complex changes to the U.S. federal tax code as described in Note 14 of the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which is incorporated by reference herein.

Segment Results

We report segment information in the same way management internally organizes the business for assessing performance and making decisions regarding the allocation of resources to the business units. The terms Adjusted Operating Expenses and Adjusted EBITDA in the following discussion use the definitions provided in Note 15 of the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which is incorporated by reference herein.

Product

The Product segment's results of operations for the three months ended March 31, 2018 compared to the prior year were as follows (dollars in thousands):

	Three Months Ended March 31,		Change \$	Change %
	2018	2017		
Platform Solutions	\$ 95,940	\$ 88,183	\$ 7,757	9 %
Software and Services	18,479	25,269	(6,790)	(27)%
Other	2,433	1,591	842	53 %
Product Revenues	116,852	115,043	1,809	2 %
Adjusted Operating Expenses	89,466	96,996	(7,530)	(8)%
Adjusted EBITDA	\$ 27,386	\$ 18,047	\$ 9,339	52 %
Adjusted EBITDA Margin	23.4%	15.7%		

For the three months ended March 31, 2018, Product revenue increased 2% compared to the prior year as Platform Solutions revenue increased 9%, Software and Services revenues decreased 27% and Other revenues increased 53%. Platform Solutions revenue increased \$7.8 million primarily as a result of \$23.9 million increase in revenue from an international MSO customer exercising a contractual option to purchase a fully paid license to its current version of the TiVo software and purchasing additional engineering services. Under the prior industry-specific software revenue recognition guidance, the Company would have recognized \$22.7 million less in revenue from these transactions as the Company did not have vendor-specific objective evidence ("VSOE") of fair value of support. Under the amended revenue recognition guidance, VSOE of fair value is no longer required and the Company has separated the license and support into distinct performance obligations. These increases were partially offset by a \$9.1 million decrease in revenue resulting from a planned transition away from the MSO hardware business and a \$4.6 million decrease in revenue from two international MSO software customers due to adopting the amended revenue recognition guidance on January 1, 2018. These two international MSO software customer licenses included minimum guaranteed royalties, most of which were recorded as an adjustment to Accumulated deficit as part of the cumulative effect of adopting the amended revenue recognition guidance as the Company has separated the license and support into distinct performance obligations. The reduction in revenue from these two international MSO customers is expected to continue for the remainder of 2018. Platform Solutions revenue includes \$3.5 million and \$12.6 million of hardware revenue for the three months ended March 31, 2018 and 2017, respectively. MSO hardware revenue is expected to continue to decline in the future as multiple system operator partners continue to shift to deploying the TiVo service on third-party hardware resulting in a decrease in the number of TiVo set-top boxes sold to multiple system operator partners.

Software and Services revenue decreased \$6.8 million as a result of a \$2.9 million decrease in advertising and analytics revenue and a \$2.8 million decrease in metadata revenue, which was primarily due to expiration of our metadata license with Comcast on September 30, 2017, and a \$1.1 million decrease in personalized content discovery revenue.

The \$2.4 million in Other revenue is primarily derived from ACP revenue, which is expected to decline in the future.

Product Adjusted Operating Expenses decreased 8% for the three months ended March 31, 2018 compared to the prior year primarily due to a decrease in Cost of hardware revenues, excluding depreciation and amortization of intangible assets as a result of the planned transition away from the hardware business.

The increase in Adjusted EBITDA Margin for the three months ended March 31, 2018 primarily relates to the adopting the amended revenue recognition standard, the fully paid software license discussed above and a change in the Product business mix toward higher margin products as hardware becomes a smaller portion of the business.

Intellectual Property Licensing

The Intellectual Property Licensing segment's results of operations for the three months ended March 31, 2018 compared to the prior year were as follows (dollars in thousands):

	Three Months Ended March 31,			
	2018	2017	Change \$	Change %
US Pay TV Providers	\$ 49,915	\$ 63,344	\$ (13,429)	(21)%
CE Manufacturers	8,968	10,843	(1,875)	(17)%
New Media, International Pay TV Providers and Other	14,102	16,534	(2,432)	(15)%
Intellectual Property Licensing Revenues	72,985	90,721	(17,736)	(20)%
Adjusted Operating Expenses	25,357	24,187	1,170	5 %
Adjusted EBITDA	\$ 47,628	\$ 66,534	\$ (18,906)	(28)%
Adjusted EBITDA Margin	65.3%	73.3%		

