REALNETWORKS INC
Form 10-K
March 08, 2019
UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K
(Mark One)
þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended December 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 1-37745
RealNetworks, Inc.
(Exact name of registrant as specified in its charter)

Washington	91-1628146
(State of incorporation)	(I.R.S. Employer Identification Number)

1501 First Avenue South, Suite 600, Seattle, Washington, 98134
(206) 674-2700
(Address of principal executive offices, zip code, telephone number)
Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, Par Value $0.001 per share	The NASDAQ Stock Market
Preferred Share Purchase Rights	The NASDAQ Stock Market

Securities registered pursuant to Section 12(g) of the Act:
None
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No þ

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act Yes ¨ No þ

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 þ No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

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

Large accelerated filer ¨	Accelerated filer þ
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 þ

The aggregate market value of the common stock held by non-affiliates of the registrant was $89 million on June 30, 2018, based on the closing price of the common stock on that date, as reported on the Nasdaq Global Select Market. Shares held by each executive officer and director have been excluded in that such persons may be deemed to be affiliates. In the case of 10% or greater shareholders, we have not deemed such shareholders to be affiliates unless there are facts and circumstances which would indicate that such shareholders exercise any control over our company. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of shares of the registrant’s common stock outstanding as of March 1, 2019 was 37,854,800.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant has incorporated by reference the information required by Part III of this Annual Report from its Proxy Statement relating to its 2019 Annual Meeting of Shareholders or an amendment to this Form 10-K, to be filed within 120 days after the end of its fiscal year ended December 31, 2018.

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PART I.

This Annual Report on Form 10-K and the documents incorporated herein by reference contain forward-looking statements that have been made pursuant to the provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on current expectations, estimates, and projections about RealNetworks' industry, products, management's beliefs, and certain assumptions made by management. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates," and similar expressions are intended to identify forward-looking statements. All statements contained in this report that do not relate to matters of historical fact should be considered forward-looking statements. Forward-looking statements include statements with respect to:

- the expected benefits and other consequences of our growth plans, strategic initiatives, and restructurings;
- our expected introduction, and related monetization, of new and enhanced products, services and technologies across our businesses;
- future revenues, operating expenses, income and other taxes, tax benefits, net income (loss) per diluted share available to common shareholders, acquisition costs and related amortization, and other measures of results of operations;
- the effects of our past acquisitions, including our January 18, 2019 acquisition of a controlling interest in Napster, and expectations for future acquisitions and divestitures;
- plans, strategies and expected opportunities for future growth, increased profitability and innovation;
- the expected financial position, performance, growth and profitability of, and investment in, our businesses and the availability of resources;
- the effects of legislation, regulations, administrative proceedings, court rulings, settlement negotiations and other factors that may impact our businesses;
- the continuation and expected nature of certain customer relationships;
- impacts of competition and certain customer relationships on the future financial performance and growth of our businesses;
- our involvement in potential claims, legal proceedings and government investigations, and the potential outcomes and effects of such potential claims, legal proceedings and governmental investigations on our business, prospects, financial condition or results of operations;
- the effects of U.S. and foreign income and other taxes on our business, prospects, financial condition or results of operations; and
- the effect of economic and market conditions on our business, prospects, financial condition or results of operations.

These statements are not guarantees of future performance and actual actions or results may differ materially. These statements are subject to certain risks, uncertainties and assumptions that are difficult to predict, including those noted in the documents incorporated herein by reference. Particular attention should also be paid to the cautionary language in Item 1A entitled "Risk Factors." RealNetworks undertakes no obligation to update publicly any forward-looking statements as a result of new information, future events or otherwise, unless required by law. Readers should, however, carefully review the risk factors included in other reports or documents filed by RealNetworks from time to time with the Securities and Exchange Commission, particularly the Quarterly Reports on Form 10-Q and any Current Reports on Form 8-K.

Item 1. Business

Overview

RealNetworks creates innovative technology products and services that make it easy to connect with and enjoy digital media. We invented the streaming media category in 1995 and continue to connect consumers with their digital media both directly and through partners, aiming to support every network, device, media type and social network. We provide our digital media products and services to consumers, mobile carriers, device manufacturers and other businesses.

Consumers use our digital media products and services to store, organize, play, manage and enjoy their digital media content, either directly from us or through our distribution partners. Our consumer products and services include our casual games, our ringback tone and messaging tools, and RealPlayer, our widely distributed media player. Our video compression technology is licensed primarily to OEMs, including manufacturers of mobile devices, smart TVs, and set-top boxes. The monetization, distribution, and licensing of our technology products and services are heavily dependent on contracts with third parties, such as mobile carriers and device manufacturers.

We were incorporated in 1994 in the State of Washington. Our common stock is listed on the NASDAQ Stock Market under the symbol “RNWK.”

In this Annual Report on Form 10-K ("10-K") for the year ended December 31, 2018, RealNetworks, Inc., together with its subsidiaries, is referred to as “RealNetworks,” the “Company,” “we,” “us,” or “our.” “RealPlayer,” “RealMedia,” and o trademarks of ours appearing in this report are our property.

Segments

We report revenue and operating income (loss) in three segments: (1) Consumer Media, (2) Mobile Services, and (3) Games. We allocate to our reportable segments certain corporate expenses which are directly attributable to supporting the business, including but not limited to a portion of finance, IT, legal, human resources and headquarters facilities. Remaining expenses, which are not directly attributable to supporting the business, are reported as corporate items. Also reported in our corporate segment are restructuring charges, lease exit and related charges, and stock compensation charges.

Consumer Media

In our Consumer Media segment, revenue is primarily derived from the licensing of our portfolio of video codecs. Codecs are an encoding and decoding technology which are designed to reduce the amount of bits required to stream or store media content, and modern codecs achieve significant savings in streaming bandwidth and storage costs. Our latest codec technology, RealMedia High Definition, which we refer to as RealMedia HD or RMHD, offers significant compression advantages over our prior-generation codec, RealMedia Variable Bitrate, or RMVB, which is still widely used. Our codec technologies business is primarily focused in the Chinese market, where RMVB is a popular format and also where we continue to focus most of our efforts to date regarding RMHD.

We continue to develop and innovate our codec technology to meet or exceed user demands for increasing compression efficiency and visual quality. We license our codec technology to a variety of electronic equipment, microchip, and integrated circuit manufacturers who embed our codec in their products, including mobile devices, laptops, smart TVs and other devices. To ensure a robust ecosystem for our codec technologies, we also promote the use of our codec technology to producers of media content and users of RealPlayer, thus encouraging the widespread adoption by device manufacturers.

We also generate revenue through online sales to consumers of our PC-based RealPlayer subscription products, including our SuperPass service, which provides consumers with access to digital entertainment content for a monthly fee. The RealPlayer media player, our enduring yet continually evolving software product, includes features and services that enable consumers to discover, play, download, manage and edit digital video, stream audio and video, download and save photos and videos from the web, transfer and share content on social networks, and edit their own photo and video content. As part of our RealPlayer download process, we also offer distribution of third-party software products to consumers, which generates additional revenue.

Mobile Services

Mobile Services consists of the various digital media services we provide to mobile and online service providers as software as a service (SaaS) offerings. Included in our SaaS offerings are our messaging products, which include our intercarrier messaging service, Kontxt (our text message management, anti-spam, and classification product), and our ringback tone service. We provide these services to a large number of mobile carriers around the world, although a significant portion of our revenue for this segment results from contracts with a few mobile carriers and one service partner. Also included in this segment are our recently introduced facial recognition and our RealTimes platforms. Our facial recognition platform, SAFR (Secure Accurate Facial Recognition), detects and matches millions of faces by leveraging artificial intelligence-based machine learning. We offer our RealTimes platform to mobile carriers for incorporation in their hosted cloud solutions. We also offer business intelligence, subscriber management and billing for the carriers who make our offerings available to their customers.

Our intercarrier messaging platform enables operators to send and receive SMS messages worldwide between networks and service providers, regardless of network technology, typically processing billions of SMS messages per day between users on hundreds of different networks. We earn revenue from our intercarrier messaging service based on a revenue-sharing arrangement with one service partner. Our next-generation mobile messaging platform, Kontxt, evaluates message streams sent from an application to a person (A2P) and classifies those messages into various categories. This allows network operators and other service providers to create policies for prioritization and delivery of messages and blocking spam and fraudulent messages, resulting in more efficient text message delivery.

Our ringback tone services enable callers to hear subscriber-selected music or messages instead of the traditional electronic ringing sound while waiting for the person they have called to answer. We primarily offer ringback tone services via mobile carriers, where, in return for providing, operating and managing the ringback tone service for the carrier customers, we generally enter into revenue-sharing arrangements with the carriers based on monthly subscription fees, content download fees or a combination of such fees paid by subscribers.

Our photo and video sharing platform, RealTimes, is offered to wireless carriers for integration in their hosted cloud solutions. Within our Mobile Services group, we focus on leveraging current and prospective wireless carrier relationships to increase integration of the RealTimes platform.

As disclosed in our 2017 10-K, in December 2017, we exited our low-margin music on demand service in Korea. As the profits generated from this business had significantly declined over time, we did not seek renewal of the sole contract for this service. Accordingly, this business is reported as discontinued operations in our financial statements for the periods disclosed in this 10-K.

Games

Our Games segment is focused on the development, publishing, and distribution of casual games, which are offered via mobile devices, digital downloads, and subscription play. Casual games typically have simple graphics, rules and controls, are quick to learn, and often include time-management, board, card, puzzle, word and hidden-object games. In the mobile market, we are focused on creating a large and diverse portfolio of products that combine casual game play and storytelling. We call this product line GameHouse Original Stories (Original Stories). Our Original Stories are based on a series of characters including Emily (Delicious Franchise), Amanda (Heart's Medicine) and Angela (Fabulous). The portfolio continues to grow as new characters and story lines are developed. Original Stories are primarily developed by our in-house game studios or through partnerships with external game developers for both mobile and PC play. Also offered to our customers are games licensed to us by third parties.

Our mobile games are digitally distributed through third-party application storefronts, such as the Apple App Store and Google Play, and are principally offered in North America, Europe and Latin America. As they are released, new games are typically introduced to consumers through offering a free trial before purchase on an individual basis. After reaching a certain level in game play, consumers then have the option to purchase the full game. In addition to the sale of mobile games, we also generate revenue from player purchases of in-game virtual goods and through advertising shown to consumers during play.

PC consumers can access and play both our Original Stories and hundreds of third party games through individual purchases or a subscription service offered through our GameHouse and Zylom websites, and through websites owned or managed by third parties. Consistent with our mobile offerings, we typically introduce new games by offering a free trial before purchase on an individual basis or as part of one of our subscription services.

See Note 20. Segment Information, in this 10-K for additional details on our segments and geographic concentrations.

Napster (formerly branded as Rhapsody)

At December 31, 2018, we owned approximately 42% of the issued and outstanding stock of Napster. Since the Rhapsody streaming music service has been re-branded as Napster, all references to Napster in this 10-K refer to Rhapsody International, Inc., d/b/a Napster. See Note 5. Napster Joint Venture, in this 10-K for additional details. As described in more detail in Note 22. Subsequent Event, on January 18, 2019 RealNetworks acquired an additional 42% stake in Napster from its former joint venture partner.

Napster provides music products and services that enable consumers to have access to digital music content from a variety of devices. The Napster unlimited subscription service offers unlimited access to a catalog of tens of millions of music tracks by way of on-demand streaming and conditional downloads. Napster also operates a radio-like service, branded as "UnRadio" in the U.S., through which users can listen to online radio stations based on selected artists or genres and download favorite tracks played on those stations for offline playback. Napster currently offers music services worldwide (under the

Napster brand) and generates revenue primarily through subscriptions to its music services either directly to consumers or through distribution partners, such as mobile carriers.

Customers

Our customers include consumers and businesses located throughout the world. Sales to customers outside the U.S., primarily in Europe and Asia, were 48%, 48% and 49% of our revenue during the years ended December 31, 2018, 2017 and 2016, respectively. See Note 20. Segment Information, for details on geographic concentrations and see Note 7. Allowance for Doubtful Accounts Receivable and Sales Returns, for details on customer revenue concentrations.

Research and Development

We devote a substantial portion of our resources to developing new products, enhancing existing products, expanding and improving our fundamental technology, and strengthening our technological expertise in all our businesses.

Sales, Marketing and Distribution

Our marketing programs are aimed at increasing brand awareness of our products and services and stimulating demand. We use a variety of methods to market our products and services, including paid search advertising, affiliate marketing programs, electronic and other online media, and email offers to qualified potential and existing customers, and providing product specific information through our websites. We also cross-market products and services offered by some of our businesses through the RealPlayer and Games marketing and distribution channels. We have subsidiaries and offices in several countries that market and sell our products outside the U.S.

Our products and services are marketed through direct and indirect channels. We use public relations, trade shows, events and speaking opportunities to market our products and services. We also use a variety of online channels, including social media, to promote and sell our products and services directly.

In our Consumer Media business, we market and sell our various RealPlayer services directly through our own websites such as Real.com, as well as indirectly through third party distribution partners. We also employ a sales team in China which works with distribution partners on marketing of our codec technologies.

Our Mobile Services sales, marketing and business development team works closely with many of our enterprise, infrastructure, wireless, broadband and media customers to identify new business opportunities for our entertainment applications, services and systems. Through ongoing communications with the product and marketing divisions of our customers, we tailor our SaaS offerings to their strategic needs and the needs of their subscribers.

Our games are marketed directly from our GameHouse and Zylom websites and through third-party distribution channels, such as application storefronts, search engines, online portals, and content publishers.

Customer Support

Customer support is integral to the provision of nearly all of our consumer products and services. Consumers who purchase and use our consumer software products and services can get assistance primarily via the Internet or email, depending on the product or service. For most of our consumer products, we contract with third-party outsource support vendors to provide the primary staffing for our first-tier customer support globally. We also provide various support service options for our business customers and for software developers using our software products and associated services. Support service options include online support services and on-site support personnel covering technical and business-related support topics.

Competition

The market for software and services for digital media delivery over the Internet and wireless networks is intensely competitive. Many of our current and potential competitors have longer operating histories, greater name recognition or brand awareness, more employees or significantly greater resources than we do.

In our Consumer Media segment, our codec technology faces competition from other next-generation video codecs, and many of our competitors have come together in patent pools to market and license competing codecs. In order to be successful, we must withstand the inherent market penetration that arises when multiple companies promote a shared codec solution. Our RealPlayer media player also continues to face competition from alternative streaming media playback applications which have obtained very broad market penetration.

In our Mobile Services segment, our SaaS business competes with a large and diverse number of domestic and international companies, and each of our SaaS offerings tends to face competitors specific to that product or service.

Our SaaS business continues to experience significant competitive pricing pressure from carriers and the proliferation of smartphone applications and services, some of which do not depend on our carrier customers for distribution to consumers. Many of our SaaS services require a high degree of integration with carrier or service provider networks and thus require a high degree of operational expertise. In addition, our ability to enhance services with new features as the digital entertainment market evolves is critical to our competitive position, as is our knowledge of the consumer environment to which these services are targeted.

Our Games business competes with a variety of distributors and publishers of casual games for PC and mobile platforms. Our in-house game development studios compete with other developers and publishers of mobile games based on our ability to create high quality games that resonate with consumers, and our ability to secure broad distribution.

Intellectual Property

As of December 31, 2018, we had 19 U.S. patents, 27 patents in other countries and more than 55 pending patent applications worldwide relating to various aspects of our technology. We regularly analyze our patent portfolio and prepare additional patent applications on current and anticipated features of our technology in various jurisdictions across the world, or sell or abandon patents or applications that are no longer relevant or valuable to our operations.

In addition to our patent portfolio, we have assembled, over time, an international portfolio of trademarks and service marks that covers certain of our products and services. We also have applications pending for additional trademarks and service marks in jurisdictions around the world, and have several unregistered trademarks. Many of our marks begin with the word “Real” (such as RealPlayer). We are aware of other companies that use “Real” in their marks alone or in combination with other words, and we do not expect to be able to prevent all third-party uses of the word “Real” for all goods and services.

Our ability to compete across our businesses partly depends on the superiority, uniqueness and value of the technology that we both develop and license from third parties. To protect our proprietary rights, we rely on a combination of patent, trademark, copyright and trade secret laws, confidentiality agreements with our employees and third parties, and protective contractual provisions. These efforts to protect our intellectual property rights may not be effective in preventing misappropriation of our technology, or may not prevent the development and design by others of products or technologies similar to or competitive with those we develop.

Employees

At December 31, 2018, we had approximately 441 employees, of which 129 were based in the Americas, 107 were based in Asia, and 205 were based in Europe. None of our employees are subject to a collective bargaining agreement.

Position on Charitable Responsibility

In periods when we have achieved sustained profitability, we intend to donate 5% of our net income to charitable organizations, which will reduce our net income for those periods. The non-profit RealNetworks Foundation, established in 2001, manages a substantial portion of our charitable giving efforts. Through the Foundation, we support our employees' philanthropic efforts by matching their donations of time and money to charitable organizations.

Available Information

Our corporate Internet address is www.realnetworks.com. We make available free of charge on www.investor.realnetworks.com our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and amendments to these reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). However, the information found on our corporate website is not part of this or any other report.

Item 1A. Risk Factors
You should carefully consider the risks described below together with all of the other information included in this Form 10-K. The risks and uncertainties described below are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we presently deem less significant may also impair our business operations. If any of the following risks actually occurs, our business, financial condition or operating results, and the trading price of our common stock, could be materially harmed.