For the three months ended March 31, 2018, Intellectual Property Licensing revenue decreased 20% compared to the prior year due to a 21% decrease in revenue from US Pay TV Providers, a 17% decrease in revenue from CE Manufacturers and a 15% decrease in New Media, International Pay TV Providers and Other revenue. Revenue from US Pay TV Providers decreased primarily due to a \$15.0 million decrease in revenue from TiVo Solutions agreements entered into with AT&T, DirecTV and EchoStar prior to the TiVo Acquisition Date as a result of adopting the amended revenue recognition guidance on January 1, 2018 and contract expirations. These decreases were partially offset by a \$1.0 million increase in revenue from catch-up payments intended to make us whole for the pre-license period of use.

Prior to the TiVo Acquisition Date, TiVo Solutions entered into agreements with AT&T, DirecTV, EchoStar and Verizon Communications, Inc. that expire by July 2018. Revenue from US Pay TV Providers includes \$8.9 million and \$23.9 million for the three months ended March 31, 2018 and 2017, respectively, from these agreements. We expect to recognize \$8.4 million and \$2.8 million of revenue from these agreements in the second and third quarters of 2018, respectively. Consistent with our expectations, to date, renewals of the TiVo Solutions intellectual property licenses have not been executed on terms consistent with TiVo Solutions' historical pricing, and we do not anticipate that the remaining agreements will be renewed on terms similar to their historical pricing.

The decrease in revenue from CE Manufacturers was primarily attributable to a \$1.7 million decrease from a customer being out-of-license. We anticipate this customer will eventually execute a new license. On occasion, we have licenses expire in a given period where the customer is licensed later in the year, which results in catch-up payments intended to make us whole for the out-of-license period. Historically, a decrease in our licensees' market share, combined with continuing pressures on our licensees' business models, has caused revenue from CE Manufacturers to decline. Such declines could continue unless we are able to successfully license new entrants to this market.

New Media, International Pay TV Providers and Other revenue decreased due to a \$3.1 million decrease in revenue from catch-up payments intended to make us whole for the pre-license period of use, partially offset by growth in revenue from New Media and International Pay TV customers.

Intellectual Property Licensing Adjusted Operating Expenses increased 5% during the three months ended March 31, 2018 primarily as a result of a \$2.2 million increase in patent litigation and maintenance costs, which primarily relates to the ongoing Comcast litigation, partially offset by a \$1.0 million reduction in licensing fees related to our OTT licensing agreement with Intellectual Ventures.

The decrease in Adjusted EBITDA Margin for the three months ended March 31, 2018 is primarily the result of a decrease in Intellectual Property Licensing revenue and an increase in patent litigation and maintenance costs, partially offset by a reduction in licensing fees paid to Intellectual Ventures.

Corporate

Corporate costs primarily include general and administrative costs such as corporate management, finance, legal and human resources.

Corporate costs for the three months ended March 31, 2018 compared to the prior year were as follows (dollars in thousands):

	Three Months Ended March 31,		Change \$	Change %
	2018	2017		
Adjusted Operating Expenses	\$ 16,048	\$ 16,357	\$ (309)	(2)%

For the three months ended March 31, 2018, the decrease in Corporate Adjusted Operating Expenses primarily reflects benefits from cost saving initiatives.

Liquidity and Capital Resources

We finance our business primarily from operating cash flow. We believe our cash position remains strong and our cash, cash equivalents and marketable securities and anticipated operating cash flow, supplemented with access to capital markets as necessary, are generally sufficient to support our operating businesses, capital expenditures, restructuring activities, maturing debt, interest payments and income tax payments, in addition to investments in future growth opportunities and payments for dividends and share repurchases for at least the next twelve months. Our access to capital markets may be constrained and our cost of borrowing may increase under certain business, market and economic conditions; however, our use of a variety of funding sources to meet our liquidity needs is designed to facilitate continued access to sufficient capital resources under such conditions.

As of March 31, 2018, we had \$140.3 million in Cash and cash equivalents, \$148.2 million in Short-term marketable securities and \$73.0 million in Long-term marketable securities. Our cash, cash equivalents and marketable securities are held in numerous locations around the world, with \$238.0 million held by our foreign subsidiaries as of March 31, 2018. Due to our net operating loss carryforwards and the effects of the Tax Act of 2017, we could repatriate amounts to the U.S. with minimal income tax effects.

Sources and Uses of Cash

Cash flows for the three months ended March 31, 2018 compared to the prior year were as follows (in thousands):

	Three Months Ended March 31,		Change \$	Change %
	2018	2017		
Net cash provided by (used in) operating activities of continuing operations	\$ 35,728	\$ (19,733)	\$ 55,461	(281)%
Net cash (used in) provided by investing activities	(5,829)	36,114	(41,943)	(116)%
Net cash used in financing activities	(19,231)	(22,260)	3,029	(14)%
Effect of exchange rate changes on cash and cash equivalents	661	888	(227)	(26)%
Net increase (decrease) in cash and cash equivalents	\$ 11,329	\$ (4,991)	\$ 16,320	(327)%

Net cash provided by (used in) operating activities of continuing operations for the three months ended March 31, 2018 increased \$55.5 million. The increase was primarily due to improved profitability, the timing of collections on Accounts receivable, net and lower payments for the TiVo Integration Restructuring Plan and corporate bonuses. We expect to make material cash payments for restructuring actions in connection with the TiVo Integration Restructuring Plan and the Profit Improvement Plan through the middle of 2019. The availability of cash generated by our operations in the future could be adversely affected by business risks including, but not limited to, the Risk Factors described in Part II, Item 1A. of this Quarterly Report on Form 10-Q, which are incorporated by reference herein.

Net cash used in investing activities for the three months ended March 31, 2018 decreased \$41.9 million. Net proceeds from marketable security investment transactions decreased by \$17.8 million compared to the prior year. The increase in capital expenditures for the three months ended March 31, 2018 was primarily associated with infrastructure projects designed to integrate the TiVo Acquisition. We expect 2018 full year capital expenditures of between \$30 million and \$40 million for infrastructure projects designed to support anticipated growth in our business and to strengthen our operations infrastructure, which includes \$7 million to integrate the TiVo Acquisition and to rationalize facilities as part of our restructuring efforts, with continued elevated capital expenditures in 2019 as we complete the facility rationalization.

Net cash provided by investing activities for the three months ended March 31, 2017 also reflects transactions related to the Dissenting Holders in connection with the TiVo Acquisition. On November 15, 2016, holders of 9.1 million shares of TiVo Solutions common stock outstanding at the TiVo Acquisition Date who did not vote to approve the TiVo Acquisition filed a petition for appraisal in the Delaware Court of Chancery. On March 27, 2017, TiVo Corporation agreed to settle the claims of the Dissenting Holders for \$117.0 million, which was paid in cash in April 2017. In connection with the settlement, in March 2017, the exchange agent in the TiVo Acquisition returned \$25.1 million in cash related to the Dissenting Holders to TiVo Corporation. For additional details regarding the settlement with the Dissenting Holders, see Note 2 and Note 11 to the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which are incorporated by reference herein.

Net cash used in financing activities for the three months ended March 31, 2018 includes a decrease of \$6.7 million in tax withholding payments from the net share settlement of restricted awards, partially offset by a decrease in cash receipts of \$4.1 million from sales of stock through our employee stock purchase plan and the exercise of employee stock options. Net cash used in financing activities for the three months ended March 31, 2018 and 2017 each reflect \$1.8 million in principal payments on Term Loan Facility B. The three months ended March 31, 2017 also includes the effect of refinancing Term Loan Facility B. For the three months ended March 31, 2018 and 2017, dividends of \$0.18 per share were declared and paid for an aggregate cash payment of \$22.2 million and \$21.7 million, respectively.

On February 14, 2017, TiVo Corporation's Board of Directors approved an increase to the stock repurchase program authorization to \$150.0 million, which remains available as of March 31, 2018.