Our growth initiatives could take longer than planned, be unsuccessful, or deplete our cash resources, any of which would have a material adverse effect on the performance of our businesses and financial results.

In recent years, we have developed new products and technologies, and funded initiatives, intended to create growth in our businesses, while simultaneously taking steps to reduce costs and increase profitability. These growth initiatives have impacted all segments of our organization, requiring us to allocate limited resources among our diverse business units.

Given the ambitious and significant nature of our growth initiatives, there is substantial risk that we may be unsuccessful in implementing our plans in a timely manner, our cash reserves may be depleted or insufficient to fully implement our plans, our growth initiatives may not gain adequate momentum, or the combination of our growth initiatives and cost reductions may not prove to be profitable. In any such case, our business would suffer, and our operational and financial results would be negatively impacted to a significant degree.

Our 84% equity interest in Napster could result in material negative implications to our financial condition and stock price.

From March 31, 2010, when we completed the restructuring of our digital audio music service joint venture, Rhapsody America LLC, now doing business under the Napster brand, until January 18, 2019, we did not have a majority voting interest in Napster. During that period, we accounted for Napster using the equity method of accounting and disclosed only strategic, business and financial information regarding Napster in our financial statements and disclosures, in accordance with accounting principles generally accepted in the United States ("GAAP"). Historically, Napster generated significant accounting losses and, applying the equity method of accounting, we recognized our share of such losses on our investment. As we had no implicit or explicit commitment to provide future financial support to Napster, we did not record any further share of Napster losses that would reduce our carrying value of Napster below zero.

On January 18, 2019, we acquired an additional 42% of the outstanding equity of Rhapsody International, Inc., which we refer to as Napster as noted above, from a third party in a distressed sale resulting in our ownership of an aggregate of 84% of Napster's outstanding stock. See Note 22. Subsequent Event, for additional information. We also now have the right to nominate directors constituting a majority of the Napster board of directors. Accordingly, although we have no legal or constructive obligation to fund Napster losses and it is our intention to have Napster continue to operate as an independent company, RealNetworks has a majority voting interest in Napster and will consolidate Napster's financial results into our financial statements for fiscal periods following the closing of the acquisition.

Due to our majority voting interest and the consolidation of Napster's results and financial position with ours, Napster's current liabilities will be included in RealNetworks' consolidated balance sheet, including accrued but unbilled music royalties related to past services, the ultimate payment of which is uncertain. These liabilities, although not a legal or constructive obligation of RealNetworks, are expected to cause consolidated working capital to be negative, which would cause management to consider whether liquidity risks exist. While we believe that these liabilities are separate obligations of Napster, in the remote event that any such liquidity issues become significant or are deemed material to our consolidated financial statements, there could be material negative implications to our financial condition and the trading price of our stock.

In addition, as we will begin consolidating Napster’s quarterly financial results beginning with our first quarter of 2019, we will need to receive Napster’s quarterly financial statements and related information in order to timely prepare our quarterly and annual consolidated financial statements and disclosures in our quarterly reports on Form 10-Q and annual reports on Form 10-K. Any failure in receiving Napster's financial statements and related information in a timely and materially accurate manner could cause our reports to be filed in an untimely and/or inaccurate manner, which would preclude us from utilizing certain registration statements and could negatively impact our stock price. See Note 5. Napster Joint Venture and Note 22. Subsequent Event, for further information related to Napster.

We need to successfully monetize our new products and services in order to sustain and grow our businesses, and manage our cash resources.

In order to sustain our current level of business and to implement our growth initiatives, we must successfully monetize our new products and services, including through existing and new relationships with distribution partners. Our digital media products and services must be attractive and useful to distribution partners and end users. The successful acceptance and monetization of these products and services, therefore, is subject to unpredictable and volatile factors beyond our control, including end-user preferences, competing products and services, the rapid pace of change in the market and the effectiveness of our distribution channels. Any failure by us to timely and accurately anticipate consumers' changing needs and preferences, emerging technological trends and data privacy norms, or changes in the competitive or regulatory landscape for our products and services could result in a failure to monetize our new products or the loss of market opportunities.

Moreover, in order to grow our businesses, we must make long-term investments, develop or obtain appropriate intellectual property and commit significant resources before knowing whether the products and services that we are developing or have introduced will meet the demands of the relevant market. We may not realize a sufficient return, or may experience losses, on these investments, thereby straining our limited cash resources and negatively affecting our ability to pursue other growth or strategic opportunities.

Sustaining and growing our businesses, and managing our cash resources, are subject to these risks inherent in developing, distributing and monetizing our new products and services. Our failure to manage these risks could materially impair our operations and financial results.

Furthermore, our products and services may be subject to legal challenge. Responding to any such claims may require us to enter into royalty and licensing agreements on unfavorable terms, require us to stop distributing or selling, or to redesign our products or services, or to pay damages, any of which could constrain our growth plans and cash resources.

Our businesses, including in connection with our growth initiatives, face substantial competitive challenges that may impair our success, thus negatively impacting our future growth.

Our digital media products and services, including legacy and products/services central to our growth initiatives, face a wide variety of competitors, many of which have longer operating histories, greater name or brand recognition, more employees and significantly greater resources than we do. In addition, current and potential competitors may include relatively new businesses that develop or use innovative technologies, products or features that could disrupt the market for technologies, products or features we currently market or are seeking to develop. In attempting to compete with any or all of these competitors, we may experience some or all of the following consequences, any of which would adversely affect our operating results and the trading price of our stock:

- reduced prices or margins,
- loss of current and potential customers, or partners and potential partners who distribute our products and services or who provide content that we distribute to our customers,
- changes to our products, services, technologies, licenses or business practices or strategies,
- lengthened sales cycles,
- inability to meet demands for more rapid sales or development cycles,
- industry-wide changes in content distribution to customers or in trends in consumer consumption of digital media products and services,
- pressure to prematurely release products or product enhancements, or
- degradation in our stature or reputation in the market.

Our Consumer Media technologies for media playback and production (RealPlayer, RealMedia VB and RealMedia HD) compete with alternative media playback technologies and audio and video content formats that have obtained broad market penetration. RealMedia VB and RealMedia HD are codecs, technology that enables compression and decompression of the media content in a (usually proprietary) format. We license our codec technology primarily to computer, smartphone and other mobile device manufacturers, and also to other partners that can support our efforts to build a strong ecosystem, like content providers and integrated circuit developers. To compete effectively, codec technologies must appeal to, and be adopted for use by, a wide range of parties: producers and providers of media content, consumers of media content, and device manufacturers who pre-load codec technologies into their devices. Our growth in this business is dependent on the successful promotion and adoption of our codec technologies to a wide and diverse target market, which is a complex and highly uncertain undertaking. If we are unable to compete successfully, our Consumer Media business could continue to decline.

The market for our Mobile Services business is highly competitive and continues to rapidly evolve. Our SaaS services face competition from a proliferation of applications and services, many of which carriers can deploy or offer to their subscribers, or which consumers can acquire independently of their carrier. We expect pricing pressure in this business to continue to materially impact our operating results in this business.

The branded services in our Games business compete with other developers, aggregators and distributors of mobile, online, and downloadable games. Our competitors vary in size and capabilities, some of which have high volume distribution channels and greater financial resources than we do; while others may be smaller and more able to quickly or efficiently adjust to market conditions. We also face significant price competition in the casual games market, and some of our competitors may be able to offer games for free, or reduce prices more aggressively. We expect competition to continue to intensify in this market. Our games development studios compete primarily with other developers of mobile, online, and downloadable games, and must continue to develop popular and high-quality game titles. Our Games business must also continue to execute on opportunities to expand the play of our games on a variety of non-PC platforms, including mobile, in order to maintain our competitive position and to grow the business.

The distribution and license of our technology products and services are governed by contracts with third parties, the terms of which subject us to significant risks that could negatively impact our revenue, expenses and assumption of liability related to such contracts.

In our Consumer Media and Mobile Services segments, we distribute and license most of our technology products and services pursuant to contracts with third parties, such as mobile carriers and their partners, online service providers, and OEMs and device manufacturers, many of whom may have stronger negotiating leverage due to their size and reach. These contracts govern the calculation of revenue generated and expenses incurred, how we recognize revenue and expenses in our financial statements, and the allocation of risk and liabilities arising from the product or service or distribution thereof. Terms impacting revenue, over which we may have limited if any control, may involve revenue sharing arrangements, end user pricing, usage levels, and exclusivity, all of which significantly affect the level of revenue that we may realize from the relationship. Moreover, contract terms around marketing and promotion of our products and other expense allocation could result in us bearing higher expenses or achieving weaker performance than we had anticipated from the relationship.

In addition, although our contracts with third parties are typically for a fixed duration, they could be terminated early; and they may be renegotiated on less favorable terms or may not be renewed at all by the other party. We must, therefore, seek additional contracts with third parties on an ongoing basis to sustain and grow our business. We expect to face continuing and increased competition for the technology products and services we provide, and there is no assurance that the parties with which we currently have contracts will continue or extend current contracts on the same or more favorable terms, or that we will obtain alternative or additional contracts for our technology products and services. The loss of existing contracts, the failure to enter new contracts, or the deterioration of terms in our contracts with third parties could materially harm our operating results and financial condition.

Nearly all of our contracts in which we provide to another party services or rights to use our technology include some form of obligation by us to indemnify the other party for certain liabilities and losses incurred by them, including liabilities resulting from third party claims for damages that arise out of the use of our technology. These indemnification terms provide us with certain procedural safeguards, including the right to control the defense of the indemnified party. We have in the past incurred costs to defend and settle such claims. Claims against which we may be obligated to defend others pursuant to our contracts could in the future result in payments that could materially harm our business and financial results.

Our operating results are difficult to predict and may fluctuate, which may contribute to continued weakness in our stock price.

The trading price for our common stock has a history of volatility although, more recently, has been in decline. As a result of the rapidly changing markets in which we compete, and restructuring, impairment and other one-time events specific to us, our operating results may fluctuate or continue to decline from period to period, which may contribute to further volatility or continued weakness of our stock price. Moreover, the general difficulty in forecasting our operating results and metrics, especially when factoring in our growth initiatives, could result in actual results that differ materially from expected results, again causing further volatility and continued weakness in our stock price. The difficulty in forecasting our operating results may also cause over or under investment in certain growth initiatives, as such investment is often planned based on expected financial results, thus causing more severe fluctuations in operating results and, likely, further volatility in our stock price.

Any impairment to our goodwill and definite-lived assets could result in a material charge to our earnings.

In accordance with GAAP, we test goodwill for possible impairment on an annual basis or more frequently in the event of certain indications of possible impairment. We review definite-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. These events or circumstances could include a significant change in the business climate, including a significant sustained decline in a reporting unit's fair value, changes in our operating plans and forecasts, legal factors, operating performance indicators, competition, sale or disposition of a significant portion of our business, a significant sustained decline in our market capitalization and other factors. If we were to determine that an impairment had occurred, we would be required to record an impairment charge, which could have a material negative, and unpredicted, impact on our financial results. The total carrying value of our goodwill and definite-lived assets as of December 31, 2018 was $19.7 million.

Continued loss of revenue from our subscription services may continue to harm our operating results.
Our operating results have been and will continue to be adversely impacted by the loss of subscription revenue related to our more traditional products and services. Subscribers cancel their subscriptions to our services for many reasons, including a perception that they do not use the services sufficiently or that the service does not provide enough value, a lack of attractive or exclusive content generally or as compared with competitive service offerings, or because customer service issues are not satisfactorily resolved. Revenue from our SuperPass subscription service, for example, has continued to decline over several periods, due to changes in consumer preferences and changes on our part to focus on other products and services we offer, and we expect this trend to continue.

Government regulation of the Internet, facial recognition technology, and other related technologies is evolving, and unfavorable developments could have an adverse effect on our operating results.
We are subject to regulations and laws specific to the marketing, sale and delivery of goods and services over the Internet. These laws and regulations, which continue to evolve, cover taxation, user privacy, data collection and protection, copyrights, electronic contracts, sales procedures, automatic subscription renewals, credit card processing procedures, consumer protections, digital games distribution, broadband Internet access and content restrictions. We cannot guarantee that we have been or will be fully compliant in every jurisdiction, as it is not entirely clear how existing laws and regulations governing issues such as privacy, taxation and consumer protection apply or will be enforced with respect to the products and services we sell through the Internet. Moreover, as Internet commerce continues to evolve, increasing regulation and/or enforcement efforts by federal, state and foreign agencies and the prospects for private litigation claims related to our data collection, privacy policies or other e-commerce practices become more likely. In addition, the adoption of any laws or regulations or the imposition of other legal requirements that adversely affect our ability to market, sell, and deliver our products and services could decrease our ability to offer or customer demand for our service offerings, resulting in lower revenue. For example, the European Union's General Data Protection Regulation (GDPR), effective in May 2018, created a variety of new compliance obligations, with significant penalties for noncompliance. We cannot provide assurance that the changes that we have adopted to our business practices will be compliant or that new compliance frameworks such as this will not have a negative impact on our financial results.
In addition, through the operation of our SAFR product, we are subject to regulations and laws generally and specifically applicable to the provision of facial recognition technology. New laws and regulations are under discussion and those that exist are untested, thus we cannot guarantee that we have been or will be fully compliant in every jurisdiction.
Future regulations, or changes in laws and regulations or their existing interpretations or applications, could require us to further change our business practices, raise compliance costs or other costs of doing business and result in additional historical or future liabilities for us, resulting in adverse impacts on our business and our operating results.
As a consumer-facing business, we receive complaints from our customers regarding our consumer marketing efforts and our customer service practices. Some of these customers may also complain to government agencies, and from time to time, those agencies have made inquiries to us about these practices. In addition, we may receive complaints or inquiries directly from governmental agencies that have not been prompted by consumers. We cannot provide assurance that governmental agencies will not bring future claims regarding our marketing, or consumer services or other practices.

We face financial and operational risks associated with doing business in non-U.S. jurisdictions and operating a global business, that have in the past and could in the future have a material adverse impact on our business, financial condition and results of operations.

A material portion of our revenue is derived from sales outside of the U.S. and most of our employees are located outside of the U.S. Consequently, our business and operations depend significantly on global and national economic conditions and on applicable trade regulations and tariffs. The growth of our business is also dependent in part on successfully managing our international operations. Our non-U.S. sales, purchases and operations are subject to risks inherent in conducting business abroad, many of which are outside our control, including the following:

- periodic local or geographic economic downturns and unstable political conditions;
- price and currency exchange controls;
- fluctuation in the relative values of currencies;
- difficulty in repatriating money, whether as a result of tax laws or otherwise;
- compliance with current and changing tax laws, and the coordination of compliance with U.S. tax laws and the laws of any of the jurisdictions in which we do business;
- difficulties protecting intellectual property;
- compliance with labor laws and other laws governing employees;
- local labor disputes;
- changes in trading policies, regulatory requirements, tariffs and other barriers, or the termination or renegotiation of existing trade agreements;
- impact of changes in immigration or other policies impacting our ability to attract, hire, and retain key talent; and
- difficulties in managing a global enterprise, including staffing, collecting accounts receivable, and managing suppliers, distributors and representatives.

Because consumers may consider the purchase of our digital entertainment products and services to be a discretionary expenditure, their decision whether to purchase our products and services may be influenced by macroeconomic factors that affect consumer spending such as unemployment, access to credit, negative financial news, and declines in income. In addition, mobile telecommunication carriers and other business partners may reduce their business or advertising spending with us or for our products and services they distribute to users in the face of adverse macroeconomic conditions, such as financial market volatility, government austerity programs, tight credit, and declines in asset values. We have in the past recorded material asset impairment charges due in part to weakness in the global economy, and we may need to record additional impairments to our assets in future periods in the event of renewed weakness and uncertainty in the global or a relevant national economy. Accordingly, any significant weakness in the national and/or global economy could materially impact our business, financial condition and results of operations in a negative manner.

Our international operations involve risks inherent in doing business globally, including difficulties in managing operations due to distance, language, and cultural differences, local economic conditions, different or conflicting laws and regulations, taxes, and exchange rate fluctuations. The functional currency of our foreign subsidiaries is typically the local currency of the country in which each subsidiary operates. We translate our subsidiaries' revenues into U.S. dollars in our financial statements, and continued volatility in foreign exchange rates, particularly if the U.S. dollar strengthens against the euro, may result in lower reported revenue or net assets in future periods. If we do not effectively manage any of the risks inherent in running our international businesses, our operating results and financial condition could be harmed.

Our business is conducted in accordance with existing international trade relationships, and trade laws and regulations. Changes in geopolitical relationships and laws or policies governing the terms of foreign trade, such as the recent rise in protectionist politics and economic nationalism, could create uncertainty regarding our ability to operate and conduct commercial relationships in affected jurisdictions, which could have a material adverse effect on our business and financial results. Additionally, our global operations may also be adversely affected by political events, domestic or international terrorist events and hostilities or complications due to natural or human-caused disasters. These uncertainties could have a material adverse effect on the continuity of our business and our results of operations and financial condition.

The loss of key personnel, or difficulty recruiting and retaining them, could significantly harm our business or jeopardize our ability to meet our growth objectives.

Our success depends substantially on the contributions and abilities of certain key executives and employees, and we cannot provide assurance that we will be able to retain such executives and employees in the future. Executive-level turnover, as we have experienced in the past and could experience in the future, could impact our ability to retain key executives and employees, which could then harm our business and operations to the extent there is customer or employee uncertainty arising from any such transition.