Capital Resources

The outstanding principal and carrying amount of debt we issued were as follows (in thousands):

	March 31, 2018		December 31, 2017	
	Outstanding Principal	Carrying Amount	Outstanding Principal	Carrying Amount
2020 Convertible Notes	\$ 345,000	\$ 315,412	\$ 345,000	\$ 311,766
2021 Convertible Notes	48	48	48	48
Term Loan Facility B	673,750	669,820	675,500	671,281
Total	<u>\$ 1,018,798</u>	<u>\$ 985,280</u>	<u>\$ 1,020,548</u>	<u>\$ 983,095</u>

During the next twelve months, \$7.0 million of outstanding principal is scheduled to be repaid. For more information on our borrowings, see Note 10 to the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which is incorporated by reference herein.

2020 Convertible Notes

Rovi issued \$345.0 million in aggregate principal of 0.500% Convertible Notes that mature on March 1, 2020 at par pursuant to an Indenture dated March 4, 2015 (the "2015 Indenture").

The 2020 Convertible Notes were convertible at an initial conversion rate of 34.5968 shares of TiVo Corporation common stock per \$1,000 of principal of notes, which was equivalent to an initial conversion price of \$28.9044 per share of TiVo Corporation common stock. The conversion rate and conversion price are subject to adjustment pursuant to the 2015 Indenture, including as a result of dividends paid by TiVo Corporation. As of March 31, 2018, the 2020 Convertible Notes are convertible at a conversion rate of 36.4752 shares of TiVo Corporation common stock per \$1,000 principal of notes, which is equivalent to a conversion price of \$27.4159 per share of TiVo Corporation common stock.

Holders may convert the 2020 Convertible Notes prior to the close of business on the business day immediately preceding December 1, 2019, in multiples of \$1,000 of principal under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ending on June 30, 2015 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any ten consecutive trading day period in which the trading price per \$1,000 of principal of 2020 Convertible Notes for each trading day was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day; or
- on the occurrence of specified corporate events.

On or after December 1, 2019 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert the 2020 Convertible Notes, in multiples of \$1,000 of principal, at any time.

In addition, during the 35-day trading period following a Merger Event, as defined in the 2015 Indenture, holders may convert the 2020 Convertible Notes, in multiples of \$1,000 of principal.

On conversion, a holder will receive the conversion value of the 2020 Convertible Notes converted based on the conversion rate multiplied by the volume-weighted average price of our common stock over a specified observation period. On conversion, Rovi will pay cash up to the aggregate principal of the 2020 Convertible Notes converted and deliver shares of our common stock in respect of the remainder, if any, of the conversion obligation in excess of the aggregate principal of the 2020 Convertible Notes being converted.

The conversion rate is subject to adjustment in certain events, including certain events that constitute a "Make-Whole Fundamental Change" (as defined in the 2015 Indenture). In addition, if we undergo a "Fundamental Change" (as defined in the 2015 Indenture) prior to March 1, 2020, holders may require Rovi to repurchase for cash all or a portion of the 2020 Convertible Notes at a repurchase price equal to 100% of the principal of the repurchased 2020 Convertible Notes, plus accrued and unpaid interest. The conversion rate is also subject to customary anti-dilution adjustments.

The 2020 Convertible Notes are not redeemable prior to maturity by Rovi and no sinking fund is provided. The 2020 Convertible Notes are unsecured and do not contain financial covenants or restrictions on the payment of dividends, the incurrence of indebtedness or the repurchase of other securities by Rovi. The 2015 Indenture includes customary terms and covenants, including certain events of default after which the 2020 Convertible Notes may be due and payable immediately.

2021 Convertible Notes

TiVo Solutions issued \$230.0 million in aggregate principal of 2.0% Convertible Senior Notes that mature October 1, 2021 (the "2021 Convertible Notes") at par pursuant to an Indenture dated September 22, 2014 ("the 2014 Indenture"). On October 12, 2016, TiVo Solutions repaid \$229.95 million of the par value of the 2021 Convertible Notes.

The 2021 Convertible Notes were convertible at an initial conversion rate of 56.1073 shares of TiVo Solutions common stock per \$1,000 principal of notes, which was equivalent to an initial conversion price of \$17.8230 per share of TiVo Solutions common stock. Following the TiVo Acquisition, the 2021 Convertible Notes were convertible at a conversion rate of 21.6181 shares of TiVo Corporation common stock per \$1,000 principal of notes and \$154.30 per \$1,000 principal of notes, which was equivalent to a conversion price of \$39.12 per share of TiVo Corporation common stock. The conversion rate and conversion price are subject to adjustment pursuant to the 2014 Indenture, including as a result of dividends paid by TiVo Corporation. As of March 31, 2018, the 2021 Convertible Notes are convertible at a conversion rate of 22.7925 shares of TiVo Corporation common stock per \$1,000 principal of notes and \$154.30 per \$1,000 principal of notes, which is equivalent to a conversion price of \$37.1043 per share of TiVo Corporation common stock.

TiVo Solutions can settle the 2021 Convertible Notes in cash, shares of common stock, or any combination thereof pursuant to the 2014 Indenture. Subject to certain exceptions, holders may require TiVo Solutions to repurchase, for cash, all or part of their 2021 Convertible Notes upon a "Fundamental Change" (as defined in the 2014 Indenture) at a price equal to 100% of the principal amount of the 2021 Convertible Notes being repurchased plus any accrued and unpaid interest up to, but excluding, the "Fundamental Change Repurchase Date" (as defined in the 2014 Indenture). In addition, on a "Make-Whole Fundamental Change" (as defined in the 2014 Indenture) prior to the maturity date of the 2021 Convertible Notes, TiVo Solutions will, in some cases, increase the conversion rate for a holder that elects to convert its 2021 Convertible Notes in connection with such Make-Whole Fundamental Change.

Senior Secured Credit Facility

On July 2, 2014, Rovi Corporation, as parent guarantor, and two of its wholly-owned subsidiaries, Rovi Solutions Corporation and Rovi Guides, Inc., as borrowers, and certain of its other subsidiaries, as subsidiary guarantors, entered into a Credit Agreement (the "Credit Agreement"). After the completion of the TiVo Acquisition, TiVo Corporation became a guarantor under the Credit Agreement. The Credit Agreement provided for a (i) five-year \$125.0 million term loan A facility (the "Term Loan Facility A"), (ii) seven-year \$700.0 million term loan B facility (the "Term Loan Facility B" and together with Term Loan Facility A, the "Term Loan Facility") and (iii) five-year \$175.0 million revolving credit facility (including a letter of credit sub-facility) (the "Revolving Facility" and together with the Term Loan Facility, the "Senior Secured Credit Facility"). In September 2015, Rovi made a voluntary principal prepayment to extinguish Term Loan Facility A and elected to terminate the Revolving Facility.

Prior to the refinancing described below, Term Loan Facility B was amortizing in equal quarterly installments in an aggregate annual amount equal to 1% of the original principal amount thereof, with any remaining balance payable on the final maturity date of Term Loan Facility B. Prior to the refinancing described below, loans under Term Loan Facility B bore interest, at our option, at a rate equal to either LIBOR, plus an applicable margin equal to 3.00% per annum (subject to a 0.75% LIBOR floor) or the prime lending rate, plus an applicable margin equal to 2.00% per annum.

On January 26, 2017, TiVo Corporation, as parent guarantor, two of its wholly-owned subsidiaries, Rovi Solutions Corporation and Rovi Guides, Inc., as borrowers, and certain of TiVo Corporation's other subsidiaries, as subsidiary guarantors, entered into Refinancing Agreement No. 1 with respect to Term Loan Facility B. The \$682.5 million in proceeds from Refinancing Agreement No. 1 was used to repay existing loans under Term Loan Facility B in full. The borrowing terms for Refinancing Agreement No. 1 are substantially similar to the borrowing terms of Term Loan Facility B. However, loans under Refinancing Agreement No. 1 bear interest, at the borrower's option, at a rate equal to either LIBOR, plus an applicable margin equal to 2.50% per annum (subject to a 0.75% LIBOR floor) or the prime lending rate, plus an applicable margin equal to 1.50% per annum. Refinancing Agreement No. 1 requires quarterly principal payments of \$1.75 million through June 2021, with any remaining balance payable in July 2021. Refinancing Agreement No. 1 is part of the Senior Secured Credit Facility.

The Credit Agreement contains customary representations and warranties and customary affirmative and negative covenants applicable to us and our subsidiaries, including, among other things, restrictions on indebtedness, liens, investments, mergers, dispositions, prepayment of other indebtedness, dividends and other distributions. The Credit Agreement is secured by substantially all of the Company's assets. We may be required to make an additional payment on Refinancing Agreement No. 1 each February. This payment is calculated as a percentage of the prior year's "Excess Cash Flow" as defined in the Credit Agreement. No payment was required for the three months ended March 31, 2018.