Our success is also substantially dependent upon our ability to identify, attract and retain highly skilled management, technical and sales personnel. Qualified individuals are in high demand and competition for such qualified personnel in our industry, particularly engineering talent, is extremely intense, and we may incur significant costs to attract or retain them. Changes in immigration or other policies in the U.S. or other jurisdictions that make it more difficult to hire and retain key talent, or to assign individuals to any of our locations as needed to meet business needs, could adversely affect our ability to attract key talent or deploy individuals as needed, and thereby adversely affect our business and financial results. There can be no assurance that we will be able to attract and retain the key personnel necessary to sustain our business or support future growth.

Acquisitions and divestitures involve costs and risks that could harm our business and impair our ability to realize potential benefits from these transactions.

As part of our business strategy, we have acquired and sold technologies and businesses in the past and expect that we will continue to do so in the future. Most recently, our January 18, 2019 acquisition of a controlling interest in Napster represents a significant acquisition for RealNetworks. Although Napster will continue to operate independently and its business will not be integrated into our businesses, we still face transaction-related costs and risks related to the acquisition.

The failure to adequately manage transaction costs and address the financial, legal and operational risks raised by acquisitions and divestitures of technology and businesses could harm our business and prevent us from realizing the benefits of these transactions. In addition, we may identify and acquire target companies, but those companies may not be complementary to our current operations and may not leverage our existing infrastructure or operational experience, which may increase the risks associated with completing acquisitions.

Transaction-related costs and financial risks related to completed and potential future purchase or sale transactions may harm our financial position, reported operating results, or stock price. Previous acquisitions have resulted in significant expenses, including amortization of purchased technology, amortization of acquired identifiable intangible assets and the incurrence of charges for the impairment of goodwill and other intangible assets, which are reflected in our operating expenses. New acquisitions and any potential additional future impairment of the value of purchased assets, including goodwill, could have a material negative impact on our future operating results. In compliance with GAAP, we evaluate these assets for impairment at least annually. Factors that may be considered a change in circumstances, indicating that our goodwill or definite-lived assets may not be recoverable, include reduced future revenue and cash flow estimates due to changes in our forecasts, and unfavorable changes to valuation multiples and discount rates due to changes in the market. If we were to conclude that any of these assets were impaired, we would have to recognize an impairment charge that could materially impact our financial results.

Purchase and sale transactions also involve operational risks that could harm our existing operations or prevent realization of anticipated benefits from a transaction. These operational risks include:

- difficulties and expenses in assimilating the operations, products, technology, information systems, and/or personnel of the acquired company;
- retaining key management or employees of the acquired company;
- entrance into unfamiliar markets, industry segments, or types of businesses;
- operating, managing and integrating acquired businesses in remote locations or in countries in which we have little or no prior experience;
- diversion of management time and other resources from existing operations;
- impairment of relationships with employees, affiliates, advertisers or content providers of our business or acquired business;
- assumption of known and unknown liabilities of the acquired company, including intellectual property claims; and
- potential impacts to our system of internal controls and disclosure controls and procedures.

We may be unable to adequately protect our proprietary rights or leverage our technology assets, and may face risks associated with third-party claims relating to intellectual property rights associated with our products and services.

Our ability to compete across our businesses partly depends on the superiority, uniqueness and value of our technology, including both internally developed technology and technology licensed from third parties. To protect our proprietary rights, we rely on a combination of patent, trademark, copyright and trade secret laws, confidentiality agreements with our employees and third parties, and protective contractual provisions. Our efforts to protect our intellectual property rights may not assure our ownership rights in our intellectual property, protect or enhance the competitive position of our products, services and technology, or effectively prevent misappropriation of our technology.

From time to time we receive claims and inquiries from third parties alleging that our technology used in our business may infringe the third parties' proprietary rights. These claims, even if not meritorious, could force us to make significant investments of time, attention and money in defense, and give rise to monetary damages, penalties or injunctive relief against us. We may be forced to litigate, to enforce or defend our patents, trademarks or other intellectual property rights, or to determine the validity and scope of other parties' proprietary rights in intellectual property. To resolve or avoid such disputes, we may also be forced to enter into royalty or licensing agreements on unfavorable terms or redesign our product features, services and technology to avoid actual or claimed infringement of misappropriation or technology. Any such dispute would likely be costly and distract our management, and the outcome of any such dispute (such as additional licensing arrangements or redesign efforts) could fail to improve our business prospects or otherwise harm our business or financial results.

Nearly all of our contracts by which we provide to another party services or rights to use our technology include some form of obligation by us to indemnify the other party for certain liabilities and losses incurred by them, including liabilities resulting from third party claims for damages that arise out of the use of our technology. Also, in 2012 we sold most of our patents, including patents that covered streaming media, to Intel Corporation, in a contract by which we agreed to indemnify Intel Corporation for certain third-party infringement claims against these patents up to the purchase price we received in the sale. Claims against which we may be obligated to defend others pursuant to our contracts expose us to the same risks and adverse consequences described above regarding claims we may receive directly alleging that our trademarks or technology used in our business may infringe a third party's proprietary rights. Disputes regarding the validity and scope of patents or the ownership of technologies and rights associated with streaming media, digital distribution, and online businesses are common and likely to arise in the future. We also routinely receive challenges to our trademarks and other proprietary intellectual property that we are using in our business activities. We are likely to continue to receive claims of third parties against us, alleging contract breaches, infringement of copyrights or patents, trademark rights, trade secret rights or other proprietary rights, or alleging unfair competition or violations of privacy rights.

Our business and operating results will suffer and we may be subject to market risk and legal liability if our systems or networks fail, become unavailable, unsecured or perform poorly so that current or potential users do not have adequate access to our products, services and websites.

Our ability to provide our products and services to our customers and operate our business depends on the continued operation and security of our information systems and networks and those of our service providers. A significant or repeated reduction in the performance, security or availability of our information systems and network infrastructure or that of our service providers could harm our ability to conduct our business, and harm our reputation and ability to attract and retain users, customers, advertisers and content providers. Many of our products are interactive Internet applications that by their very nature require communication between a client and server to operate.

We sell many of our products and services through online sales transactions directly with consumers, and their credit card information is collected and stored by our payment processors. The systems of our third party service providers may not prevent future improper access or disclosure of credit card information or personally identifiable information. We have an extensive privacy policy concerning the collection, use and disclosure of user data involved in interactions between our client, third party payment providers, and server products. A security breach that leads to disclosure of consumer account information, or any failure by us to comply with our posted privacy policy or existing or new privacy legislation, could harm our reputation, impact the market for our products and services, or subject us to litigation. We have on occasion experienced system errors and failures that caused interruption in availability of products or content or an increase in response time. Problems with our systems and networks, or the third party systems and networks that we utilize, could result from a failure to adequately maintain and enhance these systems and networks, natural disasters and similar events, power failures, intentional actions to disrupt systems and networks and many other causes. Many of our services do not currently have fully redundant systems or a formal disaster recovery plan, and we may not have adequate business interruption insurance to compensate us for losses that may occur from a system outage.

Changes in regulations applicable to the Internet and e-commerce that increase the taxes on the services we provide could materially harm our business and operating results.

As Internet commerce continues to evolve, increasing taxation by state, local or foreign tax authorities becomes more likely. For example, taxation of electronically delivered products and services or other charges imposed by government agencies may also be imposed. We believe we collect transactional taxes and are compliant and current in all jurisdictions where we believe we have a collection obligation for transaction taxes. Any regulation imposing greater taxes or other fees for products and services could result in a decline in the sale of products and services and the viability of those products and services, harming our business and operating results. A successful assertion by one or more states or foreign tax authorities that we should collect and remit sales or other taxes on the sale of our products or services could result in substantial liability for past sales.

In those countries where we have a tax obligation, we collect and remit value added tax, or VAT, on sales of "electronically supplied services" provided to European Union residents. The collection and remittance of VAT subjects us to additional currency fluctuation risks.

Changes in accounting standards and subjective assumptions, estimates, and judgments by management related to complex accounting matters could materially affect our financial results or financial condition.

We prepare our financial statements in conformity with GAAP. These accounting principles are subject to interpretation or changes by the Financial Accounting Standards Board ("FASB") and the SEC, and new accounting pronouncements and varying interpretations of accounting standards and practices have occurred in the past and are expected to occur in the future. Moreover, our financial statements require the application of judgments and estimates regarding a wide range of matters that are relevant to our business, such as revenue recognition, asset impairment and fair value determinations, stock-based compensation, equity method accounting, and intangible asset valuations. Changes in accounting standards or practices, or in our judgments and estimates underlying accounting standards and practices, could harm our operating results and/or financial condition. An example of a new accounting pronouncement is Accounting Standards Update ("ASU") 2014-09 related to revenue recognition. As discussed in Note 3. Revenue Recognition to the accompanying notes to the consolidated financial statements, ASU 2014-09 changed the way we recognize revenue and impacted the timing of revenue recognition. In February 2016, new guidance related to the accounting for leases was finalized. We will adopt the new guidance in the first quarter of 2019 and upon adoption will record a material increase in our assets and liabilities for the right-to-use assets and related liabilities. In addition, subjective judgments and estimates are often necessary in our accounting for investments, such as Napster. Changes to existing accounting rules or to our judgments and estimates underlying those rules could materially impact our reported operating results and financial condition.

We may be subject to additional income tax assessments and changes in applicable tax regulations could adversely affect our financial results.

We are subject to income taxes in the U.S. and numerous foreign jurisdictions. Significant judgment is required in determining our worldwide provision for income taxes, income taxes payable, and net deferred tax assets. In the ordinary course of business, there are many transactions and calculations where the ultimate tax determination is uncertain. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different than that which is reflected in our historical financial statements. An audit or litigation can result in significant additional income taxes payable in the U.S. or foreign jurisdictions which could have a material adverse effect on our financial condition and results of operations.

Our Chairman of the Board and Chief Executive Officer beneficially owns approximately 37% of our stock, which gives him significant control over certain major decisions on which our shareholders may vote or which may discourage an acquisition of us.

Robert Glaser, our Chairman of the Board and Chief Executive Officer, beneficially owns approximately 37% of our common stock. As a result, Mr. Glaser and his affiliates will have significant influence to:

- elect or defeat the election of our directors;
- amend or prevent amendment of our articles of incorporation or bylaws;
- effect or prevent a merger, sale of assets or other corporate transaction; and
- control the outcome of any other matter submitted to the shareholders for vote.

The stock ownership of Mr. Glaser may discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of RealNetworks, which in turn could reduce our stock price or prevent our shareholders from realizing a premium over our stock price.

Provisions of our charter documents, shareholder rights plan, and Washington law could discourage our acquisition by a third party.

Our articles of incorporation provide for a strategic transactions committee of the board of directors. Without the prior approval of this committee, and subject to certain limited exceptions, the board of directors does not have the authority to:

- adopt a plan of merger;
- authorize the sale, lease, exchange or mortgage of assets representing more than 50% of the book value of our assets prior to the transaction or on which our long-term business strategy is substantially dependent;
- authorize our voluntary dissolution; or

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- take any action that has the effect of any of the above.

Mr. Glaser has special rights under our articles of incorporation to appoint or remove members of a strategic transactions committee at his discretion that could make it more difficult for RealNetworks to be sold or to complete another change of control transaction without Mr. Glaser's consent. RealNetworks has also entered into an agreement providing Mr. Glaser with certain contractual rights relating to the enforcement of our charter documents and Mr. Glaser's roles and authority within RealNetworks. These rights and his role as Chairman of the Board of Directors, together with Mr. Glaser's significant beneficial ownership, create unique potential for concentrated influence of Mr. Glaser over potentially material transactions involving RealNetworks and decisions regarding the future strategy and leadership of RealNetworks.

We have adopted a shareholder rights plan, which was amended and restated in December 2008, amended in April 2016 and February 2018, and again amended and restated in December 2018. The plan provides that shares of our common stock have associated preferred stock purchase rights, the exercise of which would make the acquisition of RealNetworks by a third party more expensive to that party, having the effect of discouraging third parties from acquiring RealNetworks without the approval of our board of directors, which has the power to redeem these rights and prevent their exercise.

Washington law imposes restrictions on some transactions between a corporation and certain significant shareholders. The foregoing provisions of our charter documents, shareholder rights plan, our agreement with Mr. Glaser, and Washington law, as well as our charter provisions that provide for a classified board of directors and the availability of "blank check" preferred stock, could have the effect of making it more difficult or more expensive for a third party to acquire, or of discouraging a third party from attempting to acquire, control of us. These provisions may therefore have the effect of limiting the price that investors might be willing to pay in the future for our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate and administrative headquarters and certain research and development and sales and marketing personnel are located at our facility in Seattle, Washington.

We lease properties primarily in the following locations that are utilized by all of our business segments, unless otherwise noted below, to house our research and development, sales and marketing, and general and administrative personnel:

Location	Area leased (sq. feet)	Lease expiration
Seattle, Washington (1)	73,000	August 2024, with an option to renew for two five-year periods
Eindhoven, Netherlands (2)	23,000	June 2022

(1) As of December 31, 2018, we have reduced our use of the facility by 63%. The space which we no longer occupy is currently under sublease for all or a portion of the remaining lease term. For further information, please see Note 12. Lease Exit and Related Charges in this 10-K.

(2) This facility is utilized only by our Games segment.

In addition, we lease smaller facilities in the U.S. and foreign countries, some of which support the operations of all of our business segments while others are dedicated to a specific business segment. We believe that our properties are in good condition, adequate and suitable for the conduct of our business. For additional information regarding our obligations under leases, see Note 18. Commitments and Contingencies, in this 10-K.

Item 3. Legal Proceedings

See Note 18. Commitments and Contingencies, in this 10-K.

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Item 4. Mine Safety Disclosures
Not applicable.

PART II.

Item 5. Market for Registrant’s Common Equity, Related Shareholder Matters and Issuer Purchases of Equity Securities

Our common stock is traded on The NASDAQ Stock Market under the symbol RNWK.

As of January 31, 2019, there were approximately 174 holders of record of our common stock. Most shares of our common stock are held by brokers and other institutions on behalf of shareholders.

The declaration and payment of any future dividends, as well as the amount thereof, are subject to the discretion of our board of directors and will depend upon our results of operations, financial condition, capital levels, cash requirements, future prospects and other factors deemed relevant by our board of directors. Accordingly, there can be no assurance that we will declare and pay any dividends in the future. No cash dividends were paid in 2018 or 2017.

Comparison of 5 year cumulative total return to shareholders on RealNetworks, Inc., common stock with the cumulative total return on the NASDAQ Composite Index and the Dow Jones U.S. Technology Index for the period beginning on December 31, 2013 and ended on December 31, 2018.

The total return on our common stock and each index assumes the value of each investment was $100 on December 31, 2013, and that all dividends were reinvested. Return information is historical and not necessarily indicative of future performance.

Item 6. Selected Financial Data

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements and Notes to Consolidated Financial Statements included elsewhere in this report.

	Years Ended December 31,				
	2018	2017	2016	2015	2014
	(In thousands, except per share data)				
Consolidated Statements of Operations Data:					
Net revenue	$69,510	$78,718	$81,479	$92,448	$122,343
Cost of revenue	17,727	23,164	27,548	39,520	46,109
Extinguishment of liability	—	—	—	—	(10,580)
Gross profit	51,783	55,554	53,931	52,928	86,814
Operating expenses:					
Research and development	30,789	29,710	29,923	43,626	52,765
Sales and marketing	21,140	22,953	31,608	48,231	66,926
General and administrative	20,706	20,996	27,415	24,549	34,001
Restructuring and other charges	1,873	2,526	1,489	5,279	4,992
Lease exit and related charges	(454)	—	2,239	2,501	880
Total operating expenses	74,054	76,185	92,674	124,186	159,564
Operating income (loss)	(22,271)	(20,631)	(38,743)	(71,258)	(72,750)
Other income (expense)	(516)	439	1,746	(13,494)	(1,382)
Income (loss) from continuing operations before income taxes	(22,787)	(20,192)	(36,997)	(84,752)	(74,132)
Income tax expense (benefit)	2,202	(2,778)	776	(1,290)	489
Net income (loss) from continuing operations	(24,989)	(17,414)	(37,773)	(83,462)	(74,621)
Net income (loss) from discontinued operations, net of tax	—	1,109	1,223	1,615	2,806
Net income (loss)	$(24,989)	$(16,305)	$(36,550)	$(81,847)	$(71,815)
Net income (loss) per share - diluted:					
Continuing operations	(0.66)	(0.47)	(1.02)	(2.31)	(2.08)
Discontinued operations	—	0.03	0.03	0.05	0.08
Net income (loss) per share - diluted	$(0.66)	$(0.44)	$(0.99)	$(2.26)	$(2.00)
Shares used to compute diluted net income (loss) per share	37,582	37,163	36,781	36,165	35,947

	As of December 31,				
	2018	2017	2016	2015	2014
	(In thousands)				
Consolidated Balance Sheets Data:					
Cash, cash equivalents, and short-term investments	$35,585	$59,975	$77,052	$99,129	$161,706
Working capital	33,481	55,157	66,304	91,373	136,429
Total assets	80,319	121,496	130,437	161,343	250,299
Shareholders' equity	56,840	79,173	88,581	120,683	197,198

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Overview

RealNetworks creates innovative technology products and services that make it easy to connect with and enjoy digital media. We manage our business and report revenue and operating income (loss) in three segments: (1) Consumer Media (2) Mobile Services, and (3) Games.

Within our Consumer Media segment revenue is primarily derived from the software licensing of our video compression, or codec, technology, including our latest technology, RealMedia High Definition, or RMHD. We also generate revenue from the sale of our PC-based RealPlayer products, including RealPlayer Plus and related products. These products and services are delivered directly to consumers and through partners, such as OEMs and mobile device manufacturers.

Our Mobile Services business generates revenue primarily from the sale of subscription services, which includes our intercarrier messaging service and ringback tones, as well as through software licenses for the integration of our RealTimes platform and certain system implementations. We generate a significant portion of our revenue from sales within our Mobile Services business to a few mobile carriers. The loss of these contracts, whether by termination or non-renewal or renegotiation of contract terms that are less favorable to us could result in the loss of future revenues and anticipated profits.

Our Games business, through the GameHouse and Zylom brands, derives revenue from product sales of mobile games, games licenses, games subscription services, player purchases of in-game virtual goods, and from advertising on games sites and social network sites.

We allocate to our reportable segments certain corporate expenses which are directly attributable to supporting our businesses, including but not limited to a portion of finance, IT, legal, human resources and headquarters facilities. Remaining expenses, which are not directly attributable to supporting the business, are reported as corporate items. These corporate items also include restructuring charges, lease exit and related charges, and stock compensation expense.

In 2018, our consolidated revenue declined by $9.2 million compared with 2017, due to decreases of $4.4 million in Consumer Media revenue, $3.7 million in Games revenue and $1.1 million in Mobile Services revenue. See below for further information regarding fluctuations by segment.

As discussed in Note 3. Revenue Recognition, as a result of our transition to Topic 606 effective January 1, 2018, for the year ended December 31, 2018, our net revenues were $1.6 million higher as compared to the revenues which would have been recognized under previous accounting guidance.

As of December 31, 2018, we had $35.6 million in unrestricted cash, cash equivalents, and short-term investments, compared to $60.0 million as of December 31, 2017. The 2018 decrease in cash, cash equivalents, and short-term investments from December 31, 2017 was due to our ongoing cash flows used in operating activities and to the April 2018 acquisition of a Netherlands-based game development studio, as discussed in Note 4. Acquisitions and Disposals.

In light of declines in revenue, we have continued to reduce costs and better align our operating expenses with our revenue profile through various restructuring actions, as described below in Consolidated Operating Expenses. These actions drove the $2.1 million decline in our operating expenses during 2018 compared to 2017.

See Note 17. Discontinued Operations for further information regarding the expiration of our contract with LOEN Entertainment, Co, LTD (LOEN) in 2017 and the reporting of this business as a discontinued operation. Unless otherwise noted, amounts and percentages for all periods discussed below reflect the results of operations and financial condition of our continuing operations.

See Note 22. Subsequent Event for further information regarding our January 18, 2019 acquisition of an additional 42% stake in Napster from our former joint venture partner.

Summary of Results

Consolidated results of operations were as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Total revenue	$69,510	$78,718	$81,479	$ (9,208)	(12)%	$ (2,761)	(3)%
Cost of revenue	17,727	23,164	27,548	(5,437)	(23)%	(4,384)	(16)%

Gross profit	51,783	55,554	53,931	(3,771)	(7)%	1,623	3%

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Gross margin	74 %	71 %	66 %	3 %		5 %	
Total operating expenses	74,054	76,185	92,674	(2,131)	(3)%	(16,489)	(18)%
Operating income (loss)	$(22,271)	$(20,631)	$(38,743)	$(1,640)	(8)%	$18,112	47 %

2018 compared with 2017

Revenue decreased by $9.2 million, or 12%. The reduction in revenue resulted from declines of $4.4 million in our Consumer Media segment, $3.7 million in our Games segment and $1.1 million in our Mobile Services segment. For further detail regarding the changes, please see the discussions of segment revenues below. Gross margin increased to 74% from 71%, driven by margin increases in Games and Mobile Services. See below for further discussion around the fluctuations for each segment, including the impacts of our transition to Topic 606.

Operating expenses decreased by $2.1 million as compared to the prior year primarily due to a decrease of $0.9 million in salaries, benefits and professional service costs, $0.4 million in facilities and support services, and $0.2 million in marketing expense. Also contributing to the overall decrease were reduced restructuring costs of $0.7 million and a benefit of $0.5 million in lease exit and related charges, primarily due to the renegotiation of certain leases in the first quarter of 2018. These decreases were offset by certain benefits recorded in the first quarter of 2017: $0.5 million relating to the warrants we received from Napster and a $0.4 million release of previously accrued taxes.

2017 compared with 2016

Revenue decreased by $2.8 million, or 3%. The reduction in revenue resulted from a decline of $2.5 million in our Consumer Media segment, and a decline of $0.5 million in our Mobile Services segment. These declines were offset by an increase of $0.3 million in our Games segment. For further detail regarding the changes, please see the discussions of segment revenues below. Gross margin increased to 71% from 66%, driven by margin increases in Consumer Media and Mobile Services, offset by decreased margin in our games business due to increased app store fees as our mix shifts towards mobile games.

Operating expenses decreased by $16.5 million as compared to the prior year as a result of our continuing cost reduction efforts. These efforts were the primary reason for reductions to salaries, benefits and professional services costs of $7.7 million, facilities costs of $4.6 million, marketing expense of $1.8 million and lower lease exit costs of $2.2 million. Further contributing to the decrease year over year was a benefit of $0.5 million relating to warrants received from Napster in the first quarter of 2017, which is discussed further in Note 6. Fair Value Measurements. These decreases were offset by an increase of $1.0 million in restructuring due to increased severance charges.

Segment Operating Results

Consumer Media

Consumer Media segment results of operations were as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Total revenue	$18,168	$22,569	$25,051	$(4,401)	(20)%	$(2,482)	(10)%
Cost of revenue	3,858	4,460	7,074	(602)	(13)%	(2,614)	(37)%
Gross profit	14,310	18,109	17,977	(3,799)	(21)%	132	1 %
Gross margin	79 %	80 %	72 %	(1)%		8 %	
Total operating expenses	14,419	14,530	18,399	(111)	(1)%	(3,869)	(21)%
Operating income (loss)	$(109)	$3,579	$(422)	$(3,688)	NM	$4,001	NM

2018 compared with 2017

Total Consumer Media revenue decreased by $4.4 million, or 20% as compared to the prior year, due primarily to decreased software license revenues of $3.7 million, as well as a decrease in our subscription service revenues of $1.0 million. These decreases were offset in part by an increase in advertising and other revenues of $0.4 million.

Software License

For our software license revenues, the year-over-year decrease was related to declining shipments by our customers and the timing of contract renewals, which were offset in part by our transition to Topic 606 that accelerated the recognition of revenue by $1.5 million on certain codec technologies contracts during the year.

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Subscription Services
For our subscription services revenues, the decrease of $1.0 million was primarily due continuing declines in our legacy subscriptions products.
Cost of revenue decreased by $0.6 million, or 13%. The decrease to cost of revenue was driven by lower bandwidth and other support costs of $0.6 million, reduced royalties $0.4 million and reduced third party customer service costs of $0.2 million. These decreases were partially offset by an increase of $0.7 million in salaries and benefits, and professional service costs.
Operating expenses decreased by $0.1 million compared to the prior year, due to a $0.4 million decrease in salaries, benefits and professional service costs offset by a $0.3 million increase in marketing expenses.
2017 compared with 2016
Total Consumer Media revenue in 2017 decreased by $2.5 million, or 10% as compared to the prior year. Of the decrease, $1.6 million was due to continuing declines in our subscription products, as well as a decrease of $0.6 million from licensing of our codec technologies due to timing of contract renewals.
Cost of revenue decreased by $2.6 million, resulting in an increase in gross margin of 8 percentage points. The decrease to cost of revenue was driven by lower bandwidth and other support costs of $1.8 million directly resulting from our ongoing efforts to optimize functionality and increase efficiencies. The decrease was also due to reduced royalties compared to the prior year of $0.3 million and reduced third party customer service costs of $0.3 million.
Operating expenses decreased by $3.9 million compared to the prior year, due to lower expenses for facilities and support services of $2.8 million as a result of our ongoing cost reduction efforts, the acceleration of depreciation expense of $0.7 million taken in the first quarter of 2016 related to the obsolescence of e-commerce assets, and lower marketing expense of $0.3 million.
Mobile Services
Mobile Services segment results of operations were as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Total revenue	$29,670	$30,752	$31,289	$(1,082)	(4)%	$(537)	(2)%
Cost of revenue	8,623	10,021	12,606	(1,398)	(14)%	(2,585)	(21)%
Gross profit	21,047	20,731	18,683	316	2 %	2,048	11 %
Gross margin	71 %	67 %	60 %	4 %		7 %	
Total operating expenses	28,066	27,970	34,439	96	— %	(6,469)	(19)%
Operating income (loss)	$(7,019)	$(7,239)	$(15,756)	$220	3 %	$8,517	54 %

2018 compared with 2017
Mobile Services revenue decreased by $1.1 million, or 4%, and was primarily driven by a decrease of $1.6 million to our subscription services revenue stream, offset by an increase of $0.5 million in our software license revenue stream.

Software license
For our software license revenues, the increase was primarily due to the recognition of $0.6 million in revenues generated by our integrated RealTimes products offered to mobile carriers due in part to our transition to Topic 606 in the first quarter of 2018.

Subscription service
For our subscription services, the $1.6 million decrease was primarily a result of a decrease of $1.4 million in our ringback tones business, driven partially by the recognition of $0.9 million in the first quarter of 2017 following the execution of a long-term contract with our partner in Brazil. Also contributing to the decrease was a $0.2 million reduction in our intercarrier messaging business.
Cost of revenue decreased by $1.4 million or 14% as compared to the prior year, due primarily to lower bandwidth cost of $0.8 million, third-party customer service of $0.2 million, and salaries, professional services fees and benefits of $0.4 million.

2017 compared with 2016

Mobile Services revenue decreased by $0.5 million, or 2%, which was driven by decreases of $0.6 million for system integrations for our carrier partners and $0.6 million in our intercarrier messaging service. These decreases were offset by increases of $0.4 million in our ringback tones business and $0.4 million from our RealTimes platform.

Gross margin improved by $2.0 million, or 7 percentage points, as compared to the prior year. The increase was due primarily to our cost reduction efforts, including reductions to salaries and infrastructure costs, as well as reduced bandwidth and customer service costs.

Operating expenses decreased by $6.5 million, due to a decrease in salaries and benefits of $3.8 million, reduced expenses for facilities and support services of $1.7 million and a reduction in marketing expense of $0.6 million.

Games

Games segment results of operations were as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Total revenue	$21,672	$25,397	$25,139	$(3,725)	(15)%	$258	1 %
Cost of revenue	6,123	8,710	7,919	(2,587)	(30)%	791	10 %
Gross profit	15,549	16,687	17,220	(1,138)	(7)%	(533)	(3)%
Gross margin	72 %	66 %	68 %	6 %		(2)%	
Total operating expenses	20,324	20,401	19,644	(77)	— %	757	4 %
Operating income (loss)	$(4,775)	$(3,714)	$(2,424)	$(1,061)	(29)%	$(1,290)	(53)%

2018 compared with 2017

Games revenue decreased by $3.7 million, or 15% as compared to the prior year due to a decrease of $5.2 million in our product sales revenue stream, offset by an increase of $1.3 million in our advertising and other revenue stream.

Product sales

For our product sales, the decrease of $5.2 million was due primarily to timing of launches and specific games launched within our Original Stories portfolio. There were fewer games launched in 2018 compared to 2017, of which, our 2017 games experienced more comparative success than those titles released in 2018. Additionally in 2018, we launched our first free to play game which offers advertising within our games in lieu of purchasing the game. This model shifts the revenue from product sales to advertising.

Advertising and other

Our advertising and other revenues increased $1.3 million as compared to the prior year primarily as a result of new initiatives to offer in-game advertising within our mobile games and the launch of our first free to play game.

Cost of revenue decreased by $2.6 million, or 30%, as compared to the prior year. We recorded decreased publisher license and service royalties of $1.6 million and decreased app store fees of $1.1 million. These decreases were offset by an increase of $0.2 million in advertising costs. As a result of our April 2018 acquisition of a Netherlands-based game development studio described in Note 4. Acquisitions and Disposals, we no longer pay royalties for this studio; however, operating expenses relating to the ongoing operation of this studio have been incurred as noted in the following paragraph.

Operating expenses decreased by $0.1 million, as compared to the prior-year period, due to a decrease of $0.6 million in marketing expense offset by an increase of $0.5 million in people and professional service fees due to increased developer costs. As a result of our April 2018 acquisition of a Netherlands-based game development studio described in Note 4. Acquisitions and Disposals, operating expenses relating to the ongoing operation of this studio have been incurred.

2017 compared with 2016

Games revenue increased by $0.3 million, or 1% as compared to the prior year due to growth in our mobile games business, as the increase of $1.9 million in our mobile games revenues was offset by a decrease of $1.6 million in our other games revenues.

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Cost of revenue increased by $0.8 million, or 10%, as compared to the prior year, due to an increase of $0.6 million from increased royalty fees paid to developers, as well as an increase of $0.6 million in app store fees related to our mobile revenue growth in the casual games business. These increases were offset by lower facilities and support service costs as compared to the prior year.

Operating expenses increased by $0.8 million, or 4% as compared to the prior-year period, due to increased salaries, benefits and professional services costs of $1.2 million due to our continued investment in growing our mobile games offering, as well as increased facilities charges of $0.4 million. These increases were offset in part by lower marketing costs of $0.9 million.

Corporate

Corporate segment results of operations were as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Cost of revenue	$(877)	$(27)	$(51)	$ (850)	NM	$ 24	(47)%
Total operating expenses	11,245	13,284	20,192	(2,039)	(15)%	(6,908)	(34)%
Operating income (loss)	$(10,368)	$(13,257)	$(20,141)	$ 2,889	22 %	$ 6,884	34 %

2018 compared with 2017

Cost of revenue decreased by $0.9 million compared to the prior year due to the reversal of certain aged royalty liabilities relating to our legacy music business.

Operating expenses decreased by $2.0 million, or 15%. The decrease was primarily due to a decrease of $1.7 million in salaries, benefits, professional services and facilities costs due to our ongoing cost reduction efforts. Also contributing to the decrease were lower restructuring costs and a benefit in lease exit and related charges partially due to the renegotiation of certain leases, totaling $1.1 million. These decreases were offset by certain benefits recorded in the first quarter of 2017: $0.5 million relating to the warrants received from Napster and a $0.4 million release of previously accrued taxes.

2017 compared with 2016

Operating expenses decreased by $6.9 million, or 34%. The decrease was primarily due to a $4.6 million reduction in salary, benefit and professional service expenses, a reduction of $2.2 million in lease exit and related charges, as well as a benefit of $0.5 million relating to the warrant received from Napster in the first quarter of 2017, which is discussed further in Note 6. Fair Value Measurements, and lower expenses for facilities and support services as a result of our reduction of office space at our corporate headquarters and ongoing cost reduction efforts. These decreases were offset by an increase of $1.0 million relating to increased restructuring charges due to increased severance cost as compared to the prior year.

Consolidated Operating Expenses

Our operating expenses consist primarily of salaries and related personnel costs including stock based compensation, consulting fees associated with product development, sales commissions, amortization of certain intangible assets capitalized in our acquisitions, professional service fees, advertising costs, and restructuring charges. Operating expenses were as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Research and development	$30,789	$29,710	$29,923	$ 1,079	4 %	$(213)	(1)%
Sales and marketing	21,140	22,953	31,608	(1,813)	(8)%	(8,655)	(27)%
General and administrative	20,706	20,996	27,415	(290)	(1)%	(6,419)	(23)%
Restructuring and other charges	1,873	2,526	1,489	(653)	(26)%	1,037	70 %
Lease exit and related charges	(454)	—	2,239	(454)	NM	(2,239)	NM
Total consolidated operating expenses	$74,054	$76,185	$92,674	$ (2,131)	(3)%	$(16,489)	(18)%

Research and development expenses increased by $1.1 million, or 4%, in the year ended 2018 as compared to 2017 primarily due to an increase of $1.6 million in professional service expense, reflecting our continued efforts toward our growth initiatives and our April 2018 acquisition of a Netherlands based game development studio described in Note 4. Acquisitions and Disposals. There was also an increase of $0.3 million for facilities and support service costs.

These increases were offset by a decrease in salaries and benefits of $0.8 million.

Research and development expenses decreased by $0.2 million, or 1%, in the year ended 2017 as compared to 2016. The decrease was primarily due to lower expenses for facilities and support services of $1.0 million as a result of our ongoing cost reduction efforts. The decrease was also due to the acceleration of depreciation expense of $0.7 million taken in the first quarter of 2016. These decreases were offset in part by an increase of $1.3 million in salaries, benefits and professional services expense due to increased efforts towards our growth initiatives.

Sales and marketing expenses decreased by $1.8 million, or 8%, in the year ended 2018, compared with 2017. The decrease was due to reductions of $1.0 million in salaries, benefits and professional services fees, $0.4 million in facilities and support services costs, as well as a $0.3 million in marketing expenses.

Sales and marketing expenses decreased by $8.7 million, or 27%, in the year ended 2017, compared with 2016. The decrease was due to reductions of $5.7 million in salaries, benefits and professional services fees, a $1.9 million decrease in marketing expenses, as well as decreased facilities and support services costs of $1.1 million.

General and administrative expenses decreased by $0.3 million, or 1%, in the year ended 2018, compared with 2017. The decrease was primarily due to a reduction of $1.2 million in salaries, benefits and professional services fees, and a decrease of $0.3 million related to reduced facilities and support services costs. These decreases were offset by certain benefits recorded in the first quarter of 2017: $0.5 million relating to the warrants received from Napster and a $0.4 million release of previously accrued taxes.