Critical Accounting Policies and Estimates

The preparation of our Condensed Consolidated Financial Statements in accordance with accounting principles generally accepted in the U.S. requires management to make estimates, assumptions and judgments that affect the amounts reported in the financial statements and accompanying notes. Our estimates, assumptions and judgments are based on historical experience and various other assumptions believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying amount of assets and liabilities that are not readily apparent from other sources. Making estimates, assumptions and judgments about future events is inherently unpredictable and is subject to significant uncertainties, some of which are beyond our control. Management believes the estimates, assumptions and judgments employed and resulting balances reported in the Condensed Consolidated Financial Statements are reasonable; however, actual results could differ materially.

On January 1, 2017, we adopted an amended accounting standard for revenue recognition. For additional information, see Note 1 and Note 5 to the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which are incorporated by reference herein. Other than the adoption of the amended revenue recognition guidance, there have been no significant changes to our critical accounting policies and estimates as compared to those disclosed in "Critical Accounting Policies and Estimates" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2017, which is incorporated by reference herein.

Revenue Recognition

General

Revenue is recognized on the transfer of control of promised goods or services to customers in an amount that reflects the consideration we expect to receive in exchange for those goods or services, which may include various combinations of products and services which are generally capable of being distinct and accounted for as separate performance obligations. Revenue is recognized net of any taxes collected from customers, which are subsequently remitted to governmental authorities.

Depending on the terms of the contract, a portion of the consideration received may be deferred because of a requirement to satisfy a future obligation. Stand-alone selling price for separate performance obligations is based on observable prices charged to customers for goods or services sold separately or the cost-plus-a-margin approach when observable prices are not available, considering overall pricing objectives.

Arrangements with Multiple Performance Obligations

Some of our 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. The allocation of transaction price among performance obligations in a contract may impact the amount and timing of revenue recognized in the Condensed 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 basis. Contract modifications that result in goods or services that are distinct from the previously existing contract are accounted for prospectively.

Variable Consideration

When a contract with a customer includes a variable transaction price, an estimate of the consideration to which we expect to be entitled to for transferring the promised goods or services is made at contract inception. Depending on the terms of the contract, the 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 the information (historical, current and forecast) that is reasonably available at contract inception. The effect 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 variable consideration are allocated to the performance obligations in the contract on the same basis as at contract inception.

Certain payments to retailers and distributors, such as market development funds and revenue shares, are treated as a reduction of the transaction price, and therefore revenue, rather than Selling, general and administrative expense. The reduction of revenue is recognized at the later of when revenue is recognized for the transfer of the related goods or services to the customer or when we pay or promise to pay the consideration.

When variable consideration is in the form of a sales-based or usage-based royalty in exchange for a license of intellectual property, or when a license of intellectual property 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.

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 we do 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 our license agreements to contain provisions that can either increase or decrease the transaction price. These variable amounts are generally estimated based on usage or the achievement of performance metrics. 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 the determination of whether to include estimated amounts in the transaction price.

Some hardware products are sold with a right of return and in other circumstances, other credits or incentives may be provided such as consideration (sales incentives) given to customers or resellers, which are accounted for as variable consideration when estimating the amount of contra revenue to recognize. Estimates of returns and credits are made at contract inception and updated each reporting period.

In contracts 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 software, we recognize 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.

On an ongoing basis, management evaluates its estimates, inputs and assumptions related to revenue recognition. Using 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.

Nature of goods and services

The following is a discussion of the principal activities from which we generate revenue.

Patent Licensing Agreements

We license our discovery patent portfolio to traditional pay TV providers, virtual service providers, OTT video providers, CE manufacturers and others. We license our patented technology portfolio under two revenue models: (i) fixed fee arrangements and (ii) per-unit royalty licenses.

Our long-term fixed-fee license agreements provide 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 related 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 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. In determining the stand-alone selling price of the release for past patent infringement claims and the future license, we consider such factors as the number of units shipped in the past and in what geographies these units were shipped, the number of units expected to be shipped in the future and in what geographies these units are expected to be shipped, as well as the licensing rate we generally receive for 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.