General and administrative expenses decreased by $6.4 million, or 23%, in the year ended 2017, compared with 2016. The decrease was primarily due to a reduction of $3.4 million in salaries, benefits and professional services fees, a decrease of $1.8 million related to reduced facilities and support services costs, as well as the first quarter 2017 benefit of $0.5 million relating to warrants we received from Napster, which are discussed further in Note 6. Fair Value Measurements. Also contributing to the decrease was a benefit of $0.4 million in the first quarter of 2017 related to the release of previously accrued taxes.

Restructuring and other charges and Lease exit and related charges consist of costs associated with the ongoing reorganization of our business operations and our ongoing expense re-alignment efforts. The restructuring expense amounts in all years primarily related to severance costs due to workforce reductions. For additional details on these charges see Note 11. Restructuring Charges and Note 12. Lease Exit and Related Charges.

Other Income (Expenses)

Other income (expenses), net was as follows (dollars in thousands):

	2018	2017	2016	2018-2017 Change	% Change	2017-2016 Change	% Change
Interest income, net	$344	$436	$449	$ (92)	(21)%	$ (13)	(3)%
Gain (loss) on investments, net	—	4,500	8,473	(4,500)	(100)%	(3,973)	NM
Equity in net loss of Napster	(757)	(3,991)	(6,533)	3,234	(81)%	2,542	(39)%
Other income (expense), net	(103)	(506)	(643)	403	(80)%	137	(21)%
Total other income (expense), net	$(516)	$439	$1,746	$ (955)	218 %	$ (1,307)	75 %

The 2017 Gain (loss) on investment, net, was due to the collection and recognition of the second and final anniversary payment of $4.5 million from our 2015 sale of the Slingo and social casino business, which included an agreed-to additional $0.5 million as a result of the extension of the second anniversary payment from August to December.

The 2016 Gain (loss) on investments, net, was due to the collection and recognition of the first anniversary payment of $4.0 million from our 2015 sale of the Slingo and social casino business, a net gain of $2.5 million from the sale of our remaining J-Stream investment, and a gain of $2.0 million, net of transaction costs, from the sale of a domain name.

As described further in Note 5. Napster Joint Venture, we account for our investment in Napster under the equity method of accounting. The net carrying value of our investment in Napster is not necessarily indicative of the underlying fair value of our investment.

Income Taxes

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”). The Tax Act makes broad and complex changes to the U.S. tax code, including, but not limited to, (1) reducing the U.S. federal corporate tax rate from 35 percent to 21 percent; (2) requiring companies to pay a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries; (3) generally eliminating

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on dividends from foreign subsidiaries; (4) requiring a current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations; (5) eliminating the corporate alternative minimum tax (AMT) and changing how existing AMT credits can be realized; (6) creating the base erosion anti-abuse tax (BEAT), a new minimum tax; (7) creating a new limitation on deductible interest expense; and (8) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017.
As a result of the Tax Act and in accordance with SEC Staff Accounting Bulletin 118 ("SAB 118"), we recorded a provisional tax benefit of $3.6 million related to the repeal of corporate AMT in the period ending December 31, 2017. As of December 31, 2018, the Company has completed its analysis on the income tax effects of the Tax Act and has made no adjustments to the provisional amounts recorded during the period ending December 31, 2017. A summary of certain elements of the Tax Act that the Company has completed the accounting under SAB 118 is discussed below.

- The Tax Act reduces the corporate tax rate to 21 percent, effective January 1, 2018. Consequently, we have recorded a decrease related to deferred tax assets and liabilities, with a corresponding adjustment to the valuation allowance. The impact of the corporate tax rate change was not material and did not change from our provisional adjustments.
- The Tax Act repeals corporate AMT for tax years beginning January 1, 2018, and provides that existing AMT credit carryovers are refundable beginning in 2018. The Company has approximately $3.6 million of AMT credit carryovers that are expected to be fully refunded by 2022. As there was a valuation allowance against the Company’s AMT credit deferred tax asset, the repeal of corporate AMT resulted in an income tax benefit for the year ended December 31, 2017. The impact of the repeal of corporate AMT did not change materially from our provisional adjustments.
- The Tax Act provides for a one-time deemed repatriation transition tax on previously untaxed accumulated and current earnings and profits (E&P) of certain foreign subsidiaries. To determine the amount of tax, the Company determined the amount of post-1986 E&P of relevant subsidiaries, which was estimated to be zero. There was no change to this estimate and the Company will not have transition tax.
- The Tax Act creates a new requirement that certain income (i.e. GILTI) earned by controlled foreign corporations (CFCs) must be included currently in the gross income of the CFCs’ U.S. shareholder. GILTI is the excess of the shareholder’s “net CFC tested income” over the net deemed tangible income return, which is currently defined as the excess of (1) 10 percent of the aggregate of the U.S. shareholder’s pro rata share of the qualified business asset investment of each CFC with respect to which it is a U.S. shareholder over (2) the amount of certain interest expense taken into account in the determination of net CFC-tested income. Under GAAP, we are allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (“the period cost method”) or (2) factoring such amounts into the Company’s measurement of its deferred taxes (“the deferred method”). We have selected the period cost method, and did not expect to have GILTI inclusion. There was no change to this estimate, and the Company does not have any GILTI inclusion of its foreign subsidiaries in the period ending December 31, 2018.
- Prior to the Tax Act, the Company had not provided for U.S. income taxes on undistributed earnings and other outside basis differences of its foreign subsidiaries as it was the Company's intention for these tax basis differences to remain indefinitely reinvested. As a result of the Tax Act and other factors in the Company's strategic plan, the Company reevaluated its assertion and no longer intends to indefinitely reinvest substantially all of the Company's non-U.S. current and undistributed earnings in all foreign jurisdictions. As a result of this change, we have recorded deferred taxes of $1.0 million as of December 31, 2018 to reflect local country foreign withholding taxes associated with a future repatriation of such foreign earnings.

During the years ended December 31, 2018, 2017, and 2016, we recognized income tax expense of $2.2 million, income tax benefit of $2.8 million, and income tax expense of $0.8 million, respectively, related to U.S. and foreign income taxes.

The income tax expense for the year ended December 31, 2018 was largely the result of foreign withholdings taxes and an additional $1.0 million income tax expense for the accrued tax associated with future repatriations of foreign earnings that are no longer considered to be indefinitely reinvested. The tax benefit for the year ended December 31, 2017 was largely the result of a $3.6 million income tax benefit related to the repeal of corporate AMT under the Tax Act, offset by foreign withholding taxes and income taxes in foreign jurisdictions. The tax expense for the year ended December 31, 2016 was largely the result of foreign withholding taxes and income taxes in foreign jurisdictions.

We assess the likelihood that our deferred tax assets will be recovered based upon our consideration of many factors, including the current economic climate, our expectations of future taxable income, our ability to project such income, and the appreciation of our investments and other assets. We maintain a partial valuation allowance of $137.2 million for our deferred tax assets due to uncertainty regarding their realization as of December 31, 2018. The net increase in the valuation allowance since December 31, 2017 of $0.1 million was the result of an increase in current year deferred tax assets for which the Company maintains a valuation allowance.

We generate income in a number of foreign jurisdictions, some of which have higher tax rates and some of which have lower tax rates relative to the U.S. federal statutory rate. Changes to the blend of income between jurisdictions with higher or lower effective tax rates than the U.S. federal statutory rate could affect our effective tax rate. For the year ended December 31, 2018, decreases in tax expense from income generated in foreign jurisdictions with lower tax rates in comparison to the U.S. federal statutory rate were offset by increases in tax expense from income generated in foreign jurisdictions having comparable, or higher tax rates in comparison to the U.S. federal statutory rate.

Unrecognized tax benefits remained at $0.4 million as of December 31, 2018 and 2017. The unrecognized tax benefits are due to federal research and development tax credit carryforward risks. As of December 31, 2018, there are no unrecognized tax benefits remaining that would affect our effective tax rate if recognized, as the offset would increase the valuation allowance. We do not anticipate that the total amount of unrecognized tax benefits will significantly change within the next twelve months.

We file numerous consolidated and separate income tax returns in the U.S. including federal, state and local, as well as foreign jurisdictions. With few exceptions, we are no longer subject to U.S. federal income tax examinations for tax years before 2013 or state, local, or foreign income tax examinations for years before 1993. We are currently under audit by various states and foreign jurisdictions for certain tax years subsequent to 1993.

Liquidity and Capital Resources

The following summarizes working capital, cash, cash equivalents, short-term investments, and restricted cash and investments (in thousands):

	December 31,	
	2018	2017
Working capital	$33,481	$55,157
Cash, cash equivalents, and short-term investments	35,585	59,975
Restricted cash and investments	1,630	2,400

The decrease in 2018 working capital as compared to December 31, 2017, which includes cash, cash equivalents, and short term investments, was primarily due to our ongoing negative cash flow used in our operations of $19.2 million.

The following summarizes cash flow activity (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Cash provided by (used in) operating activities	$(19,221)	$(21,350)	$(24,328)
Cash provided by (used in) investing activities	3,798	36,818	11,362
Cash provided by (used in) financing activities	(62)	(117)	(345)

Cash used in operating activities consisted of net income (loss) adjusted for certain non-cash items such as depreciation and amortization, as well as the effect of changes in certain operating assets and liabilities.

Cash used in operating activities was $2.1 million less in the year ended December 31, 2018 as compared to 2017. Cash used in operations was less due primarily to the net change in operating assets and liabilities during 2018 compared to 2017. In the current year, we used cash of $0.5 million to fund the net change in operating assets and liabilities while in 2017 the net change in operating assets and liabilities used $7.1 million. This improvement was offset in part by the higher operating loss in 2018 compared to 2017.

Cash used in operating activities was $3.0 million less in 2017 as compared to 2016. The decrease in cash used in operating activities was primarily due to a lower operating loss in 2017 as compared to 2016, driven mainly by our ongoing cost reduction efforts, as previously discussed. The effect of the reduced operating loss was offset in part by the net increase in operating assets and liabilities during 2017 as compared to 2016. In 2017 we used cash of $7.1 million to fund the net change in operating assets and liabilities, while in 2016 the net change in operating assets and liabilities used was $1.2 million.

For the year ended December 31, 2018, cash provided by investing activities of $3.8 million was due to sales and maturities of short-term investments totaling $8.8 million. The sales and maturities were offset by our purchase of a

Netherlands-based game development studio in the second quarter of 2018 for net cash consideration of $4.2 million and by purchases of equipment, software and leasehold improvements of $0.8 million.

For the year ended December 31, 2017, cash provided by investing activities of $36.8 million was due to sales and maturities, net of purchases, of short-term investments totaling $34.6 million, and cash proceeds from the 2015 sale of our Slingo and social casino games business of $4.5 million. These proceeds were offset in part by the advance paid to Napster of $1.5 million and purchases of equipment, software and leasehold improvements of $0.7 million.

For the year ended December 31, 2016, cash provided by investing activities of $11.4 million was due to sales and maturities, net of purchases, of short-term investments totaling $8.5 million, cash proceeds from the 2015 sale of our Slingo and social casino games business of $4.0 million, cash proceeds of $3.3 million from the sale of J-Stream, and cash proceeds from the sale of a domain name of $2.1 million. These proceeds were offset in part by the advance paid to Napster of $3.5 million and purchases of equipment, software and leasehold improvements of $2.4 million.

Financing activities for the year ended December 31, 2018 used cash totaling $0.1 million which was from $0.3 million for tax payments from shares withheld upon vesting of restricted stock offset in part by proceeds received from the issuance of common stock of $0.2 million.

Financing activities for the year ended December 31, 2017 used cash totaling $0.1 million which was from $0.4 million for tax payments from shares withheld upon vesting of restricted stock offset in part by proceeds received from the issuance of common stock of $0.2 million.

Financing activities for the year ended December 31, 2016 used cash totaling $0.3 million which was from $0.9 million for tax payments from shares withheld upon vesting of restricted stock offset in part by proceeds received from the issuance of common stock of $0.5 million.

While we currently have no planned significant capital expenditures for 2019 other than those in the ordinary course of business, we do have contractual commitments for future payments related to office leases.

As discussed in more detail in Note 22. Subsequent Event, we acquired a majority voting interest in Napster on January 18, 2019. We will fully consolidate Napster's financial results with ours beginning with our first quarter of 2019 financial statements. This will result in our consolidated balance sheet reflecting Napster's working capital deficit, which we expect will result in a consolidated working capital deficit. Except as noted in Note 5. Napster Joint Venture, however, RealNetworks has no contractual or implied legal obligation to guarantee or provide other such support related to Napster's third party borrowing or other liabilities.

We believe that our unrestricted current cash, cash equivalents, and short-term investments will be sufficient to meet our anticipated cash needs for working capital and capital expenditures for at least the next 12 months. For Napster to meet its future liquidity needs, however, Napster will need additional financing to fund its operations and growth. RealNetworks has no contractual or implied legal obligation to provide funding or other financial support to Napster. In the future, we may seek to raise additional funds through public or private equity financing, or through other sources such as credit facilities. Such sources of funding may or may not be available to us at commercially reasonable terms. The sale of additional equity securities could result in dilution to our shareholders. In addition, in the future, we may enter into cash or stock acquisition transactions or other strategic transactions that could reduce cash available to fund our operations or result in dilution to shareholders.

Our cash equivalents and short-term investments consist of investment-grade securities, as specified in our investment policy guidelines. The policy limits the amount of credit exposure to any one non-U.S. government or non-U.S. agency issue or issuer to a maximum of 5% of the total portfolio. These securities are subject to interest rate risk and will decrease in value if interest rates increase. Because we have historically had the ability to hold our fixed income investments until maturity, we do not expect our operating results or cash flows to be significantly affected by a sudden change in market interest rates in our securities portfolio.

We conduct our operations primarily in three functional currencies: the U.S. dollar, the euro, and the Chinese yuan. We currently do not actively hedge our foreign currency exposures and are therefore subject to the risk of exchange rate fluctuations. We are exposed to foreign exchange rate fluctuations as the financial results of foreign subsidiaries are translated into U.S. dollars in consolidation. Our exposure to foreign exchange rate fluctuations also arises from intercompany payables and receivables to and from our foreign subsidiaries.

As of December 31, 2018, approximately $16.4 million of the $35.6 million of cash, cash equivalents, and short-term investments are held by our foreign subsidiaries outside the U.S. We have reevaluated our historical assertion that undistributed foreign earnings were indefinitely reinvested and for which deferred taxes were not provided. As a result of the enactment of the Tax Act and as of December 31, 2018, we are no longer indefinitely reinvesting substantially all of the

Company's foreign earnings outside of the U.S. As a result of this change, we have recorded deferred taxes of $1.0 million as of December 31, 2018 to reflect local country foreign withholding taxes associated with a future repatriation of such foreign earnings.

Contractual Obligations

Please refer to Note 18. Commitments and Contingencies, for details on our contractual obligations, which consist of operating leases for office facilities. For income tax liabilities for uncertain tax positions we cannot make a reasonably reliable estimate of the amount and period of any related future payments. As of December 31, 2018 we had $0.4 million of gross unrecognized tax benefits for uncertain tax positions.

Off-Balance Sheet Arrangements

We have operating lease obligations for office facility leases with future cash commitments that are not currently required under GAAP to be recorded on our consolidated balance sheet. Accordingly, these operating lease obligations constitute off-balance sheet arrangements. See Note 2. Recent Accounting Pronouncements for details on the new accounting guidance that beginning for our first quarter of 2019, will require us to record right of use assets and related liabilities for our operating lease obligations. In addition, since we do not maintain accruals associated with certain guarantees, as discussed in Note 19. Guarantees, those guarantee obligations also constitute off-balance sheet arrangements.

Critical Accounting Policies and Estimates

The preparation of our financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reported period. Our critical accounting policies and estimates are as follows:

- Revenue recognition;
- Estimating losses on excess office facilities;
- Valuation of equity method investments;
- Valuation of definite-lived assets and goodwill; and
- Accounting for income taxes.

Revenue Recognition. We recognize revenue from contracts with customers as control of the promised good or service is transferred. Please refer to Note 3. Revenue Recognition for further details regarding our recognition policies.

Estimating losses on excess office facilities. We make significant estimates in determining the appropriate amount of accrued loss on excess office facilities, including estimates of sublease income expected to be received. If we make different estimates, our loss on excess office facilities could be significantly different from that recorded, which could have a material impact on our operating results.

Valuation of Equity Method Investments. We use the equity method of accounting for investments in circumstances where we have the ability to exert significant influence, but not control, over an investee or joint venture. We record our percentage interest in the investee's recorded income or loss and changes in the investee's capital under this method, which will increase or decrease the reported value of our investment. See Note 5. Napster Joint Venture, and Note 22. Subsequent Event to the consolidated financial statements included in Item 8 of Part II of this 10-K, for additional information. We initially record our investment based on a fair value analysis of the investment.

We evaluate impairment of an investment valued under the equity method if events and circumstances warrant. An impairment charge would be recorded if a decline in value of an equity investment below its carrying amount were determined to be other than temporary. In determining if a decline is other than temporary, we consider factors such as the length of time and extent to which the fair value of the investment has been less than the carrying amount of the investee or joint venture, the near-term and longer-term operating and financial prospects of the investee or joint venture and our intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery.

Valuation of Definite-Lived Assets and Goodwill. Definite-lived assets consist primarily of property, plant and equipment, as well as amortizable intangible assets acquired in business combinations. Definite-lived assets are amortized on a straight line basis over their estimated useful lives. We review definite-lived assets for impairment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. Recoverability of these assets is measured by comparison of their carrying amount to future undiscounted cash flows the assets are expected to generate. If definite-lived assets are considered to be impaired, the impairment to be recognized equals the amount by which the carrying value of the assets exceeds their fair value.

We test goodwill for impairment on an annual basis, in our fourth quarter, or more frequently if circumstances indicate reporting unit carrying values may exceed their fair values. As part of this test, we first perform a qualitative assessment to determine if the fair value of a reporting unit is more likely than not less than the reporting unit's carrying amount including goodwill. If this assessment indicates it is more likely than not, we then compare the carrying value of the reporting unit to the estimated fair value of the reporting unit. If the carrying value of the reporting unit exceeds the estimated fair value, we then calculate the implied estimated fair value of goodwill for the reporting unit and compare it to the carrying amount of goodwill for the reporting unit. If the carrying amount of goodwill exceeds the implied estimated fair value, an impairment charge to current operations is recorded to reduce the carrying value to implied estimated value.

The impairment analysis of definite-lived assets and goodwill is based upon estimates and assumptions relating to our future revenue, cash flows, operating expenses, costs of capital and capital purchases. These estimates and assumptions are complex and subject to a significant degree of judgment with respect to certain factors including, but not limited to, the cash flows of our long-term operating plans, market and interest rate risk, and risk-commensurate discount rates and cost of capital. Significant or sustained declines in future revenue or cash flows, or adverse changes in our business climate, among other factors, and their resulting impact on the estimates and assumptions relating to the value of our definite-lived and goodwill assets could result in the need to perform an impairment analysis in future periods which could result in a material impairment. While we believe our estimates and assumptions are reasonable, due to their complexity and subjectivity, these estimates and assumptions could vary from period to period. Changes in these estimates and assumptions could materially affect the estimate of future cash flows and related fair values of these assets and result in significant impairments, which could have a material adverse effect on our financial condition or results of operations. For further discussion, please see the risk factor entitled, "Any impairment to our goodwill, and definite-lived assets could result in a material charge to our earnings" under Item 1A Risk Factors.

Accounting for Income Taxes. We use the asset and liability method of accounting for income taxes. Under this method, income tax expense is recognized for the amount of taxes payable or refundable for the current year. In addition, deferred income tax expense and deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial reporting and tax basis of assets and liabilities and for operating losses and tax credit carryforwards. Deferred tax assets and liabilities and operating loss and tax credit carryforwards are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences and operating loss and tax credit carryforwards are expected to be recovered or settled. We must make assumptions, judgments and estimates to determine the current and deferred provision for income taxes, deferred tax assets and liabilities and any valuation allowance to be recorded against deferred tax assets. Our judgments, assumptions, and estimates relative to the current provision for income tax take into account current tax laws, our interpretation of current tax laws and possible outcomes of future audits conducted by foreign and domestic tax authorities. Changes in tax law or our interpretation of tax laws and future tax audits could materially impact the amounts provided for income taxes in our consolidated financial statements.

Each reporting period we must periodically assess the likelihood that our deferred tax assets will be recovered from future sources of taxable income, and to the extent that recovery is not more likely than not, a valuation allowance must be established. The establishment of a valuation allowance and increases to such an allowance result in either increases to income tax expense or reduction of income tax benefit in the statement of operations and comprehensive income. In certain instances, changes in the valuation allowance may be allocated directly to the related components of shareholders' equity on the consolidated balance sheet. Factors we consider in making such an assessment include, but are not limited to, past performance and our expectation of future taxable income, macroeconomic conditions and issues facing our industry, existing contracts, our ability to project future results and any appreciation of our investments and other assets.

As of December 31, 2018, approximately $16.4 million of the $35.6 million of cash, cash equivalents, and short-term investments are held by our foreign subsidiaries outside the U.S. We have reevaluated our historical assertion that undistributed foreign earnings were indefinitely reinvested and for which deferred taxes were not provided. As a result of the enactment of the Tax Act and as of December 31, 2018, we are no longer indefinitely reinvesting substantially all of the Company's foreign earnings outside of the U.S. As a result of this change, we have recorded deferred taxes of $1.0 million as of December 31, 2018 to reflect local country foreign withholding taxes associated with a future repatriation of such foreign earnings.

Recently Issued Accounting Standards

See Note 2. Recent Accounting Pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

The following discussion about our market risk involves forward-looking statements. All statements that do not relate to matters of historical fact should be considered forward-looking statements. Actual results could differ materially from those projected in any forward-looking statements.

Interest Rate Risk. Our exposure to interest rate risk from changes in market interest rates relates primarily to our short-term investment portfolio. Our short-term investments consist of investment grade debt securities as specified in our investment policy. Investments in both fixed and floating rate instruments carry a degree of interest rate risk. The fair value of fixed rate securities may be adversely impacted due to a rise in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Additionally, a declining rate environment creates reinvestment risk because as securities mature the proceeds are reinvested at a lower rate, generating less interest income. See Note 6. Fair Value Measurements for additional information. Due in part to these factors, our future interest income may be adversely impacted due to changes in interest rates. In addition, we may incur losses in principal if we are forced to sell securities that have declined in market value due to changes in interest rates. Because we have historically had the ability to hold our short-term investments until maturity, we would not expect our operating results or cash flows to be significantly impacted by a sudden change in market interest rates. There have been no material changes in our investment methodology regarding our cash equivalents and short-term investments during the quarter ended December 31, 2018. Based on our cash, cash equivalents, short-term investments, and restricted cash equivalents as of December 31, 2018, a hypothetical 10% increase/decrease in interest rates would not increase/decrease our annual interest income or cash flows by more than a nominal amount.

Investment Risk. As of December 31, 2018, we had an investment in voting capital stock of a privately held technology company for business and strategic purposes. See Note 1. Description of Business and Summary of Significant Accounting Policies - Equity Method Investments, and Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies and Estimates (Valuation of equity method investments) in this 10-K for details on our accounting treatment for this investment, including the analysis of other-than-temporary impairments.

Foreign Currency Risk. We conduct business internationally in several currencies and thus are exposed to adverse movements in foreign currency exchange rates.

Our exposure to foreign exchange rate fluctuations arise in part from: (1) translation of the financial results of foreign subsidiaries into U.S. dollars in consolidation; (2) the remeasurement of non-functional currency assets, liabilities and intercompany balances into U.S. dollars for financial reporting purposes; and (3) non-U.S. dollar denominated sales to foreign customers and expenses incurred in currencies other than the U.S.

Our foreign currency risk management program reduces, but does not entirely eliminate, the impact of currency exchange rate movements.

We have cash balances denominated in foreign currencies which are subject to foreign currency fluctuation risk. The majority of our foreign currency denominated cash is held in euros, Chinese yuan, and Japanese yen. A hypothetical 10% increase or decrease in those currencies relative to the U.S. dollar as of December 31, 2018 would not result in a material impact on our financial position, results of operations or cash flows.

Item 8. Financial Statements and Supplementary Data
REALNETWORKS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

	December 31, 2018	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 35,561	$ 51,196
Short-term investments	24	8,779
Trade accounts receivable, net of allowances	11,751	12,689
Deferred costs, current portion	331	426
Prepaid expenses and other current assets	5,911	3,715
Current assets of discontinued operations	—	17,456
Total current assets	53,578	94,261
Equipment and software	37,458	46,417
Leasehold improvements	3,292	3,536
Total equipment, software, and leasehold improvements	40,750	49,953
Less accumulated depreciation and amortization	37,996	46,093
Net equipment, software, and leasehold improvements	2,754	3,860
Restricted cash equivalents and investments	1,630	2,400
Other assets	3,997	5,588
Deferred costs, non-current portion	528	955
Deferred tax assets, net	851	1,047
Other intangible assets, net	26	325
Goodwill	16,955	13,060
Total assets	$ 80,319	$ 121,496
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,910	$ 3,785
Accrued and other current liabilities	11,312	12,365
Commitment to Napster	2,750	2,750
Deferred revenue, current portion	2,125	3,097
Current liabilities of discontinued operations	—	17,107
Total current liabilities	20,097	39,104
Deferred revenue, non-current portion	268	443
Deferred rent	986	982
Deferred tax liabilities	1,168	19
Other long-term liabilities	960	1,775
Total liabilities	23,479	42,323
Commitments and contingencies		
Shareholders' equity:		
Preferred stock, $0.001 par value, no shares issued and outstanding:		
Series A: authorized 200 shares	—	—
Undesignated series: authorized 59,800 shares	—	—
Common stock, $0.001 par value authorized 250,000 shares; issued and outstanding 37,728 shares in 2018 and 37,341 shares in 2017	37	37
Additional paid-in capital	641,930	638,727
Accumulated other comprehensive loss	(61,118)	(59,547)

Retained deficit	(524,009)	(500,044)
Total shareholders' equity	56,840	79,173
Total liabilities and shareholders' equity	$ 80,319	$ 121,496

See accompanying notes to consolidated financial statements.

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REALNETWORKS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)
(In thousands, except per share data)

	Years Ended December 31,		
	2018	2017	2016
Net revenue (A)	$69,510	$78,718	$81,479
Cost of revenue (B)	17,727	23,164	27,548
Gross profit	51,783	55,554	53,931
Operating expenses:			
Research and development	30,789	29,710	29,923
Sales and marketing	21,140	22,953	31,608
General and administrative	20,706	20,996	27,415
Restructuring and other charges	1,873	2,526	1,489
Lease exit and related charges	(454)	—	2,239
Total operating expenses	74,054	76,185	92,674
Operating income (loss) from continuing operations	(22,271)	(20,631)	(38,743)
Other income (expenses):			
Interest income, net	344	436	449
Gain (loss) on sale of equity and other investments, net	—	4,500	8,473
Equity in net loss of Napster investment	(757)	(3,991)	(6,533)
Other income (expense), net	(103)	(506)	(643)
Total other income (expenses), net	(516)	439	1,746
Income (loss) from continuing operations before income taxes	(22,787)	(20,192)	(36,997)
Income tax expense (benefit)	2,202	(2,778)	776
Net income (loss) from continuing operations	(24,989)	(17,414)	(37,773)
Net income (loss) from discontinued operations, net of tax	—	1,109	1,223
Net income (loss)	$(24,989)	$(16,305)	$(36,550)
Net income (loss) per share - Basic:			
Continuing operations	(0.66)	(0.47)	(1.02)
Discontinued operations	—	0.03	0.03
Net income (loss) per share - Basic	$(0.66)	$(0.44)	$(0.99)
Net income (loss) per share - Diluted:			
Continuing operations	(0.66)	(0.47)	(1.02)
Discontinued operations	—	0.03	0.03
Net income (loss) per share - Diluted	$(0.66)	$(0.44)	$(0.99)
Shares used to compute basic net income (loss) per share	37,582	37,163	36,781
Shares used to compute diluted net income (loss) per share	37,582	37,163	36,781
Comprehensive income (loss):			
Unrealized investment holding gains (losses), net of reclassification adjustments	$17	$8	$(1,303)
Foreign currency translation adjustments, net of reclassification adjustments	(1,588)	2,090	(862)
Total other comprehensive income (loss)	(1,571)	2,098	(2,165)
Net income (loss)	(24,989)	(16,305)	(36,550)
Comprehensive income (loss)	$(26,560)	$(14,207)	$(38,715)
(A) Components of net revenue:			
License and product revenue	$22,602	$28,919	$27,846
Service revenue	46,908	49,799	53,633
	$69,510	$78,718	$81,479
(B) Components of cost of revenue:			
License and product revenue	$6,109	$6,663	$6,062
Service revenue	11,618	16,501	21,486

	$17,727	$23,164	$27,548

See accompanying notes to consolidated financial statements.

REALNETWORKS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Years Ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income (loss)	$(24,989)	$(16,305)	$(36,550)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	2,135	2,936	7,057
Stock-based compensation	2,508	3,675	5,424
Equity in net loss of Napster	757	3,991	6,533
Lease exit and related charges	(454)	—	2,239
Deferred income taxes, net	1,170	(3,871)	130
Loss (gain) on investments, net	—	(4,500)	(8,473)
Realized translation loss (gain)	—	—	272
Fair value of warrants granted in 2015 and 2017, net of subsequent mark to market adjustments in 2018, 2017 and 2016	124	(216)	280
Net change in certain operating assets and liabilities:			
Trade accounts receivable	17,971	(5,845)	(129)
Deferred costs, prepaid expenses and other assets	(377)	2,146	964
Accounts payable	(15,125)	(599)	1,571
Accrued and other liabilities	(2,941)	(2,762)	(3,646)
Net cash provided by (used in) operating activities	(19,221)	(21,350)	(24,328)
Cash flows from investing activities:			
Purchases of equipment, software, and leasehold improvements	(765)	(734)	(2,438)
Proceeds from sale of equity and other investments	—	—	4,967
Purchases of short-term investments	—	(13,905)	(75,766)
Proceeds from sales and maturities of short-term investments	8,755	48,457	84,249
Acquisitions, net of cash acquired	(4,192)	—	(150)
Advance to Napster	—	(1,500)	(3,500)
Proceeds from the sale of Slingo and social casino business	—	4,500	4,000
Net cash provided by (used in) investing activities	3,798	36,818	11,362
Cash flows from financing activities:			
Proceeds from issuance of common stock (stock options and stock purchase plan)	199	239	535
Tax payments from shares withheld upon vesting of restricted stock	(261)	(356)	(880)
Net cash provided by (used in) financing activities	(62)	(117)	(345)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(920)	1,824	(473)
Net increase (decrease) in cash, cash equivalents and restricted cash	(16,405)	17,175	(13,784)
Cash, cash equivalents, and restricted cash, beginning of year	53,596	36,421	50,205
Cash, cash equivalents, and restricted cash, end of year	$37,191	$53,596	$36,421

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REALNETWORKS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS - Continued
(In thousands)

Supplemental disclosure of cash flow information:			
Cash received from income tax refunds	$308	$420	$534
Cash paid for income taxes	$1,198	$1,244	$2,072
Non-cash investing activities:			
Increase (decrease) in accrued purchases of equipment, software, and leasehold improvements	$10	$(86)	$26

See accompanying notes to consolidated financial statements.

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REALNETWORKS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(In thousands)

	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Deficit)	Total Shareholders' Equity
Balances, December 31, 2015	36,298	$ 36	$ 627,316	$ (59,480)	$ (447,189)	$ 120,683
Common stock issued for exercise of stock options, employee stock purchase plan, and vesting of restricted shares, net of tax payments from shares withheld upon vesting of restricted stock	1,203	1	(345)	—	—	(344)
Share of Napster equity transactions	—	—	1,533	—	—	1,533
Stock-based compensation	—	—	5,424	—	—	5,424
Other comprehensive income (loss)	—	—	—	(2,165)	—	(2,165)
Net income (loss)	—	—	—	—	(36,550)	(36,550)
Balances, December 31, 2016	37,501	$ 37	$ 633,928	$ (61,645)	$ (483,739)	$ 88,581
Common stock issued for exercise of stock options, employee stock purchase plan, and vesting of restricted shares, net of tax payments from shares withheld upon vesting of restricted stock	(160)	—	(117)	—	—	(117)
Share of Napster equity transactions	—	—	1,241	—	—	1,241
Stock-based compensation	—	—	3,675	—	—	3,675
Other comprehensive income (loss)	—	—	—	2,098	—	2,098
Net income (loss)	—	—	—	—	(16,305)	(16,305)
Balances, December 31, 2017	37,341	$ 37	$ 638,727	$ (59,547)	$ (500,044)	$ 79,173
Cumulative effect of revenue recognition accounting change	—	—	—	—	1,024	1,024
Common stock issued for exercise of stock options, employee stock purchase plan, and vesting of restricted shares, net of tax payments from shares withheld upon vesting of restricted stock	387	—	(62)	—	—	(62)
Share of Napster equity transactions	—	—	757	—	—	757
Stock-based compensation	—	—	2,508	—	—	2,508
Other comprehensive income (loss)	—	—	—	(1,571)	—	(1,571)
Net income (loss)	—	—	—	—	(24,989)	(24,989)
Balances, December 31, 2018	37,728	$ 37	$ 641,930	$ (61,118)	$ (524,009)	$ 56,840

See accompanying notes to consolidated financial statements.

REALNETWORKS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Years ended December 31, 2018, 2017 and 2016

Note 1. Description of Business and Summary of Significant Accounting Policies

Description of Business. RealNetworks, Inc. and subsidiaries is a leading global provider of network-delivered digital media applications and services that make it easy to manage, play and share digital media. The Company also develops and markets software products and services that enable the creation, distribution and consumption of digital media, including audio and video.

Inherent in our business are various risks and uncertainties, including a limited history of certain of our product and service offerings. RealNetworks' success will depend on the acceptance of our technology, products and services and the ability to generate related revenue.

In this Annual Report on Form 10-K for the year ended December 31, 2018 (10-K), RealNetworks, Inc. and subsidiaries is referred to as “RealNetworks”, the “Company”, “we”, “us”, or “our”.

Basis of Presentation. The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. Intercompany balances and transactions have been eliminated in consolidation.

The consolidated financial statements reflect all adjustments that, in the opinion of management, are necessary for a fair presentation of the results of operations for the periods presented. Operating results for the year ended December 31, 2018 are not necessarily indicative of the results that may be expected for any subsequent periods.

See Note 17. Discontinued Operations for further information regarding the expiration of our contract with LOEN Entertainment, Co, LTD (LOEN) in 2017 and the reporting of this business as a discontinued operation. Unless otherwise noted, amounts and percentages for all periods discussed below reflect the results of operations and financial condition of our continuing operations.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the U.S. (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents and Short-Term Investments. We consider all short-term investments with a remaining contractual maturity at date of purchase of three months or less to be cash equivalents.