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

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 digital video recorders ("DVRs"), non-DVR set-top boxes ("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 over the contractual term. The related cost of such services is capitalized to the extent it is deemed recoverable and amortized to cost of revenues 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 we provide the TiVo service to the customer and recognizes 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. Project costs are primarily labor related to the 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. We generally recognize revenue from license fees for the TiVo service that it does not host on a per-subscriber per-month basis due to the recognition constraint on intellectual property usage-based royalties.

Subscription Services Revenues

Subscription services revenues primarily consist of fees that provide customers access to one or more of our hosted products such as our i-Guide IPG, advanced search and recommendations, metadata and analytics products, including routine customer support. We generally receive per-subscriber per-month fees for our i-Guide 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 its metadata or analytics licenses for the right to use its metadata or access its analytics platform and to receive regular updates. Revenue from our metadata and analytics service is recognized ratably over the contract period.

Passport Revenues

We license our Passport IPG software product to pay TV providers in North and South America. We generally receive per-subscriber per-month fees for a license to the Passport IPG software and support. Due to the usage-based royalty provisions of the revenue recognition guidance, revenue is generally recognized in the month the customer uses the software.

Advertising

We generate advertising revenue through our IPGs. Advertising revenue is recognized when the related advertisement is provided. Advertising revenue is recorded net of agency commissions and revenue shares with service providers and CE manufacturers.

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 a limited number of retailers. For sales through TiVo.com, the customer receives a DVR and commits to either a minimum subscription period of one year or for the lifetime of the DVR. After the initial subscription period, customers have various pricing options when they renew their subscription. Customers have the right to return the DVR within 30 days of purchase. Customers have the right to cancel their subscription to the TiVo service within 30 days of subscription activation for a full refund.

Stand-alone selling price for the TiVo subscription service is established based on stand-alone sales of the service and varies by the length of the service period. The stand-alone selling price of the DVR is determined based on the price for which we would sell the DVR without any service commitment from the customer.

The transaction price allocated to the DVR is recognized as revenue on delivery and the transaction price allocated to the service is recognized as revenue ratably over the service period. Subscription revenues 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. As of March 31, 2018, we recognize revenue for lifetime subscriptions over a 66-month period. We periodically reassess the estimated useful life of the DVR. When the actual useful life of the DVR materially differs from our 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.

Shipping and handling costs associated with outbound freight after control of a DVR has transferred to a customer are accounted for as a fulfillment cost and are included in Cost of hardware revenues, excluding depreciation and amortization of intangible assets.

Contractual Obligations

For information about our contractual obligations, see "Contractual Obligations" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2017, which is incorporated by reference herein. Our contractual obligations have not changed materially since December 31, 2017.

Off-Balance Sheet Arrangements

For information about our off-balance sheet arrangements, see "Off-Balance Sheet Arrangements" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2017, which is incorporated by reference herein. Since December 31, 2017, we have not engaged in any material off-balance sheet arrangements, including the use of structured finance vehicles, special purpose entities or variable interest entities.

Recent Accounting Pronouncements

For a summary of applicable recent accounting pronouncements, see Note 1 to the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which is incorporated by reference herein.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

In the normal course of business, we are exposed to market risks, including those related to changes in interest rates, foreign currency exchange rates and security prices that could impact our financial position, results of operations or cash flows. For quantitative and qualitative disclosures about market risk, see Part II, Item 7A of our Annual Report on Form 10-K for the year ended December 31, 2017, which is incorporated reference herein. Our exposure to market risk has not changed materially since December 31, 2017.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, we carried out an evaluation, under the supervision and with participation of management, including our Chief Executive Officer and our Chief Financial Officer, 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). In 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 necessarily is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on their evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

Changes in Internal Control Over Financial Reporting

Other than certain controls implemented in connection with adoption of the amended revenue and cost recognition guidance, we believe there have been no changes to our internal controls over financial reporting during the quarter ended March 31, 2018, that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

PART II. OTHER INFORMATION**ITEM 1. LEGAL PROCEEDINGS**

Information with respect to this item is contained in Note 11 to the Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which is incorporated by reference herein.

ITEM 1A. RISK FACTORS

Management believes that there have been no significant changes to the risk factors associated with our business during the three months ended March 31, 2018, as compared to those disclosed in Part 1, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2017, which is incorporated by reference herein.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS**Issuer Purchases of Equity Securities**

TiVo Corporation may choose to repurchase shares under its ongoing repurchase program when sufficient liquidity exists, the shares are trading at a discount relative to estimated intrinsic value and there are no alternative investment opportunities expected to generate a higher risk-adjusted return on investment.

The following table provides information about the Company's purchases of its common stock during the three months ended March 31, 2018 (in thousands, except per share amounts):

Period	Total Number of Shares Purchased (1)	Average Price Paid Per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (2)
January 2018	—	\$ —	—	\$ 150,000.0
February 2018	—	\$ —	—	\$ 150,000.0
March 2018	—	\$ —	—	\$ 150,000.0
Total	—	\$ —	—	

- (1) Excludes shares withheld to satisfy minimum statutory tax withholding requirements in connection with the net share settlement of restricted stock units. During the three months ended March 31, 2018, the Company withheld 0.2 million shares of common stock to satisfy \$2.9 million of required withholding taxes.
- (2) On February 14, 2017, TiVo Corporation's Board of Directors approved an increase to its common stock repurchase program authorization to \$150.0 million. The February 2017 authorization includes amounts which were outstanding under previously authorized share repurchase programs.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Company Form+	Filing Date	Exhibit Number	
31.01	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
31.02	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
32.01	Certification of Chief Executive Officer pursuant to Section 1350 of the Sarbanes-Oxley Act of 2002				*
32.02	Certification of Chief Financial Officer pursuant to Section 1350 of the Sarbanes-Oxley Act of 2002				*
101.INS	XBRL Instance Document				X
101.SCH	XBRL Taxonomy Extension Schema Document				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				X

* Furnished herewith.

Signatures

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

TIVO CORPORATION

Authorized Officer:

Date:
May 10, 2018

By: /s/ Enrique Rodriguez
Enrique Rodriguez
President and Chief Executive Officer

Principal Financial Officer:

Date:
May 10, 2018

By: /s/ Peter C. Halt
Peter C. Halt
Chief Financial Officer

Principal Accounting Officer:

Date:
May 10, 2018

By: /s/ Wesley Gutierrez
Wesley Gutierrez
Chief Accounting Officer and Treasurer

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Section 2: EX-31.01 (EXHIBIT 31.01)

Exhibit 31.01

CERTIFICATION

I, Enrique Rodriguez, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of TiVo 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 function):
- 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
 - 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: May 10, 2018

/s/ Enrique Rodriguez

Enrique Rodriguez

President and Chief Executive Officer

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Section 3: EX-31.02 (EXHIBIT 31.02)

Exhibit 31.02

CERTIFICATION

I, Peter C. Halt, certify that:

- I have reviewed this Quarterly Report on Form 10-Q of TiVo Corporation;
- 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;
- 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;
- 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:
 - 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;
 - 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;
 - 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
 - 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
- 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 function):
 - 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
 - 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: May 10, 2018

/s/ Peter C. Halt

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Section 4: EX-32.01 (EXHIBIT 32.01)

Exhibit 32.01

SECTION 1350 CERTIFICATION

In connection with the Quarterly Report of TiVo Corporation (the “Company”) on Form 10-Q for the period ended March 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), Enrique Rodriguez certifies in his capacity as Chief Executive Officer of the Company, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350, as adopted), that to the best of his knowledge:

- (a) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a) or 78o(d)), and
- (b) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operation of the Company.

IN WITNESS WHEREOF, the undersigned has hereunto signed this Certification as of May 10, 2018.

/s/ Enrique Rodriguez

Enrique Rodriguez

President and Chief Executive Officer

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Section 5: EX-32.02 (EXHIBIT 32.02)

Exhibit 32.02

SECTION 1350 CERTIFICATION

In connection with the Quarterly Report of TiVo Corporation (the “Company”) on Form 10-Q for the period ended March 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), Peter C. Halt certifies in his capacity as Chief Financial Officer of the Company, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350, as adopted), that to the best of his knowledge:

- (a) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a) or 78o(d)), and
- (b) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operation of the Company.

IN WITNESS WHEREOF, the undersigned has hereunto signed this Certification as of May 10, 2018.

/s/ Peter C. Halt

Peter C. Halt

Chief Financial Officer

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