Other short-term investments with remaining contractual maturities of five years or less are classified as short-term because the investments are marketable and highly liquid, and we have the ability to utilize them for current operations. Realized gains and losses and any declines in value judged to be other-than-temporary on short-term investments are included in other income (expense), net. Realized and unrealized gains and losses on short-term investments are determined using the specific identification method.

Trade Accounts Receivable. Trade accounts receivable consist of amounts due from customers and do not bear interest. The allowance for doubtful accounts and sales returns is our estimate of the amount of probable credit losses and returns in our existing accounts receivable. We determine the allowances based on analysis of historical bad debts, customer concentrations, customer credit-worthiness, return history and current economic trends. We review the allowances for doubtful accounts and sales returns quarterly. Past due balances over 90 days and specified other balances are reviewed individually for collectability. All other balances are reviewed on an aggregate basis. Account balances are written off against the allowance after all reasonable means of collection have been exhausted and the potential for recovery is considered remote. We do not have any off-balance sheet credit exposure related to our customers.

Concentration of Credit Risk. Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents, short-term investments, and accounts receivable. Short-term investments consist of U.S. government and government agency securities, corporate notes and bonds, and municipal securities. We derive a portion of our revenue from a large number of individual consumers spread globally. We also derive revenue from several large customers. If the financial condition or results of operations of any one of the large customers deteriorates substantially, our operating results could be adversely affected. To reduce credit risk, management performs ongoing credit evaluations of the financial condition of significant customers. We do not generally require collateral and we maintain an allowance for estimated credit losses on customer accounts when considered necessary.

Depreciation and Amortization. Depreciation of equipment and software, as well as amortization of leasehold improvements is computed using the straight-line method over the lesser of the estimated useful lives of the assets or the related lease term. The useful life of equipment and software is generally three to five years.

Depreciation and amortization expense of these assets during the years ended December 31, 2018, 2017, and 2016 was $1.7 million, $2.3 million and $6.0 million, respectively.

Equity Method Investment. We use the equity method in circumstances where we have the ability to exert significant influence, but not control, over an investee or joint venture. We initially record our investment based on a fair value analysis of the investment. We record our percentage interest in the investee's recorded income or loss and changes in the investee's capital under this method, which will increase or decrease the reported value of our investment. See Note 5. Napster Joint Venture and Note 22. Subsequent Event for additional information.

We evaluate impairment of an investment accounted for under the equity method if events and circumstances warrant. An impairment charge would be recorded if a decline in the fair value of an equity investment below its carrying amount were determined to be other than temporary. In determining if a decline is other than temporary, we consider factors such as the length of time and extent to which the fair value of the investment has been less than the carrying amount of the investee or joint venture, the near-term and longer-term operating and financial prospects of the investee or joint venture and our intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery.

Deferred Costs. We defer certain costs on projects for service revenues and system sales. Deferred costs consist primarily of direct and incremental costs to customize and install systems, as defined in individual customer contracts, including costs to acquire hardware and software from third parties and payroll and related costs for employees and other third parties. Deferred costs are capitalized during the implementation period.

We recognize such costs as a component of cost of revenue, the timing of which is dependent upon the revenue recognition policy by contract. At each balance sheet date, we review deferred costs to ensure they are ultimately recoverable. Any anticipated losses on uncompleted contracts are recognized when evidence indicates the estimated total cost of a contract exceeds its estimated total revenue or if actual deferred costs exceed estimated contractual revenue. Assessing the recoverability of deferred costs is based on significant assumptions and estimates, including future revenue and cost of sales. Significant or sustained decreases in revenue or increases in cost of sales in future periods could result in impairments of deferred project costs and prepaid royalty advances. We cannot accurately predict the amount and timing of any such impairments. Should deferred project costs or prepaid royalty advances become impaired, we would record the appropriate charge, which could have a material adverse effect on our financial condition and results of operations.

Definite-Lived Tangible and Intangible Assets. Definite-lived tangible assets include equipment, software and leasehold improvements and are carried at cost less accumulated depreciation and amortization. Definite-lived intangible assets consist primarily of the fair value of customer agreements and contracts, and developed technology acquired in business combinations and are amortized over their estimated useful lives.

We review these assets for impairment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. If the carrying amount of an asset group is not recoverable, an impairment loss is recognized if the carrying amount of the asset group exceeds its estimated fair value, which is generally determined as the present value of estimated future cash flows to a market participant. Our impairment analysis is based on significant assumptions of future results, including operating and cash flow projections. Significant or sustained declines in future revenue or cash flows, or adverse changes in our business climate, among other factors, could result in the need to record an impairment charge in future periods.

Goodwill. We test goodwill for impairment on an annual basis, in our fourth quarter, or more frequently if circumstances indicate reporting unit carrying values may exceed their fair values. Circumstances that may indicate a reporting unit's carrying value exceeds its fair value include, but are not limited to: poor economic performance relative to historical or projected future operating results; significant negative industry, economic or company specific trends; changes in the manner of our use of the assets or the plans for our business; and loss of key personnel.

When evaluating goodwill for impairment, based upon our annual test or due to changes in circumstances described above, we first perform a qualitative assessment to determine if the fair value of a reporting unit is more likely than not less than the reporting unit's carrying amount including goodwill. If this assessment indicates it is more likely than not, we then compare the carrying value of the reporting unit to the estimated fair value of the reporting unit. If the carrying value of the reporting unit exceeds the estimated fair value, we then calculate the implied estimated fair value of goodwill for the reporting unit and compare it to the carrying amount of goodwill for the reporting unit. If the carrying amount of goodwill exceeds the implied estimated fair value, an impairment charge to current operations is recorded to reduce the carrying value to implied estimated value. Significant judgment is required in determining the reporting units and assessing fair value of the reporting units.

Fair Value. Fair value is the price that would be received from selling an asset or paid in transfering a liability in an orderly transaction between market participants at the measurement date. Our fair value measurements consider the principal or most advantageous market in which we would transact and the market-based risk measurements or assumptions that market participants would use in pricing the asset or liability, such as inherent risk, transfer restrictions and credit risk. Fair values are determined based on three levels of inputs:

- Level 1: Quoted prices in active markets for identical assets or liabilities
- Level 2: Directly or indirectly observed inputs for the asset or liability, including quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active
- Level 3: Significant unobservable inputs that reflect our own estimates of assumptions that market participants would use

Research and Development. Costs incurred in research and development are expensed as incurred. Software development costs are capitalized when a product's technological feasibility has been established through the date the product is available for general release to customers. Other than internal use software, we have not capitalized any software development costs, as technological feasibility is generally not established until a working model is completed, at which time substantially all development is complete.

Revenue Recognition. We recognize revenue from contracts with customers as control of the promised good or service is transferred. Please refer to Note 3. Revenue Recognition for further details regarding our recognition policies.

Advertising Expenses. We expense the cost of advertising and promoting our products as incurred. These costs are included in sales and marketing expense and totaled $4.3 million in 2018, $4.5 million in 2017 and $6.1 million in 2016.

Foreign Currency. The functional currency of the Company's foreign subsidiaries is generally the currency of the country in which the subsidiary operates. Assets and liabilities of foreign operations are translated into U.S. dollars using rates of exchange in effect at the end of the reporting period. The net gain or loss resulting from translation is shown as translation adjustment and included in Accumulated Other Comprehensive Income (AOCI) in shareholders' equity. Income and expense accounts are translated into U.S. dollars using average rates of exchange. Gains and losses from foreign currency transactions are included in the consolidated statements of operations.

Accounting for Taxes Collected from Customers. Our revenues are reported net of sales and other transaction taxes that are collected from customers and remitted to taxing authorities.

Income Taxes. We compute income taxes using the asset and liability method, under which deferred income taxes are provided for temporary differences between financial reporting basis and tax basis of our assets and liabilities and operating loss and tax credit carryforwards. We record a valuation allowance when it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of the deferred tax assets depends on the ability to generate sufficient taxable income of the appropriate character in the appropriate taxing jurisdictions. Adjustments to the valuation allowance could be required in the future if we estimate that the amount of deferred tax assets to be realized is more or less than the net amount we have recorded. Any increase or decrease in the valuation allowance could have the effect of increasing or decreasing the income tax provision in the statement of operations. Deferred tax assets and liabilities and operating loss and tax credit carryforwards are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences and operating loss and tax credit carryforwards are expected to be recovered or settled.

We file numerous consolidated and separate income tax returns in the U.S. including federal, state and local, as well as foreign jurisdictions. With few exceptions, we are no longer subject to U.S. federal income tax examinations for tax years before 2013 or state, local, or foreign income tax examinations for years before 1993. We are currently under audit by various states and foreign jurisdictions for certain tax years subsequent to 1993.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. We recognize accrued interest and penalties related to uncertain tax positions as a component of income tax expense.

Stock-Based Compensation. Stock-based compensation cost is measured at the grant date based on the fair value of the award and is recognized as expense over the requisite service period, which is the vesting period. We use the Black-Scholes option-pricing model or other appropriate valuation models such as Monte Carlo simulation to determine the fair value of stock-based option awards. The fair value of restricted stock awards is based on the closing market price of our common stock on the grant date of the award. Generally, we recognize the compensation cost for awards on a straight-line basis for the entire award, over the applicable vesting period. For performance-based awards, expense is recognized when it is probable the performance goal will be achieved, however if the likelihood becomes improbable, that expense is reversed. For market-based stock options, fair value is measured at the grant date using the Monte Carlo simulation model and we recognize compensation cost for these awards on a straight-line basis over the requisite service period for each separately vesting portion of the awards. For our employee stock purchase plan, compensation expense is measured based on the discount the employee is entitled to upon purchase.

The valuation models for stock-based option awards require various judgmental assumptions including volatility in our common stock price and expected option life. If any of the assumptions used in the valuation models change significantly, stock-based compensation expense for new awards may differ materially in the future from the amounts recorded in the consolidated statements of operations. For all awards, we also estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates.

Net Income Per Share. Basic net income (loss) per share (EPS) is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted EPS is computed by dividing net income (loss) by the weighted average number of common and dilutive potential common shares outstanding during the period.

Note 2. Recent Accounting Pronouncements

Recently adopted accounting pronouncements

In May 2014, and subsequently updated and amended in 2015 and 2016, the Financial Accounting Standards Board (FASB) issued new revenue recognition guidance (Topic 606), which replaced most existing revenue recognition guidance in U.S. GAAP. The guidance requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. We adopted Topic 606 as of January 1, 2018 using the modified retrospective transition method. Refer to Note 3. Revenue Recognition for further details.

In November 2016, the FASB issued guidance on the classification and presentation of changes in restricted cash on the statement of cash flows. We adopted this guidance on January 1, 2018, and retroactively applied the changes to the Statement of Cash Flows for all periods presented. As a result, we no longer classify changes in restricted cash within the investing section of our Statement of Cash flows, and instead include restricted cash with unrestricted cash as a combined total. The impact of the adoption did not have a material impact on the Consolidated Financial Statements.

Recently issued accounting pronouncements not yet adopted

In February 2016, the FASB issued new guidance related to the accounting for leases. A major change in the new guidance is that lessees will be required to present right-of-use assets and lease liabilities on the balance sheet. Enhanced disclosures will also be required to give financial statement users the ability to assess the amount, timing and uncertainty of cash flows arising from leases. The new guidance is effective for us on January 1, 2019, including interim periods within 2019. In July 2018 the FASB issued an alternative method that permits application of the new guidance at the beginning of the year of adoption. This is in addition to the method of applying the new guidance retrospectively to each prior reporting period presented. We have elected to apply the new guidance at the beginning of 2019 and not retrospectively. We are finalizing our assessment of the impacts resulting from the new standard, including the impact on our internal controls. As a result of our evaluation, we have modified certain accounting policies and practices and updated certain existing controls. Adoption of the standard is expected to result in the recognition of material additional right-of-use assets and related lease liabilities for our operating leases. The new guidance is not expected to have a material impact on our consolidated statement of operations.

In January 2017, the FASB issued new guidance simplifying the test for goodwill impairment. The new guidance eliminates Step 2 from the goodwill impairment test, instead requiring an entity to recognize a goodwill impairment charge for the amount by which the reporting unit's carrying amount exceeds the reporting unit's fair value. This guidance is effective for interim and annual goodwill impairment tests beginning on December 15, 2019, with early adoption permitted. We will be evaluating the impact of the guidance, but do not currently expect the adoption to have a material impact on our consolidated financial statements and related disclosures.

In June 2018, the FASB issued new guidance related to the measurement and classification for share-based awards to non-employees. The new guidance essentially aligns the measurement and classification for these awards with that for share-based awards to employees. The new guidance will be effective for us on January 1, 2019, including interim periods within 2019. We do not currently expect the adoption to have a material impact on our consolidated financial statements and related disclosures.

Note 3. Revenue Recognition

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Adoption of New Revenue Standard

On January 1, 2018 we adopted the new revenue recognition standard by applying the modified retrospective approach to those contracts which were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under the new revenue recognition standard, while prior period amounts are not adjusted and continue to be reported under the accounting standards in effect for the prior periods. Consistent with the modified retrospective approach under Topic 606, we also now report the components of net revenue and cost of revenue on the Consolidated Statement of Operations for reporting periods after January 1, 2018 with the same approach related to our disaggregation of revenue by source disclosure.

We recorded a net decrease to opening retained deficit of $1.0 million as of January 1, 2018 due to the cumulative impact of adopting the new revenue recognition standard, with the impact primarily related to licensing of our RealPlayer product and full recognition of non-recurring engineering fees which were previously deferred and amortized over the life of the contract. The net impact to revenues as a result of adopting the new standard was an increase of $1.6 million for the year ended December 31, 2018.

Performance Obligations

We generate all of our revenue through contracts with customers. Revenue is either recognized over time as the service is provided, or at a point in time when the product is transferred to the customer, depending on the contract type. Our performance obligations typically have an original duration of one year or less.

Our software licensing revenue stream generates revenue through the on-premises licensing of our codec technologies and integrated RealTimes platform. We recognize revenue upfront at the point in time when the software is made available to the customer. In cases where a sale or usage-based royalty is promised in exchange for a license of our codec technologies, revenue is recognized as the subsequent usage occurs for the contractual amount owed by the customer for that usage, as is allowed under the licensing of intellectual property section of Topic 606. Software licensing in our Mobile Services segment is invoiced on a monthly basis either based on usage of the respective product, or on a fixed fee basis. Our Consumer Media licensing is invoiced either quarterly or annually based on the usage of the respective product, or on a fixed fee basis. For each of these, the timing of payment generally does not vary significantly from the timing of invoice, however, certain of our long-term Consumer Media licensing contracts have extended payment schedules which may exceed one year.

Our subscription services revenue stream allows customers to use hosted software over the respective contract period without taking possession of the technology. The stream is primarily comprised of our intercarrier messaging service, ringback tones, PC-based and mobile games subscriptions and our RealPlayer and SuperPass services. Revenues related to subscription service products are recognized ratably over the contract period, or as we have the right to invoice as a practical expedient when that amount corresponds directly with the value to the customer of our performance completed to date. Consumer subscription products are paid in advance, typically on a monthly or quarterly basis. Subscription services offered to businesses are invoiced on a monthly basis, generally based upon the amount of usage for the previous month, and the timing of payment generally does not vary significantly from the timing of invoice.

Our product sales revenue stream includes purchases of mobile and wholesale games, as well as our RealPlayer product. Retail purchases are recognized and paid for at the point in time the product is made available to the end user. For games which are sold through third-party application storefronts, we evaluate the transaction for gross or net revenue recognition. As we typically are the primary obligor in our third-party transactions, we recognize revenues gross of any app store fees. We then receive monthly payments from the respective app store for all purchases within the respective month.

Other revenues consist primarily of advertising and the distribution of third-party products, which are recognized and paid on a cost per impression or cost per download basis.

Disaggregation of Revenue

The following table presents our disaggregated revenue by source and segment (in thousands):

Year ended December 31, 2018		
Consumer Media	Mobile Services	Games

Business Line			
Software License	$9,940	$2,838	$—
Subscription Services	4,895	26,832	11,141
Product Sales	1,177	—	8,647
Advertising and Other	2,156	—	1,884
Total	$18,168	$29,670	$21,672

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The following table presents our disaggregated revenue by sales channel (in thousands):

	Year ended December 31, 2018		
	Consumer Media	Mobile Services	Games
Sales Channel			
Business to Business	$12,096	$29,081	$3,225
Direct to Consumer	6,072	589	18,447
Total	$18,168	$29,670	$21,672

Contract Balances

The timing of revenue recognition may differ from the timing of invoicing to our customers. We record accounts receivable when the right to consideration becomes unconditional, except for the passage of time. For certain contracts, payment schedules may exceed one year; for those contracts we recognize a long-term receivable. As of December 31, 2018 our balance of long-term accounts receivable was $0.7 million, and is included in other long-term assets on our consolidated balance sheets. During the year ended December 31, 2018, we recorded no impairments to our contract assets.

We record deferred revenue when cash payments are received or due in advance of our completion of the underlying performance obligation. As of December 31, 2018 we had a deferred revenue balance of $2.4 million, a decrease of $1.1 million from December 31, 2017. The decrease is due primarily to our transition to Topic 606, with $0.8 million recorded to retained earnings on January 1, 2018.

Significant Estimates

For certain of our contracts, we recognize revenues using the sales- and usage-based exception as defined in the licensing guidance of Topic 606. For these contracts, we typically receive reporting of actual usage a quarter in arrears, and as such, we are required to estimate the current quarter's usage. To make these estimates, we utilize historical reporting information, as well as industry trends and interim reporting to quantify total quarterly usage. As actual usage information is received, we record a true-up in the following quarter to reflect any variance from our estimate. In the year ended December 31, 2018, we did not record any material true-ups to our consolidated financial statements.

Practical Expedients

For those contracts for which we recognize revenue at the amount to which we have the right to invoice for service performed, we do not disclose the value of any unsatisfied performance obligations. We also do not disclose the remaining unsatisfied performance obligations which have an original duration of one year or less. Additionally, we immediately expense sales commissions when incurred as the amortization period would have been less than one year. These costs are recorded within sales and marketing expense.

Note 4. Acquisitions and Disposals

As described in our 2016 10-K, on July 24, 2015, we entered into an agreement to sell the Slingo and social casino portion of our games business to Gaming Realms plc. Of the total transaction price of $18.0 million, $10.0 million was paid in cash at closing on August 10, 2015, $4.0 million was paid in cash in August 2016, and the remaining $4.0 million was paid in cash in December 2017, along with an additional $0.5 million payment related to an agreed-to extension of this final payment, which was originally due in August 2017. We recognized the gain related to both the 2016 and 2017 payments in Gain (loss) on sale of equity and other investments, net, on the statement of operations in 2016 and 2017.

On April 16, 2018 in order to acquire a full workforce, we purchased 100% of the shares of a small, privately-held Netherlands-based game development studio for net cash consideration of $4.2 million. All tangible and intangible assets and liabilities recognized are reported within the Games segment. As a result of our purchase price allocation, we recorded $0.1 million of identifiable intangible assets relating to an existing customer contract. We also recorded goodwill of $4.4 million, representing the intangible assets that do not qualify for separate recognition for accounting purposes, primarily related to the assembled workforce and expected synergies in development of our Original Stories titles. The goodwill is not deductible for income tax purposes. We did not recognize significant revenue or loss before income taxes from this acquired business from the date of acquisition through December 31, 2018.

Note 5. Napster Joint Venture

As of December 31, 2018 we owned approximately 42% of the issued and outstanding stock of Rhapsody International, Inc., doing business as Napster, and account for our investment using the equity method of accounting. Rhapsody America LLC was initially formed in 2007 as a joint venture between RealNetworks and MTV Networks, a division of Viacom International Inc. (MTVN), to own and operate a business-to-consumer digital audio music service originally branded as Rhapsody. The service was re-branded in 2016 as Napster. In this Note, we refer to the business as Napster, although the legal entity in which we hold our investment is Rhapsody International, Inc.

Following certain restructuring transactions effective March 31, 2010, we began accounting for our investment using the equity method of accounting. As part of the 2010 restructuring transactions, RealNetworks contributed $18.0 million in cash, the Rhapsody brand and certain other assets, including content licenses, in exchange for shares of convertible preferred stock of Rhapsody International, Inc., carrying a $10.0 million preference upon certain liquidation events.

We recorded our share of losses of the Napster business of $0.8 million, $4.0 million, and $6.5 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Because of the $10.0 million liquidation preference on the preferred stock we hold in Napster, under the equity method of accounting we did not record any share of Napster losses that would reduce the carrying value of our investment, which is impacted by Napster equity transactions, below $10.0 million, until Napster's book value was reduced below $10.0 million, which occurred in the first quarter of 2015. As of December 31, 2018, the carrying value of our Napster equity investment was zero, as we did not have any further commitment to provide future support to Napster, with the exception of the guaranty discussed below. Unless we commit to provide future financial support to Napster, we do not record any further share of Napster losses that would reduce our carrying value of Napster below zero; in accordance with GAAP, we currently track those suspended losses outside of our financial statements.

In December 2016, RealNetworks entered into an agreement to loan up to $5 million to Napster for general operating purposes, as did Napster's other 42% owner. Each entity fully funded its loan, providing $3.5 million each in December 2016 and the remaining $1.5 million each in January 2017. These loans are subordinate to senior creditors, and bear an interest rate of 10% per annum, which is added to the outstanding principal balance. At the time of signing the agreement we recognized previously suspended Napster losses, and, consequently, we did not record a receivable related to this loan.

In November 2017, Napster entered into an amendment to its revolving credit facility. In conjunction with the amendment, both RealNetworks and Napster's other 42% owner entered into an arrangement to guarantee up to $2.75 million each of Napster's outstanding indebtedness on the credit facility. As a result of this guaranty, in December 2017, we recognized previously suspended Napster losses up to the full $2.75 million guaranty in our consolidated statement of operations and as a Commitment to Napster in our consolidated balance sheets. As of the date of this filing, RealNetworks has not been required to pay any amounts under the guaranty, nor did we purchase the other 42% owner's guaranty as a result of acquiring a majority voting interest in Napster, as further described in Note 22. Subsequent Event.

Summarized financial information for Napster, which represents 100% of their financial information, is as follows (in thousands):

	Year ended December 31, 2018	Year ended December 31, 2017	Year ended December 31, 2016
Net revenue	$ 143,844	$ 172,391	$ 208,085
Gross profit	37,093	27,173	38,407
Operating income (loss)	16,137	(8,256)	(12,433)
Net income (loss)	10,327	(13,087)	(14,913)

As of December 31, 2018	As of December 31, 2017

Current assets	$ 44,821	$ 43,028
Non-current assets	17,679	16,874
Current liabilities	111,332	119,826
Non-current liabilities	390	1,231

Note 6. Fair Value Measurements

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Items Measured at Fair Value on a Recurring Basis

The following tables present information about our financial assets that have been measured at fair value on a recurring basis as of December 31, 2018 and 2017, and indicates the fair value hierarchy of the valuation inputs utilized to determine fair value (in thousands).

	Fair Value Measurements as of December 31, 2018				Amortized Cost as of December 31, 2018
	Level 1	Level 2	Level 3	Total	
Cash and cash equivalents:					
Cash	$22,853	$—	$ —	$22,853	$ 22,853
Money market funds	12,708	—	—	12,708	12,708
Total cash and cash equivalents	35,561	—	—	35,561	35,561
Short-term investments:					
Corporate notes and bonds	—	24	—	24	24
Total short-term investments	—	24	—	24	24
Restricted cash equivalents and investments	—	1,630	—	1,630	1,630
Warrants issued by Napster (included in Other assets)	—	—	865	865	—
Total	$35,561	$1,654	$ 865	$38,080	$ 37,215

	Fair Value Measurements as of December 31, 2017				Amortized Cost as of December 31, 2017
	Level 1	Level 2	Level 3	Total	
Cash and cash equivalents:					
Cash	$31,065	$—	$ —	$31,065	$ 31,065
Money market funds	20,131	—	—	20,131	20,131
Total cash and cash equivalents	51,196	—	—	51,196	51,196
Short-term investments:					
Corporate notes and bonds	—	8,779	—	8,779	8,779
Total short-term investments	—	8,779	—	8,779	8,779
Restricted cash equivalents and investments	—	2,400	—	2,400	2,400
Warrant issued by Napster (included in Other assets)	—	—	989	989	—
Total	$51,196	$11,179	$ 989	$63,364	$ 62,375

Restricted cash equivalents and investments as of December 31, 2018 and 2017 relate to cash pledged as collateral against letters of credit in connection with lease agreements.

Realized gains and losses on sales of short-term investment securities for 2018, 2017, and 2016 were not significant. Gross unrealized gains and gross unrealized losses on short-term investment securities as of December 31, 2018 and 2017 were not significant.

In February 2015, Napster issued warrants to purchase Napster common shares to both RealNetworks and Napster's other 42% owner. The warrants were issued as compensation for past services provided by RealNetworks and Napster's other 42% owner, and both warrants covered the same number of underlying shares, with a 10 year contractual term. The exercise price of the warrants was equal to the fair value of the underlying shares on the issuance date, and we used the Black-Scholes option-pricing model to calculate the fair value of the warrant, using an expected term of 5 years and expected volatility of 55%. On the date of issuance, we recognized and recorded the $1.2 million fair value of the warrant issued to RealNetworks within Other assets in the consolidated balance sheets, and as an expense reduction within General and administrative expense in the consolidated statements of operations. The warrants are free-standing derivatives and as such their fair value is determined each quarter using updated inputs in the Black-Scholes option-pricing model. At December 31, 2017, due to the management change and strategic shift undertaken by Napster, we determined that a change to the expected term was necessary. As a result, we extended the expected term by 3.25 years, resulting in a total expected term for the warrant of 8.25 years. During the year ended December 31, 2018 the decrease in the fair value of the warrants was approximately $0.1 million.

In February 2017, Napster issued additional warrants to purchase Napster common shares to both RealNetworks and Napster's other 42% owner. Consistent with the warrants issued in 2015, the 2017 warrants were issued as compensation for past services provided by RealNetworks and Napster's other 42% owner, and both warrants covered the same number of underlying shares, with a 10 year contractual term. The exercise price of the warrants exceeded the fair value of the underlying shares on the issuance date, and we used the Black-Scholes option-pricing model to calculate the fair value of the warrant, using an expected term of 5 years and expected volatility of 55%, resulting in a recognized fair value of $0.5 million in Other assets in the consolidated balance sheets, and as an expense reduction within General and administrative expense in the consolidated statements of operations. At December 31, 2017, due to the management change and strategic shift undertaken by Napster, we determined that a change to the expected term was necessary. As a result, we extended the expected term by 1 year, resulting in a total expected term for the warrant of 6 years. During the year ended December 31, 2018 the decrease in fair value of the warrants was insignificant.

Items Measured at Fair Value on a Non-recurring Basis

Certain of our assets and liabilities are measured at estimated fair value on a non-recurring basis, using Level 3 inputs. These instruments are subject to fair value adjustments only in certain circumstances (for example, when there is evidence of impairment). We did not record any impairments on those assets required to be measured at fair value on a non-recurring basis in 2018, 2017 or 2016.

See Note 12. Lease Exit and Related Charges, for a discussion of the losses related to reductions in the use of RealNetworks' office space, which were recorded at the estimated fair value of remaining lease obligations, less expected sub-lease income.

Note 7. Allowance for Doubtful Accounts Receivable and Sales Returns

Activity in the allowance for doubtful accounts receivable (in thousands):

	Years ended December 31,		
	2018	2017	2016
Balance, beginning of year	$725	$633	$765
Addition (reduction) to allowance	(224)	(14)	36
Amounts written off	—	—	(152)
Effects of foreign currency translation	(26)	106	(16)
Balance, end of year	$475	$725	$633

Activity in the allowance for sales returns (in thousands):

	Years ended December 31,		
	2018	2017	2016
Balance, beginning of year	$212	$169	$158
Addition (reduction) to allowance	(126)	55	15
Amounts written off	—	(11)	(3)
Effects of foreign currency translation	(1)	(1)	(1)
Balance, end of year	$85	$212	$169
Total, Allowance for Doubtful Accounts Receivable and Sales Returns	$560	$937	$802

Three customers individually comprised more than 10% of trade accounts receivable at December 31, 2018, with the customers accounting for 23%, 11% and 10% each. One customer accounted for 20% of our trade accounts receivable as of December 31, 2017.

One customer accounted for 11%, or $7.7 million, of consolidated revenue during the year ended December 31, 2018, in our Mobile Services segment.

One customer accounted for 10%, or $8.0 million, of consolidated revenue during the year ended December 31, 2017, which was reflected in our Mobile Services segment.

One customer accounted for 11%, or $9.1 million, of our consolidated revenue during the year ended December 31, 2016, in our Mobile Services segment.

Note 8. Other Intangible Assets
Other intangible assets (in thousands):

	As of December 31,					
	2018			2017		
	Gross Amount	Accumulated Amortization	Net	Gross Amount	Accumulated Amortization	Net
Amortizing intangible assets:						
Customer relationships	$30,993	$ 30,993	$—	$32,286	$ 31,997	$289
Developed technology	24,446	24,446	—	25,177	25,177	—
Patents, trademarks and tradenames	3,765	3,765	—	3,932	3,896	36
Service contracts	5,538	5,512	26	5,576	5,576	—
Total	$64,742	$ 64,716	$26	$66,971	$ 66,646	$325

In conjunction with our acquisition of a Netherlands-based game development studio in the second quarter of 2018, we recorded $0.1 million in intangibles. Refer to Note 4. Acquisitions and Disposals for further details about the acquisition.

In the third quarter of 2016 we recognized a gain of $2.0 million, net of transaction costs, to Gain (loss) on sale of equity and other investments, net, as the result of a sale of a domain name with no book value to a third party.
Amortization expense related to other intangible assets during the years ended December 31, 2018, 2017, and 2016 was $0.4 million, $0.7 million, and $1.0 million, respectively.
Estimated future amortization of other intangible assets (in thousands):

2019	26
Total	$26

No impairments of other intangible assets were recognized in 2018, 2017 or 2016.
Note 9. Goodwill
Changes in goodwill (in thousands):

	December 31,	
	2018	2017
Balance, beginning of year		
Goodwill	$323,713	$323,510
Accumulated impairment losses	(310,653)	(310,653)
	13,060	12,857
Increases (decreases) due to current year acquisitions (disposals)	4,367	—
Effects of foreign currency translation	(472)	203
	3,895	203
Balance, end of year		
Goodwill	327,608	323,713
Accumulated impairment losses	(310,653)	(310,653)
	$16,955	$13,060

On April 16, 2018 in order to acquire a full workforce, we purchased 100% of the shares of a small, privately-held Netherlands-based game development studio for net cash consideration of $4.2 million. See Note 4. Acquisitions and Disposals, for details on this acquisition.

Goodwill by segment (in thousands):

	December 31,	
	2018	2017
Consumer Media	$580	$580
Mobile Services	2,040	2,182
Games	14,335	10,298
Total goodwill	$16,955	$13,060

No impairments of goodwill were recorded in 2018, 2017, or 2016.

Note 10. Accrued and Other Current Liabilities

Accrued and other current liabilities (in thousands):

	December 31, 2018	December 31, 2017
Royalties and other fulfillment costs	$ 1,989	$ 2,965
Employee compensation, commissions and benefits	4,444	4,384
Sales, VAT and other taxes payable	785	1,782
Other	4,094	3,234
Total accrued and other current liabilities	$ 11,312	$ 12,365

Note 11. Restructuring Charges

Restructuring and other charges in 2018, 2017 and 2016 consist of costs associated with the ongoing reorganization of our business operations and our ongoing expense re-alignment efforts. The expense amounts in all three years primarily relate to severance costs due to workforce reductions.

Restructuring charges are as follows (in thousands):

	Employee Separation Costs
Costs incurred and charged to expense for the year ended December 31, 2018	$ 1,873
Costs incurred and charged to expense for the year ended December 31, 2017	$ 2,526
Costs incurred and charged to expense for the year ended December 31, 2016	$ 1,489

Changes to the accrued restructuring liability (which is included in Accrued and other current liabilities) for 2018, 2017 and 2016, (in thousands):

	Employee Separation Costs
Accrued liability as of December 31, 2015	$ 1,404
Costs incurred and charged to expense for the year ended December 31, 2016	1,489
Cash payments	(2,684)
Accrued liability as of December 31, 2016	209
Costs incurred and charged to expense for the year ended December 31, 2017	2,526
Cash payments	(2,491)
Accrued liability as of December 31, 2017	244
Costs incurred and charged to expense for the year ended December 31, 2018	1,873
Cash payments	(1,362)
Accrued liability as of December 31, 2018	$ 755

Note 12. Lease Exit and Related Charges

As a result of the reduction in use of RealNetworks' office space, lease exit and related charges have been recognized representing rent and contractual operating expenses over the remaining life of the leases, including estimates of sublease income expected to be received. In the first quarter of 2018, we renegotiated the lease for our Seattle headquarters, reducing our total leased space by 15% and recorded a reduction to our lease loss accrual to reflect our reduced future obligations.

We continue to regularly evaluate the market for office space. If the market for such space changes further in future periods, or if our contractual subleases change, we may have to revise our estimates which may result in future adjustments to expense for excess office facilities.

Changes to accrued lease exit and related charges are as follows (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Accrued loss, beginning of year	$2,058	$3,186	$2,595
Additions and adjustments to the lease loss accrual, including estimated sublease income	(454)	—	2,428
Less amounts paid, net of sublease income	(382)	(1,128)	(1,837)
Accrued loss, end of year	1,222	2,058	3,186
Less current portion (included in Accrued and other current liabilities)	(346)	(341)	(1,024)
Accrued loss, non-current portion (included in Other long term liabilities)	$876	$1,717	$2,162

Note 13. Shareholders' Equity

Accumulated Other Comprehensive Loss

Changes in components of accumulated other comprehensive loss (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Investments			
Accumulated other comprehensive income (loss), beginning of period	$2	$(6)	$1,297
Unrealized gains (losses), net of tax effects of $18, $4, and $10	17	8	1,647
Reclassification adjustments for losses (gains) included in other income (expense), net of tax effects of $0, $0, and $0	—	—	(2,950)
Net current period other comprehensive income (loss)	17	8	(1,303)
Accumulated other comprehensive income (loss) balance, end of period	$19	$2	$(6)
Foreign currency translation			
Accumulated other comprehensive loss, beginning of period	$(59,549)	$(61,639)	$(60,777)
Translation adjustments	(1,588)	2,090	(1,134)
Reclassification adjustments for losses (gains) included in other income (expense)	—	—	272
Net current period other comprehensive income (loss)	(1,588)		